



**Mid-term Review of REIF:
Final Report
for
Scottish Enterprise**

August 2016



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Executive Summary

Introduction

- i. The report presents the findings of the mid-term review of the Renewable Energy Investment Fund (REIF) undertaken between February and May 2016. It covers the period from the Fund's first investment (December 2012) to March 2016. Over this time 30 investments were made in 28 projects. Of these two are now in administration and one has repaid the REIF loan. There are therefore projects 25 "live" projects accounting for 27 separate investments. The review involved interviews with beneficiaries of REIF funding (20 of the 25 projects), interviews with 25 stakeholders and analysis of monitoring data and reports and papers. Consultees are listed in Appendix A.
- ii. REIF is a £103 million fund to support projects that deliver energy from a renewable source, reduce the cost of renewable energy, or provide key solutions for renewable energy generation. It was established as a result of the Fossil Fuel levy negotiated with the UK Government, and is administered through the Scottish Investment Bank (SIB), part of Scottish Enterprise (SE). Although delivered through SE it supports projects across the whole of Scotland.
- iii. REIF was established to cover four types of investment: Marine, covering wave and tidal; District Heating schemes from renewables; Community Energy projects; and 'Other': projects that did not fall into the other categories but which met the Fund's overall objectives. It supports projects which benefit the economy of Scotland where there is a clear funding gap, by providing loans and equity investments at commercial rates. The Fund became operational in 2012, with the first investment being made in December of that year.
- iv. The rationale for public sector intervention in renewables reflects the reluctance of the private sector to invest, in part a result of information failures and asymmetries. There are strong public good and positive externalities rationales as REIF is supporting the generation of 'clean' energy and making a contribution to combating global warming. Given that many of the community projects supported are in rural areas (where development costs are higher and alternative forms of employment limited) there is also an equity rationale.

REIF Investments

- v. REIF has made a total of 30 investments in 28 projects, with a total approved amount of £59 million, of which £52.3 million has been invested by the end of March 2016. The greatest amount has been invested in the marine sector (£38 million, 12 investments), followed by the community energy sector (£10 million, 15 investments) and 'other' projects (£4.3 million, 3 investments). There has been no investment in District Heating for reasons such as projects being deemed not to be commercially viable, their small scale and the range of alternative grant and loan funding options available.
- vi. At the outset it was envisaged that REIF would support 20-40 investment transactions, invest the £103 million and achieve leverage investment of between £300 million and £400 million. This was based on original market analysis which envisaged a small number of major marine investments accounting for 60% of investment funds.

- vii. REIF's stretching targets reflected the scale of ambition for Scotland's renewables sector. These targets have been acknowledged to be challenging. In the future it may be that targets should be developed in co-operation with the REIF operational team who are likely to have a better idea as to what is achievable.
- viii. It became quickly apparent that the marine market, notably wave, was not ready to support this level of investment and there were two high profile failures (Aquamarine and Pelamis) which together received £12 million in REIF investment in addition to other public sector support. As a result, REIF has to date invested just over half of the total value of Fund. It has however, met the target for the number of transactions (30 against a target range of 20 to 40),
- ix. REIF has performed well against the third target of leverage, securing £91 million from the private sector and £26 million from other public sector sources. This is very positive given that the original additional investment target was widely recognised as extremely challenging and unlikely to be met. The leverage ratio is particularly good for community energy projects, at 5:1.
- x. The intention is that the Fund will make a commercial return on its loan and equity investments. However, it is currently too early to know what this might be and when it might come about.

Marine

- xi. Marine investments are typically larger than other Fund investments (an average of £3.5 million of REIF investment per project) and are a mix of loan and equity. REIF investment (at 41%) also accounts for a significant proportion of total project costs. These have been in tidal (9 investments) and in wave (3 investments). Of the 3 wave investments, the 2 failures illustrate the difficulties and financial resources required to commercialise wave technologies. A smaller, niche wave sector investment has been made in Albatern Ltd, harnessing wave energy for use in aquaculture.
- xii. For the tidal sector, the majority of investments have been in companies developing technologies. The exception is the investment in the MeyGen Ltd project. REIF investment into MeyGen (and support to its owner Atlantis) is almost £20 million, for the construction and deployment of a tidal array in the Pentland Firth, initially of four 1.5MW turbines. By the end of Phase 1, it is expected that the array will consist of 86 turbines, with a phased approach allowing for monitoring to inform scale-up of deployment through Phase 2.
- xiii. Other REIF investments have been in marine tidal developers, to finance pre-commercial, pre-demonstration projects. This includes investment in Nova Innovation Limited, which aims to create the world's first tidal array, fully installed and generating.
- xiv. The lack of major marine investment-ready projects (as initially envisaged in the appraisal work undertaken prior to REIF being set up) became apparent quite early. To a large extent this related to the scale of the technological challenge in the marine sector, notably for wave power, and the scale of investment required to take projects to commercial readiness.
- xv. Despite the issues with wave investment, the role of REIF in the marine sector, and the potential impacts that may arise, are seen as important by interviewees. There is acknowledgement that the wave sector was not ready for REIF investment at the time (or now, with niche market exceptions) but that REIF's support for tidal projects has helped to create

the market. Clearly a lot still rests on the success of the MeyGen project and its ability to become commercially viable.

- xvi. There have been direct job and GVA benefits to date arising from REIF investment, as companies are growing whilst they develop and test the technologies. The impacts to date are small in comparison to the anticipated or forecast benefits/impacts, which in turn will be small in comparison with the full economic and environmental impacts should projects such as MeyGen be successful. There is more that can and should be done to ensure these supply chain impacts are realised for Scotland. However, in terms of doing deals, bringing investors together, and proactively supporting and developing the Marine sector, then REIF should be praised.

Community Energy projects

- xvii. The 15 community energy projects are typically smaller, with average REIF investment of £0.7 million. REIF is also accounting for a smaller proportion of total project costs (17%) than with marine. The majority of the projects are on-shore wind, although there are also hydro schemes. Most are operational and generating electricity.
- xviii. Unlike the marine sector, where REIF investment is a combination of debt and equity, REIF investment in community energy projects is all debt finance. Projects take various forms, with REIF often the junior or subordinate debt lender to a commercial bank senior debt lender (where REIF bridges the funding gap). REIF also acts as co-funder with lenders who have a social focus, or where projects involve community shares or community buy-in to a private sector project.
- xix. The REIF team is providing valuable support to communities and its expertise and understanding has developed as the Fund has evolved. The team is well regarded by communities, the private sector and other stakeholders for its commitment, energy and ability to make things happen.
- xx. REIF investment is necessary for projects to happen. Despite the technology being proven, there remains a lack of appetite amongst other investors to cover the whole project costs, and there is an important element of de-risking for the private sector through REIF's involvement that allows deals to proceed.

Other Investments

- xxi. The 'Other' investment category covers projects that do not fall within the other 3 sub-categories but which will help to attain the Fund's objectives. To date there have been 3 investments, in: 2-B Limited, the North Hoo Field Limited in Orkney; and Gaia-Wind Limited. 'Other' investments are important to REIF in terms of allowing flexibility in the types of project supported. The investment in 2-B Limited is to develop the first of a two-blade wind turbine demonstrator with the potential to reduce costs for clean energy generators across Europe. 'Other' project investments have an average REIF investment value of £1.4 million covering 18% of total project costs.

Strategic Fit and Market Failure

- xxii. REIF occupies an important and unique space in the marketplace, able to adopt a whole-project investment approach which can fund both development and construction phases.

There are no comparator funds able to offer the mix of debt and equity finance to the range of projects that REIF invests in. Stakeholder consultations found that REIF is well regarded at UK and EC levels, being seen to support the right mix of projects and having the appropriate attitude to risk: one where REIF fills the market gap, helping to complete deals.

- xxiii. There are clear market failures in the parts of the renewable sector that REIF has been active in. REIF is investing in projects in the marine sector to make the deals happen, where the technologies are being demonstrated and are not yet proven on a fully commercial basis. Whilst the technology is proven for community energy projects, there remains a funding gap that REIF is able to fill. In addition REIF has the expertise to support communities. This complements the work of Local Energy Scotland and the Community and Renewable Energy Scheme (CARES).
- xxiv. Stakeholders, and those active in the market, consider there to be many positive features to REIF. These include REIF being a pan-Scotland fund with strong integration between SE and HIE and one which offers good levels of flexibility and a 'can do' approach. REIF is well regarded by the private sector, being cited as the junior lender of choice for community energy project debt finance.

REIF Impacts

Marine sector and other projects

- xxv. There are considerable impacts expected from the marine and 'other' project investments, although the majority of these are forecast. In all, 274 Full Time Equivalent (FTE) new jobs are expected to be created, of which 41 have been achieved to date. A total of 28 Scottish-based suppliers have been used, or are forecast to be used (61%), on contracts valued at £12 million.
- xxvi. Considerable emphasis (post-REIF investment) is on ensuring that the downstream supply chain benefits are realised, since many of these impacts can be significant, although this goes beyond the REIF team's remit and requires a wider SE and HIE approach. The additionality of REIF investment is high: above 80%. Few if any of the current or forecast project impacts would be achievable without the REIF investment. Indeed without REIF most projects would not have gone ahead.
- xxvii. The three marine projects that have achieved operational status (Pelamis, Aquamarine Power, and Nova Innovation) have generated 111MWh of renewable energy, saving an estimated net 54.4 tonnes of CO₂, to the end of March 2016. Over the same time scale the 'other' renewable projects have generated 1,777MWh of renewable energy, which has saved an estimated net 878.5 tonnes of CO₂. This is from one operational project (North Hoo). As these projects become commercially viable then REIF will begin to make a significant contribution to SE's 2015/16 to 2017/18 CO₂ savings targets¹.

Community Energy Sector

- xxviii. The 15 community energy projects have, or are expected to, directly create 13 new jobs, in addition to safeguarding three, and will generate £59 million in net GVA for the local economy.

¹ <https://www.scottish-enterprise.com/about-us/what-we-do/business>

To date, two jobs have been directly created although others are expected in the near future. The jobs and GVA created increase considerably when indirect impacts are taken into account. The Point and Sandwick project in the Outer Hebrides, for example, is currently forecasting the creation of 75 indirect jobs, a significant number in the context of the local area. Overall, additionality is high, above 80%, with few project impacts possible without the REIF investment.

- xxix. Local impacts are wide ranging, and it is a requirement of REIF investment that a Community Investment Plan for the dispersal of income accruing to the community is in place. The impacts extend to local contractors and the local supply chain, with community projects having engaged with, or being expected to engage with, 53 Scottish-based suppliers, in contracts to a total value of just under £27 million.
- xxx. Income received by communities as a result of REIF projects is supporting social and economic activity, from hospices to playparks, to business support projects and is playing a major role in contributing to inclusive growth, one of the 4 Is of Scotland's Economic Strategy. Twelve of the 15 community energy projects are in the Highlands and Islands, often in fragile and remote communities. The considerable incomes generated through REIF invested projects are helping to strengthen communities and will do so even more in the future.
- xxxi. Community projects are responsible for the majority of renewable energy generated by REIF-invested projects. By the end of March 2016, the operational projects had generated 4,431MWh of renewable energy. This has saved an estimated net 1,333 tonnes of CO₂. Of the energy produced almost 2,500MWh (56%) was generated by the Gigha Green Energy project, for the Gigha community.
- xxxii. Despite the maturity of much of the technology used by the community projects there remains a lack of appetite amongst investors to fund these projects on their own. As such REIF support is still needed to make projects happen.

Impact Summary

- xxxiii. To date overall impacts are modest: 89 jobs created or safeguarded and £9 million of additional GVA. Over the next 20 years impacts increase so that the total actual and expected benefits are 400 jobs created or safeguarded and £280 million of GVA.
- xxxiv. The total cost to SE of supporting these projects (investment and staff costs to the end of the 2016 financial year) is £55 million. The resultant Impact ratio (net GVA per £1 of SE support) is modest at 3:1 whilst the Cost per Job is very high.
- xxxv. However, REIF is making investments in projects (loans or equity) which have the potential to repay the capital, if not to make a profit. As such these impact figures could be seen as the "worst case" scenario: As loans are repaid and equity realised then the relative impact metrics should show significant improvements.
- xxxvi. In addition to these economic impacts arising directly from the investments, the money that will be returned to communities (an estimated £53 million over 20 years) will bring further economic benefits as well as wider community and social gains.

Future REIF direction and activity

- xxxvii. In the future there are a number of challenges and opportunities in part as, since REIF was established, there have been important changes in the markets. The marine tidal sector remains a market in development and much depends on the outcomes of this round of REIF investment in proving the technology. The changes related to the financial regimes governing community energy projects are also significant.
- xxxviii. In particular, Feed-In Tariff (FIT) changes for community energy projects will reduce income which has to date been critical to the success of deals. This will require both REIF and the community to evolve if community power generation is to continue to grow. Options might include such things as selling direct to electricity users and retaining more of the retail prices through Power Purchase Agreements. To date, REIF has been flexible and learned from early experiences to adapt the operations of the Fund. These characteristics will be needed in future due to further changes in the markets.
- xxxix. There have been tensions between REIF and the Scottish Government, reflecting the fact that REIF is delivered as a programme by SE but is funded directly by SG. However, active dialogue through the REIF Programme Board should be capable of resolving any issues.
- xl. The Account Team approach to projects, with the REIF team working with other parts of SE and HIE, is effective. It could, however, be strengthened in order to secure greater supply chain benefits for the Scottish economy.
- xli. A key opportunity for REIF is to align with the development of the new Energy Strategy for Scotland. This will see an increased emphasis on a systems approach to energy, and on heat, power, transport and energy demand reduction. REIF, with its strong market and investor understanding, is in a good position to respond to these opportunities. These are *additional* opportunities for REIF, over and above further investment propositions in the marine and community energy sectors.

Concluding remarks

- xlii. REIF has made an important contribution to the renewable sector, and has helped to foster and develop the nascent marine sector in a way that it is unlikely any other intervention mechanism could have achieved. The future returns for Scotland are potentially very significant. For community energy projects, the pro-activity and commercial-mindedness of the REIF team has helped deals to be completed and projects to become operational, addressing market failure. Additionality has been very high for all types of project: in excess of 80%. In effect without REIF these projects would not have gone ahead. There is a need to continue the momentum built up by REIF, in the Marine, Other and Community energy areas. Considerable expertise has been assembled and this is valued widely by partners, the private sector and project beneficiaries.
- xliii. There is strong enthusiasm for, and commitment to, a continuation of REIF across the spectrum of interested parties in the sector. The Fund and its team are regarded by a wide range of stakeholders as flexible, proactive and vital to the success of the renewables sector; a statement of positive intent with market credibility and an appropriate appetite for and attitude to risk.

Recommendations

- xliv. A small number of recommendations are made arising from the review:

- xliv. There is considerable merit in retaining REIF as an investment fund, with its unique position in the marketplace and great flexibility and in retaining the expertise of the REIF team. This includes a continuing focus on marine and community energy projects which, although different, both require the funding gap to be met and both help deliver the low carbon agenda for Scotland
- xlvi. The issues of governance should be resolved through continuing dialogue between the Scottish Government and SE/SIB through the existing Programme Board. This includes smoothing the differences arising from REIF as a project (as it is) and REIF as an investment fund. This is not irreconcilable. However the more certainty that can be given (such as around investment budget/levels) and the more clarity that is available (for example. in relation to roles) the better.
- xlvii. REIF should evolve and move into areas outlined in the emerging Energy Strategy, including the much larger electricity market of heat (where the Scottish Government has a target for 40,000 households connected to a district heating system by 2020) and local energy systems. This evolution needs to respond to market conditions and the investment readiness of propositions. There may be a transition in funding regimes for (low carbon) district heating, from grant funding to loan investment through mechanisms such as REIF, before full commercialisation is realised. This is particularly true if larger district heating schemes are to be pursued.
- xlviii. More could be done through the Account Team approach to ensure that barriers to realising supply chain benefits are overcome. This is not a recommendation for the REIF team *per se* (where there are limits to what can be done to ensure supply chain benefits are factored into deals), but one for SE or HIE to consider alongside REIF (for example through the SE Supply Chain and Infrastructure sub team).
- xlix. A focus should be retained on increasing the investment readiness of community projects through LES or similar initiatives (including strengthening the corporate finance, gatekeeper and project manager roles to support communities).
 - i. The community impacts arising from REIF funded projects should be celebrated and captured. There could usefully be follow-up research on the scale and impacts of these benefits.
 - ii. Future objectives for the Fund need to be SMART and more clearly output and impact focused, rather than activity based. These should include objectives related to turnover, job creation, GVA and supply chain impacts.
 - iii. REIF should explore new opportunities brought in by such measures as the Power Purchase Agreements. A new opportunity, to sign PPAs direct with electricity consumers, may emerge and this has the potential to secure higher revenues for the community who are able to sell the electricity they generate at a high tariff. REIF should consider an intervention around this.

1 Introduction

1.1 This report presents the findings of the Renewable Energy Investment Fund (REIF) Mid-Term review. It is based on consultations with stakeholders in the sector, including those involved in administering the Fund and those in the wider public and private sectors, and investee beneficiaries. The Fund has been in operation since 2012, and the time is right to review the Fund's activity and impact.

Context

1.2 REIF was introduced as a result of the Fossil Fuel Levy, negotiated between the UK and Scottish Governments. It was established to meet an identified investment demand within the renewable energy sector in Scotland and to meet the need for catalytic investment to demonstrate the long term viability of renewable energy technology.² With £103 million to invest in renewable energy, this was a significant sum of money, to be administered through the Scottish Investment Bank (SIB). The support is provided in the form of *“loans, guarantees and equity investments, all on fully commercial terms.”*³

1.3 REIF was to provide opportunities for legacy and leverage through its investments, and be additional and complementary to existing financing activities.

1.4 REIF was intended to support projects that: delivered energy from a renewable source; reduced the cost of renewable energy; or provided key solutions for renewable energy generation. Supported projects must also provide benefits to the economy of Scotland, *and* have a demonstrable funding gap. They were also to be at a sufficient stage of development to require REIF funding, initially before March 2016: now extended to March 2017.⁴

1.5 REIF was set up to cover four types of investment:

- Marine, covering wave and tidal projects;
- District Heating schemes from renewables;
- Community Energy projects; and
- ‘Other’ projects, subject to their meeting REIF’s overall objectives.

1.6 The PricewaterhouseCoopers (PwC) report that established the basis for the Fund anticipated that the majority of funding would be invested in four large marine projects, accounting for around £60 million, with the balance being split between District Heating (£40 million) and Community Energy (£10 million) investments.⁵ Due to a lack of an investment-ready project pipeline, technological challenges in the marine energy sector, and a range of more viable grant and loan funding options within the District Heating Sector, the pattern of investment has varied somewhat from that originally anticipated.

² PwC (2012) Renewable Energy Investment Fund: Market Characterisation Assessment

³ <http://www.scottish-enterprise.com/services/attract-investment/renewable-energy-investment-fund/whats-involved>

⁴ <http://www.scottish-enterprise.com/services/attract-investment/renewable-energy-investment-fund/overview>

⁵ PwC (2012) Renewable Energy Investment Fund: Market Characterisation Assessment, pp.4-5

Approach

1.7 The approach to the review has been to combine desk research with considerable primary research. This comprised an extensive programme of stakeholder consultations, coupled with interviews with the majority of projects that have been beneficiaries of REIF investment. In total, we have completed:

- 25 stakeholder consultations; and
- 20 project beneficiary consultations.⁶

1.8 A number of renewable energy projects that are not beneficiaries of REIF investment were also consulted. The review covered the period December 2012 to the end of March 2016. Over this period REIF had invested in 28 projects.

Structure of the report

1.9 The report is structured as follows:-

- Chapter 2 covers the evolution of the Fund, its strategic rationale, intended outcomes and performance. It also provides analysis of Fund investments and their characteristics;
- Chapter 3 reviews the Marine and 'Other' investments, including feedback from investee companies;
- Chapter 4 reviews the Community energy project investments;
- Chapter 5 provides additional market perspectives derived from stakeholder consultations and analysis, as well as including a contextual review of comparator funds; and
- Chapter 6 draws conclusions and recommendation.

1.10 The following appendices are also provided:

- Appendix A provides the list of consultees;
- Appendix B is a high level analysis of comparator funds; and ;
- Appendix C gives an overview of the Pelamis and Aquamarine investments;

⁶ All live projects were contacted for interview. Three projects did not respond and one project was approved for investment during the course of the review.

2 Evolution of REIF and fund investments

Key Point Summary

- By establishing the Renewable Energy Investment Fund (REIF), the Scottish Government sought to exploit Scotland's competitive advantage in renewable energy.
- The stretching targets reflected the scale of ambition for the Scottish renewables sector, but these could have reflected challenging market conditions more accurately and been more realistic.
- Marine wave energy was not as mature as originally anticipated, which has resulted in two high-profile project failures.
- REIF had invested £52.3 million in 28 projects between December 2012 and 31st March 2016. This was lower than the £103 million originally anticipated
- The main reason for this was that Marine energy, especially wave, proved to be further away from the market than originally envisaged
- Despite challenges, REIF's performance has been positive
- Returns to date are necessarily limited although future returns from interest and equity should see this change. However, there are still risks given that many of the bigger projects are not yet operational and REIF has some very large investments in projects that are still not proven.

Introduction

2.1 This chapter provides an overview of REIF's role and performance over the period December 2012 to 31st March 2016. It reviews the rationale for, and stated aims and objectives of, REIF, along with expenditure to date. It is based on a review of internal documents and stakeholder consultations. Specifically the chapter covers:-

- The rationale and evidence base for introducing REIF, including its alignment with Scottish Enterprise's (SE), Highlands and Islands Enterprise's (HIE) and Scottish Government's strategic priorities;
- Anticipated benefits and REIF targets;
- Budgets and costs;
- Actual expenditure;
- A profile of supported projects; and
- Performance against targets.

The Renewable Energy Investment Fund (REIF)

2.2 REIF was established in 2012 to cover four types of investment: Marine, covering wave and tidal; District Heating schemes from renewables; Community Energy projects; and 'Other' projects that

did not fall within the earlier categories but which met the Fund's overall objectives. It supports projects which benefit the economy of Scotland, where there is a clear funding gap, by providing loans and equity investments at commercial rates. It became operational in 2012, with the first investment in December of that year. It was designed to:-

- Be complementary and additional to other funding sources;
- Attract funding from other sources where possible; and
- Achieve sustainability and longevity where possible, and recycle investments for longer-term sub-sector support.⁷

2.3 The Fund was originally due to run from 2012 until 2015. However, the initial uptake of funding was slower than anticipated as a limited number of projects were investment ready. Accordingly it was initially extended to 2016 and then until at least March 2017. However the objectives and priorities have not changed. The aim of extending the programme is that it will be able to *"support greater investment in key areas of Scotland's growing renewables sector."*⁸

2.4 The Fund aims to attract *"private sector participation and/or the unlocking of grant funding in individual deals,"* using commercial funds and public sector funding as leverage.⁹ Support is provided in the form of *"loans, guarantees and equity investments, all on fully commercial terms."* Projects must be at the commercialisation phase.¹⁰

2.5 Although the Fund is bespoke, the typical forms of support offered are *"loans, loan guarantees and equity finance alongside co-investment partners."*¹¹ A minimum/maximum deal value was not set for investments, recognising the wide range of deal sizes between specific types of investments and within these investments.¹²

2.6 All of REIF's £103 million in funding comes from the Fossil Fuel Levy which was negotiated between the UK and the Scottish Governments. It is administered through the SIB, part of SE.¹³

2.7 To receive investment, the projects must:-

- Deliver energy from a renewable source, reduce the cost of renewable energy or provide key solutions for renewable energy generation;
- Provide benefit to the economy of Scotland;
- Have a demonstrable funding gap for REIF to consider; and
- Be at a sufficient stage of development to require REIF funding, initially before March 2016 and now before March 2017, following the Fund's extension.¹⁴

⁷ Scottish Enterprise (2012) *Project Approval Summary*, p.4

⁸ Scottish Enterprise (n.d.) *Renewable Energy Investment Fund Q&A*, p.1

⁹ Scottish Enterprise (n.d.) *Renewable Energy Investment Fund Q&A*, p.1

¹⁰ <http://www.scottish-enterprise.com/services/attract-investment/renewable-energy-investment-fund/whats-involved>

¹¹ Scottish Enterprise (n.d.) *Renewable Energy Investment Fund Q&A*, p.3

¹² Scottish Enterprise (n.d.) *Renewable Energy Investment Fund Q&A*, p.3

¹³ Scottish Enterprise (n.d.) *Renewable Energy Investment Fund Q&A*, p.1

¹⁴ <http://www.scottish-enterprise.com/services/attract-investment/renewable-energy-investment-fund/overview>

Strategic objectives

2.8 At the outset, three SMART objectives were set for the programme to be delivered by the end of March 2016. However, these have now been extended to March 2017, given the challenges noted above at 2.3:-

- Support between 20 and 40 investment transactions;
- Invest £103 million; and
- Achieve leverage investment of between £300 and £400 million.¹⁵

Rationale for investment and addressing market failure

2.9 REIF is designed to address the market failure associated with the renewable energy market. It is clear that in the case of renewable energy, the market failure is multi-layered. Key to the rationale for investment is the reluctance of commercial investors to support the development of renewable energy. There are externalities at play here. There is a major positive externality, in that the lack of investment means that a significant public good – a cleaner environment – is not being provided. Therefore there is a strong public good rationale for investment through REIF – to facilitate carbon reduction, reduced pollution and potentially bring cheaper energy costs benefitting society, as well as working to prove the market. Additionally, there is information failure where investors perceive a risk of not securing their returns on an investment in renewable energy, at least not in the short term. There is a failure here of the market not valuing the social benefit of renewable energy.

2.10 In the case of marine technology, the market is incomplete. The technology is new, untested, and the costs of development and installation are relatively high. As a result, investors are not prepared to take on the totality of risk associated with an investment.

2.11 For community renewables, market failure is more of an information failure. There is largely a mature, reliable technology, but investors are still reluctant to become involved. This reflects information asymmetry in that investors do not fully realise the potential returns to be made.

2.12 There is also an equity rationale, which manifests itself geographically. Many community renewable projects are in more remote, rural locations. This can mean that there are higher construction and installation costs, higher costs of grid connections and difficulties in achieving economies of scale. Without public support some of these projects would not go ahead as they would not be commercially viable.

2.13 There are, of course, features of the market (products of market failures or otherwise) that are also being addressed by REIF. These include funding gaps, or the requirement for junior lenders adopted by commercial investors reluctant to assume the full exposure to any single investment.

2.14 There is a clear need for a mechanism like REIF. A number of other mechanisms exist in the market supporting renewable energy, with similar aims to REIF, but the approach taken by REIF – financing entire project life cycles, or in some cases supporting whole companies – is arguably unique. Comparison to other approaches is drawn later on in the report in Chapter 5, and Appendix B.

¹⁵ Scottish Enterprise (2015) *Procedure Manual*. September 2015. Version 3.0.

Focus of REIF activities

2.15 The focus on investment activities is on three main priority sub-sectors. In addition there is another “Other” category, to allow projects to be supported that fall outwith these sub-sectors but which would help in the attainment of REIF’s objectives. The three sub-sectors are:-

- **Marine (Wave and Tidal)** project funding, targeted towards *“the deployment and operation of commercial scale arrays and marine energy array innovative enabling technology.”*¹⁶
- **Funding for Community Renewables** projects, with funding targeted at *“constituted non-profit distributing community groups, either solely or in partnership with other organisations, with the aim of delivering energy from a renewable source and benefit to the community and increasing community ownership of renewable generation in Scotland.”*¹⁷
- **Renewable District Heating** projects, with funding focused on *“providing finance to district heating projects which have a renewable heat source and which have received planning consent. Support for innovative enabling technologies or infrastructure such as pipework that will de-risk future renewable district heating projects will also be considered.”*¹⁸

2.16 In practice, there has been no investment in District Heating. This is due to a combination of factors including projects not being felt to be commercially viable, lack of attractiveness for private investors due to (limited) project scale, and the range of more viable grant and loan funding options within the District Heating sector.

2.17 A degree of flexibility is built into investment decisions. Projects are also eligible for funding *“which do not fall into the priority sub-sectors but that meet initial eligibility criteria and support the delivery of energy from a renewable source or is an innovative energy from a renewable source that will accelerate Scotland’s transition to a low carbon economy.”*¹⁹

Governance

2.18 REIF is overseen by a Programme Board, which includes representatives from SE, HIE and the Scottish Government. The Board’s role is to *“advise and support the Senior Responsible Owner²⁰ (SRO) with particular reference to the achievement of the strategic objectives for the programme.”*²¹ There are rigorous approval processes. All projects are reviewed and there are different approval routes according to the investment level (Table 2.1) Due to the size of projects invested in approval at full SE Board is often required, and in some cases Scottish Government approval is also needed.

¹⁶ Scottish Enterprise (n.d.) *Renewable Energy Investment Fund Q&A*, p.1

¹⁷ Scottish Enterprise (n.d.) *Renewable Energy Investment Fund Q&A*, pp. 1-2

¹⁸ Scottish Enterprise (n.d.) *Renewable Energy Investment Fund Q&A*, p.2

¹⁹ Scottish Enterprise (n.d.) *Renewable Energy Investment Fund Q&A*, p.2

²⁰ A SRO is the visible owner of the overall programme, accountable for delivery and recognised as the key leadership figure.

²¹ Scottish Enterprise (2012) *Project Approval Summary*, p.6

Table 2.1: REIF investment decision-making thresholds

Project value	Decision level
Up to £1.5 million	Two approval papers required, initial and final, with sign-off by Head of SIB
£1.5 - £3 million	Requires approval by SIB investment committee, which meets on a weekly basis, with supporting paper from, MD for SDI and SE International Operations
Over £3 million	This requires approval by the full SE Board

Contribution to strategic priorities

2.19 Prior to the introduction of REIF, a scoping exercise and options appraisal²² were completed in August 2012 which assessed the characteristics of the market. This was informed by PWC's *Renewable Energy Investment Fund: Market Characterisation Assessment* report. From this, the decision was made to focus on marine (wave and tidal); renewable district heating; community-owned renewable; and other innovative renewable technology projects (the "Other" project category.). When designing the Fund, complementarity with other/existing streams of funding was assessed.²³

2.20 The development principles for REIF were defined as follows:

- REIF would be complementary and additional to other funding sources, but should be able to attract funding from other sources where possible;
- REIF would build on the experience of SIB to ensure that the delivery mechanism has the scope to attract other investors; and
- Subject to ensuring that the current needs of each sub-sector were satisfied such that longevity is possible, REIF aimed to recycle investment resources for longer-term sub-sector support.²⁴

2.21 As part of this appraisal process, the Programme's strategic alignment with the Scottish Government was assessed. The appraisal concluded that the Programme "*addresses the strategic requirements*" of SG, SE and HIE. Approval of REIF as a "*designated investment fund*" was given in October 2012.²⁵ This set out the contribution of REIF to Scottish Government's, SE's and HIE's priorities.

Scottish Government

2.22 The assessment stated that *the "REIF responds strongly to Scottish Government's strategies and priorities."* This included the conclusion that:-

- "*It will sustain our competitive advantage in offshore wind and marine energy and contribute to the [Scottish Government's] ambition of creating 35,000 direct jobs and generating an extra £11 billion in GVA by 2020; and*

²² Scottish Enterprise (2012) *Renewable Energy Investment Fund Development Programme: Options Appraisal*. 21 June 2012

²³ Scottish Enterprise (n.d.) *Renewable Energy Investment Fund Q&A*, p.2

²⁴ Scottish Enterprise (n.d.) *Renewable Energy Investment Fund (REIF): Update and Operational Arrangements*. Sector Delivery Directorate & Scottish Investment Bank.

²⁵ Scottish Enterprise (n.d.) *Renewable Energy Investment Fund (REIF): Update and Operational Arrangements*. Sector Delivery Directorate & Scottish Investment Bank.

- *It will work with a range of public, third sector organisations and investors to enable innovative funding models that reduce emissions and dependency on fossil fuels and also provide revenues to communities, households and investors.*²⁶

2.23 Further, in March 2012, the Scottish Minister for Energy, Enterprise and Tourism stated, in a Ministerial Statement, that:

- *“A strong focus of the fund (is) to be on innovative renewable technologies in particular marine, wave and tidal renewable energy; and*
- *There are other, equally important, renewable sectors which are at an earlier stage of development, or with community rather than commercial aims, where investment is needed to realise their ambition. The Fossil Fuel Levy monies could, and should, be part of that solution.*²⁷

Scottish Enterprise and Highlands and Islands Enterprise

2.24 SE and HIE have played a crucial role in developing the programme and have thus ensured that it contributes to their priorities, including to:-

- Develop a globally competitive offshore renewable energy (wind and marine) sector in Scotland by 2015;
- Maintain and extend Scotland’s reputation as an international centre for marine renewables. This will require substantial sectoral development, with significant and sustainable economic and community benefits accruing to the region over many years; and
- Support communities to maximise community benefit from third party renewable energy developments and help community enterprises to develop their own projects.²⁸

SE Sector Delivery Plan for Renewable Energy

2.25 In addition, for SE, REIF has been aligned with its sector priorities. This is demonstrated in its *Renewables Sector Delivery Plan* (2012-15) which recognises the benefits of marine renewable energy by providing support:-

- To build a fully, globally competitive Scottish Marine Energy Industry;
- For investment in innovation and R&D to prove marine technology, reduce the cost of energy and improve durability; and
- For the continued development of a competitive marine industry infrastructure in Scotland.²⁹

2.26 Therefore, the Programme was determined to fit strategically with objectives for SE and HIE and the Scottish Government, recognising the increasing importance of renewable energies and the need to increase investors’ confidence in projects.

²⁶ Scottish Enterprise (2012) *Project Approval Summary*, p.3

²⁷ Scottish Enterprise (2012) *Project Approval Summary*, p.3

²⁸ Scottish Enterprise (2012) *Project Approval Summary*, p.3

²⁹ Scottish Enterprise (2012) *Project Approval Summary*, p.4

Local Energy Scotland and the Community and Renewable Energy Scheme

2.27 Part of REIF's objective is to align with, and complement, additional, existing schemes and funding mechanisms. Local Energy Scotland (LES) is a consortium made up of the Energy Saving Trust (EST), Changeworks, The Energy Agency, SCARF and the Wise Group, and was established to provide guidance and advice to communities and rural businesses that are developing renewable energy schemes. Part of its remit is to deliver the Community and Renewable Energy Scheme (CARES) on behalf of the Scottish Government.

2.28 The scheme is intended to accelerate progress towards the Scottish Government's target of 500MW generated by locally-or community-owned schemes by 2020. CARES provides development and pre-planning loans to renewable projects with significant community involvement and benefit. It is designed to reduce the risk involved in the early stages of project development.³⁰

2.29 Since the launch of REIF, there has also been the intention to develop a pipeline of community projects and, along with wider support from LES, facilitate access to REIF for implementation financing by helping projects become investor ready.

Anticipated benefits and targets

2.30 As part of the appraisal undertaken by SE as part of the project approval process, the programme's potential economic, social and community benefits were assessed. Economic benefits were expected to include *"net GVA and jobs which could be created at project beneficiaries and in their supply chains in Scotland."*³¹ Wider socio-economic impacts were expected to include contribution to: low-carbon strategic emissions reduction objectives; the fuel poverty agenda; community projects, infrastructure, community cohesion, and stimulation; and the development of renewable energy technologies and markets.³²

2.31 No specific targets were set for the Fund. However, a Monitoring and Evaluation Framework was established at the outset to capture information at project level. This includes:-

- Gross and net GVA, expected and actual, indirect and induced;
- Jobs created and safeguarded, including indirect and induced jobs (i.e. jobs in the immediate and wider supply chain);
- Leverage of private and public sector funds;
- Number of Scottish-based suppliers for each project;
- Number of pre-commercial and commercial devices deployed;
- The displacement of conventional fuel sources by type;
- Net tonnes of CO₂ saved;
- IP generated through the funding;
- Generated MWh of renewable energy (for community projects);
- Net income to the community;
- Narrative on community projects and community benefits;

³⁰ <http://www.localenergyscotland.org/who-we-are/about-us/>

³¹ Scottish Enterprise (2012) *Project Approval Summary*, p.4

³² Scottish Enterprise (2012) *Project Approval Summary*, p.5

- MWh of renewable heat (for district heating schemes); and
- Number of new connections (district heating).

2.32 In order to achieve these benefits and the overall objectives identified previously, one of the key criteria when assessing eligibility is the extent of *community benefit* (sustainability through community engagement, small business development, and targeted recruitment and training) for the Scottish economy. Specifically, projects must have a market failure (to justify the need for REIF support), a demonstrable funding gap and the potential to provide economic benefit to Scotland.³³ Community energy projects must either be delivered by a non-profit community organisation or be a joint venture with a developer. They must also aim to deliver benefit to the community in question, as well as increasing the overall share of community renewable energy generation and asset ownership.³⁴ Community Investment Plans are a mandatory requirement of REIF funding. Securing community benefits also helps contribute to the inclusive growth strand of the Scottish Economic Strategy which promotes more equitable growth across the country.

2.33 Each project's potential commercial and socio-economic benefits are assessed and it is on this basis that investment decisions are made. ,

REIF budget

2.34 A total of **£103 million** was allocated for the fund, with an additional £70,000 made available from SE, HIE and SG for programme development. The fund was designed to be discretionary with each project being “*assessed on a case by case basis.*”³⁵ No European funding was sought as the appraisal suggested that it would not be “*appropriate at the programme level,*” although individual project investments would be eligible.³⁶

2.35 The anticipated expenditure by year is set out in Table 2.2. It was profiled as follows: 4% was anticipated to be spent in the first year (2012-13), for set-up and preparation time. The majority of funding (52%) was expected to be distributed in the second year (2013-14), with a further 44% profiled for 2014-15.

Table 2.2: Allocated funding by year (anticipated)

Year	Allocated est. funding amount	Percentage
2012-13	£4,070,000	4%
2013-14	£54,000,000	52%
2014-15	£45,000,000	44%
Total	£103,070,000	100%

Source: Scottish Enterprise (2012) *Project Approval Summary*, p.1

2.36 As shown in Table 2.3, the indicative budget split, prepared internally, saw over two thirds of spend being allocated to marine, wave and tidal energy projects. Just under a-quarter was allocated to community renewables projects, with a small amount to district heating. No initial specific allocation was made for ‘other’ projects.

³³ <http://www.scottish-enterprise.com/services/attract-investment/renewable-energy-investment-fund/are-you-eligible>

³⁴ Scottish Enterprise (2012) REIF – Scheme – SE Board Approval Paper, p.6

³⁵ <http://www.scottish-enterprise.com/services/attract-investment/renewable-energy-investment-fund/whats-involved>

³⁶ Scottish Enterprise (2012) *Project Approval Summary*, p.1

Table 2.3: Allocated funding by project type (Indicative)

Project type	Allocated est. funding amount	Percentage
Marine energy (wave and tidal)	£70,000,000	68%
Community renewables	£25,000,000	24%
District heating	£8,000,000	8%
Total	£103,000,000	100%

Source: Renewable Energy Investment Fund (2012) Agreed Project Criteria, p.2

2.37 However, from the outset, it was recognised by SE and the SIB that “forecast[ing] the timing of transactions and cash draw-down” was challenging due to the type of sub-sectors and the ‘dynamic’ nature of the project pipeline.³⁷ As such, at the Programme’s inception, it was estimated that “the current pipeline will result in transactions with commitments to the value of up to £19 million by the end of the financial year 12/13.” However, this was dependent on one “substantial transaction” leading to “significant variability.”³⁸

Private sector leverage

2.38 The leveraging of additional investment was a crucial component of the Programme’s design. It was estimated that REIF investment should attract an additional four-fold co-investment, while recognising that this was project-specific. Overall, an estimated **£300-£400 million in additional investment** was forecast, bringing the total investment (including REIF) to **£403-£503 million**.³⁹ These calculations were made recognising that while additional leverage was difficult to estimate, each investment “is made on a commercial basis⁴⁰ and significant leverage is anticipated from a range of sources, including commercial funds and other public sector mechanisms.”⁴¹

Resourcing REIF

2.39 In 2012, it was anticipated that six FTE employees would be required in the first year of the Fund, with a total of 14 by 2015. To cover staffing, it was forecasted that the annual additional costs of delivering REIF would be £750,000 by the programme’s third year, 2015.

The REIF team

2.40 The REIF team currently comprises nine members of staff, although not all are full time. The Head of REIF is supported by the REIF Senior Manager. The investment team is effectively split into two – with three investment managers handling Community project investments, and four dealing with Marine and Other project investments. As part of SIB, the REIF team benefits from SIB’s investment readiness specialists. However, unlike the rest of SIB, where transaction and portfolio management functions are split, given the higher volume of deals, the REIF team itself monitors the progress of the deals (i.e. performs the portfolio management function).

2.41 As might be expected salary costs have increased over time as more staff were recruited. When account is taken of employer’s oncosts (for example such things as National Insurance and

³⁷ Scottish Enterprise (n.d.) *Renewable Energy Investment Fund (REIF): Update and Operational Arrangements*. Sector Delivery Directorate & Scottish Investment Bank, p.3

³⁸ Scottish Enterprise (n.d.) *Renewable Energy Investment Fund (REIF): Update and Operational Arrangements*. Sector Delivery Directorate & Scottish Investment Bank, p.3

³⁹ Scottish Enterprise (2012) *Project Approval Summary*, p.1

⁴⁰ i.e. loans are made at market rates, and not at rates effectively subsidised by the public sector and lower than commercial lenders

⁴¹ Scottish Enterprise (n.d.) *Renewable Energy Investment Fund (REIF): Update and Operational Arrangements*. Sector Delivery Directorate & Scottish Investment Bank, p.3

pension contributions) and overheads such as property and corporate services the total costs of delivering REIF between 2012/13 and 2015/16 amounted to £3.019 million.

2.42 As a proportion of overall programme spend, incorporating staff costs and investment, total resourcing costs for delivery account for just over **5% of all costs**. Though costs may appear high in comparison to other, wider business support provided through SE or HIE⁴², it is important to recognise the intensity of the work of the REIF team. The team must take time to build partnerships and negotiate deals with senior lenders. They also commit significant resource to support community energy deals to become investment ready then provide support through the investment process along with post-deal follow-up and after-care. Given the intensity of the support it is difficult to compare costs in any meaningful way with other programmes such as CARES and HIE's Wave Energy Scotland.

Promoting REIF

2.43 A 'Team Scotland' approach is taken to promoting REIF. The REIF team undertake self-promotion of the fund with support from SE, HIE Scottish Government and other strategic partners. In terms of Marine investment, the promotion has been targeted at a relatively small but active, well-informed and well-connected sector. REIF is also promoted through LES and CARES to potential Community renewable energy projects.

Actual expenditure

2.44 To the end of March 2016, 30 investments had been made totalling **£52,260,037**. This money was invested in 28 different projects. Of these, one had repaid the loan from REIF (AWS Ocean Energy) and two others (Aquamarine and Pelamis) had gone into administration. Thus there were 25 "live" projects, ones in which there was either an outstanding loan or an equity investment. These represented 27 separate investments (two projects having received two separate investments). Tables 2.4 and 2.5 give details of the investments. The £52 million represents just over half (**51%**) of the monies originally allocated to be spent from 2013 to 2015. Of this, **£36,149,007 (69%)** has been in the form of loans and **£16,111,030 (31%)** in ordinary shares/equity investment by REIF into projects and companies who use the money to finance capital investment, all of which has been in Marine projects.

Table 2.4: Total investment to date (end of March 2016) – REIF ordinary shares

Company	Total investment to date
REIF – Marine	
MeyGen Limited	£10,800,000
Ocean Flow Energy Limited	£150,177
Scotrenewables Tidal Power Limited	£5,160,853
Total	£16,111,030

Source: REIF Monitoring Information

2.45 Of the loan investments, £21,842,165 has been invested in Marine projects (60%); £9,996,841 in Community Renewables projects (28%); and £4,310,000 (12%) in Other projects (that is, wind turbine related projects), including 2-B Energy Limited, North Hoo Field Limited and Gaia-Wind Limited. These include projects designed to "support a wind turbine to power a wood pellet production

⁴² For example, total expenditure on the Entrepreneurship Support Programme delivered by SE and HIE amounted to just over £1 million between April 2012 and March 2016.

plant” and “funds to help a turbine manufacturer develop its export markets.”⁴³ To date, there have been no funds invested in District Heating projects.

2.46 A key point to note is that there was a removal of budget by the Scottish Government in 2015/16, and this created uncertainty around the Fund. In addition several deals were completed using SIB’s other investment funds because REIF was not available. The analysis in this section is therefore not a true reflection of the REIF team’s work or the demand for the Fund.

⁴³ Scottish Enterprise (2016) *Invitation to Quote for a Mid-Term Review of the Renewable Energy Investment Fund*. Appendix 1, p.8

Table 2.5: Total investment to date (end of March 2016) – REIF loans

Company	Total investment to date
REIF – Marine	
Albatern Limited	£400,000
Aquamarine Power Limited*	£5,400,000
Atlantis Resources (Scotland)	£2,000,000
Atlantis Resources – MCT acquisition	£2,000,000
AWS Ocean Energy Limited**	£216,000
MeyGen Limited	£4,764,690
Nova Innovation Limited	£700,000
Pelamis Wave Power Limited*	£6,100,000
Sustainable Marine Energy Limited	£261,475
Total	£21,842,165
REIF – Community Renewables	
Barra and Vatersay Wind Energy	£550,000
Berwickshire Community Renewables Limited	£1,750,000
Broadband Energy (Donich) Limited	£733,669
Callander Community Hydro Limited	£311,000
Fintry Renewable Energy	£615,000
Galson Energy Limited	£400,000
Gigha Green Power Limited	£96,000
Green Energy Mull Ltd. (Garmony)	£413,000
Islay Energy Community Benefit	£735,000
Kilfinan Community Forest Company	£113,173
Point & Sandwich Power Limited	£2,249,999
Stewart Energy Ltd	£1,630,000
Sunart Community Renewables	£60,000
Tarbert & Skipness Community Trust	£170,000
Tighnabruaich District Development	£170,000
Total	£9,996,841
REIF – Other	
2-B Energy Limited	£3,410,000
Gaia-Wind Limited	£200,000
North Hoo Field Limited	£700,000
Total	£4,310,000
Overall Total	£36,149,006

*NB: Companies have gone into administration

** NB: Repayment of the loan to AWS Ocean Energy has been completed.

Source: REIF Monitoring Information

Project profile

2.48 The analysis in this section includes the three projects starred in Table 2.5 above, although two (Aquamarine Power Limited (REIF investment of £5.4 million) and Pelamis Wave Power Limited (£6.1 million)) have since gone into administration and the third (AWS Ocean Energy Limited (£216,000)) has since repaid its loan in full.

AWS Ocean Energy, Aquamarine and Pelamis

- **AWS Ocean Energy** is a marine energy company based in Inverness. It piloted its AWS-III power generating cassette at a site in Orkney, as part of a WATERS-funded project. However, following completion of testing, AWS investors withdrew from the business and shares were acquired by Management. The company is currently operating on a care and maintenance basis until market conditions improve;
- **Aquamarine Power Limited** was a wave energy company that developed the Oyster technology: a wave-powered pump that used high pressure water to drive an onshore hydro-electric turbine.⁴⁴ Aquamarine had sites on Orkney, as well as a subsidiary, Lewis Wave Power. SSE and ABB provided private sector equity funding for the company. Aquamarine went into administration in October 2015, with BDO appointed as administrators; and
- **Pelamis Wave Power Limited** was the developer of the world's first offshore wave power converter to successfully generate electricity, in 2004. Their second generation device comprises five connected sections which flex and bend in the waves. This movement is harnessed by hydraulic rams at the joints which in turn drive electrical generators located inside the device.⁴⁵ Despite REIF investment and efforts to raise private sector investment and explore sale options, the company went into administration in November 2014. Wave Energy Scotland (WES), as a subsidiary of HIE, now owns the Pelamis' assets and IP.

2.49 Both Pelamis and Aquamarine were already receiving significant investments (around £7 million in total) from SE prior to REIF investment, and as wave energy companies, were more affected by the withdrawal of the large utility companies from the market than their tidal energy counterparts. Further, wave energy technology is more experimental than tidal, and is therefore considered more high-risk. For further discussion on these investments see Appendix C.

2.50 The failure rate of these projects, at 20% by value of investment, is considerable, and reflects the fact that having a small number of large deals increases the risk of overall Fund failure. While the trend of REIF investments has been towards more, smaller community energy investments than originally intended, thereby spreading the risk, the scale of the MeyGen investment (Table 2.4) remains a considerable risk to the Fund. The exposure of REIF here is considerable – more than one third of its total investment to date, and almost one half of its current investment portfolio excluding those projects that have gone into administration. However, it can be argued that these failures are justification in themselves for REIF – in short, there is no market, and without REIF, very little, if anything, would happen.

⁴⁴ <http://www.aquamarinepower.com/technology>

⁴⁵ <http://www.emec.org.uk/about-us/wave-clients/pelamis-wave-power/>

Project profile analysis

2.51 The analysis, therefore, is based on a total of 28 projects which received investment from REIF to the end of March 2016. The breakdown by project type is shown in Table 2.6. Around half are Community Renewables projects; over one third are Marine projects; and 11% are defined as 'Other'. Of the 28, 12 have generated electricity, and nine are considered commercially viable that is the electricity generated is returning commercial benefits to the project. There are three projects which have generated electricity but are not currently commercial, including Pelamis Wave Power and Aquamarine Power, which have gone into administration.

Table 2.6: Investments by project type

Type	No of Projects	% of total projects	Generating	Commercially viable
Community	15	54%	8	7
Marine	10	36%	3	0
Other	3	11%	1	2
All	28	100%	12	9

Source: REIF Monitoring and Evaluation Information

2.52 To the end of March 2016, almost **£52.3 million** has been invested (excluding the investment in Aquamarine and Pelamis, this figure is £40.8 million), of which almost three quarters (73%) has been invested in Marine projects, one fifth (19%) in Community project and 8% in Other projects, as shown in Table 2.7. The average amount invested is greatest for Marine projects (£3.5 million), followed by £1.4 million for Other projects. The average amount invested is smallest for Community Renewables projects, at £670,000.

Table 2.7 Total amount invested to date

Type	Amount invested to date	% of amount invested to date	Ave. amount invested to date
Marine	£37,953,195	73%	£3,795,320
Community	£9,996,840	19%	£666,456
Other	£4,310,000	8%	£1,436,667
All	£52,260,036	100%	£1,866,430

Source: REIF Monitoring and Evaluation Information

2.53 In terms of geography, 20 investments have been approved in the Highlands and Islands⁴⁶ (71%) – with eight of these in Argyll and Bute. The remaining eight have been made in SE's area. This suggests that rural areas, in particular, have benefitted from REIF due to the nature of the projects. Table 2.8 provides a breakdown of the number of investments by project region and local authority area.

⁴⁶ Please note, this figure includes investments made in Argyll and Bute. However, the HIE area excludes Loch Lomond and Helensburgh in Argyll and Bute, and includes Arran and the Cumbraes, in North Ayrshire.

Table 2.8: Investments by project location

Location of Project	No. of Investments	Value of Investment to Date
HIE Area	20	£39,793,859
SE Area	8	£12,466,177
Total	28	£52,260,036
Local Authority		
Argyll & Bute	8	£2,581,019
Orkney	5	£17,138,328
Eilean Siar	3	£3,199,999
Highland	2	£16,024,690
Edinburgh	2	£4,000,000
Shetland	2	£1,400,000
Stirling	2	£926,000
Fife	1	£3,410,000
Scottish Borders	1	£1,750,000
South Lanarkshire	1	£1,630,000
Glasgow	1	£200,000
Total	28	£52,260,036

Source: REIF Monitoring and Evaluation Information

2.54 Total approved REIF investment to the end of March 2016 is just under **£58.6 million**. As stated earlier (Paragraph 2.52) £52.3 million of this (89%) has already been drawn down and invested, £40.8 million excluding Aquamarine, Pelamis and AWS Ocean Energy. The breakdown of approved REIF investment is illustrated at Table 2.9.

Table 2.9: Total approved REIF investment

Type	Total approved REIF investment	% of total approved investment	Av approved REIF investment
Marine	£43,861,024	75%	£3,655,085
Community	£10,208,169	17%	£680,545
Other	£4,500,000	8%	£1,500,000
All	£58,569,193	100%	£2,019,627

Source: REIF Monitoring and Evaluation Information

2.55 For the 28 individual projects, total **approved** REIF investment accounts for 30% of the combined total project costs (**£193.6 million**).

2.56 . Of total project costs, over half are for Marine projects; around a third for Community Renewables and 13% for Other, as shown in Table 2.10. The average total project cost for Marine projects is highest (just under £10.8 million), compared to £8.2 million for Other and £4.1 million for Community projects.

2.57 Marine projects are more reliant on REIF investment, due to the high-risk nature of the sector, and the resultant lack of investor appetite justifying public intervention. On average, REIF investment

accounts for over two fifths (41%) of total Marine project costs, while this is much lower for Other (18%) and Community (17%) projects, as shown at Table 2.10.

Table 2.10: Total project costs

Project type	Total project cost	% of total costs	Ave. project costs	Total approved REIF investment as % of total project cost
Marine	£107,550,048	55%	£10,755,005	41%
Community	£61,468,062	32%	£4,097,871	17%
Other	£24,588,000	13%	£8,196,000	18%
All	£193,606,110	100%	£6,914,504	30%

Source: REIF Monitoring and Evaluation Information

2.58 Funding is heavily weighted towards Marine projects, which represent more than half (55%) of all total project cost yet almost three quarters (73%) of all REIF investment (see Table 2.7). Community projects (32% of all project costs and 19% of REIF investment) and Other projects (13% of all project costs and 8% of REIF investment) are less reliant on REIF investment for their overall total project costs.

2.59 Table 2.11 shows the breakdown of total approved project investment by loan, equity and guarantee. All Community and Other project investment are in the form of a loan, whereas 41% of Marine investment is equity. None of the approved investment has been in the form of a guarantee – whilst this facility has been available to REIF, to date there has been a lack of appropriate opportunities to guarantee projects.

Table 2.11: Breakdown of total approved REIF investment

Type	Total approved REIF investment	Of which: loan	Of which: equity	Of which: guarantee
Marine	£43,861,024	£25,961,000	£17,900,024	£0
Community	£10,208,169	£10,208,169	£0	£0
Other	£4,500,000	£4,500,000	£0	£0
All	£58,569,193	£40,669,169	£17,900,024	£0

Source: REIF Monitoring and Evaluation Information

2.60 To date, just **over £100 million** is expected to be leveraged from the private sector. Of this, 56% is expected to come from Community Renewables projects, 29% for Marine projects and 15% for Other projects. However, the average expected private sector leverage is greatest for Other projects (£4.4m).

2.61 To the end of March 2016, the amount actually leveraged from the private sector is slightly below that expected, at **£90.9 million** (£9.1 million less, or 9%) (Table 2.12). Of the actual private sector leveraged investment, the largest private sector funders are Santander Bank (20%), Triodos Bank (16%), Atlantis Resources Limited (12%) and Temporis Capital LLP (10%). In total, there have been approximately 35 individual funders.

Table 2.12: Actual total private sector investment leveraged

Type	Total private sector leveraged (actual)	% of total private sector leveraged	Av total private sector leveraged (actual)	Leverage ratio
Community	£50,375,116	55%	£3,358,341	5.0:1
Marine	£29,479,361	32%	£2,947,936	0.8:1
Other	£11,058,720	12%	£3,686,240	2.6:1
All	£90,913,197	100%	£3,246,900	1.7:1

Source: REIF Monitoring and Evaluation Information

2.62 An additional **£26.4 million** has been contributed by the public sector, from 15 different sources (Table 2.13). This is most common for Marine projects (68%). Almost two thirds of the total has come from two individual sources: grants (unknown) (37%) and the Crown Estate (28%), with significant investments also from EWOZ/FLOW Dutch grants (8%) and DECC (7%).

Table 2.13: Additional public sector investment leveraged

Type	Other public sector money in transaction	% of other public sector money in transaction	Av other public sector money in transaction	Leverage ratio
Marine	£17,976,633	68%	£1,797,663	0.5:1
Other	£7,273,700	28%	£2,424,567	1.7:1
Community	£1,147,000	4%	£76,467	0.1:1
All	£26,397,333	100%	£942,762	0.5:1

Source: REIF Monitoring and Evaluation Information

2.63 As previously mentioned, just over half (51%) of the monies originally allocated to be spent in 2012/13 to 2014/15 had been invested by the end of March 2016. Table 2.14 shows the pattern of REIF investment over time. Actual investment falls short of the indicative allocation for each year, particularly during 2013/14 when only 16% of the anticipated allocated funding was spent.

Table 2.14: Actual v anticipated funding by year

Year	Actual invested funding	Marine	Community	Other	Indicative allocated funding	% against indicative allocation
2012-13	£1,372,000	£1,050,000	£322,000	£ -	£4,000,000	34%
2013-14	£8,769,621	£6,900,024	£1,433,390	£436,207	£54,000,000	16%
2014-15	£32,403,990	£24,562,105	£5,537,609	£2,304,276	£45,000,000	72%
2015-16	£9,714,425*	£5,441,066	£2,703,842	£1,569,517	£ -	-
All	£52,260,036	£37,953,195	£9,996,841	£4,310,000	£103,000,000	51%

Source: REIF Monitoring and Evaluation Information

* At the time of reporting

2.64 The first Community investment was made in December 2012, followed by the first Marine investment in January 2013. The first 'Other' investment was made by REIF in March 2014.

2.65 The original funding profile can be seen as highly ambitious given what we now know about the maturity of the renewables sector, particularly Marine at that time. The investment profile also under-estimated the time taken to promote and launch the Fund. Given these factors, REIF

investment has risen sharply year on year, demonstrating a strong uplift in project deals and investment in 2014-2015.

Performance against targets

2.66 Progress against targets is ongoing, in light of the programme's extension to 2017 and the challenges noted previously (Table 2.15). This is with the exception of the first objective, with the target for the number of investments being met (28 achieved so far, out of a target of 20-40). There are more projects than originally anticipated because there was initially the expectation that four Marine projects would account for 60% of REIF expenditure.

Table 2.15: Progress towards targets as of 31st March 2016

Target	Progress Towards Target
20-40 investment transactions across the three sub-sectors	140%*
Invest £103 million	51%
Leverage investment of £300-£400 million	39%*^

*Percentage is based on minimum figure of target range

^Please note, this figure includes both private and public sector leverage

Source: REIF Monitoring and Evaluation Information

2.67 As a result of this, and other challenges in relation to the need to promote the Fund and develop the sector, progress made towards the other targets appears modest, with just over half of the target being achieved for the total invested (£52.3 million against £103 million) and total leveraged from both the private and public sector (£117 million against £300-£400 million).

2.68 Assuming the target end-date to be as originally intended (31st March 2016), it can be argued that REIF has failed to meet two of its three investment targets, as detailed in Table 2.16. Even allowing for the extension to March 2017, meeting both the investment and leverage targets, of £103 million invested and a minimum of £300 million leveraged respectively, seems unlikely to be achieved. However, the deliberately challenging nature of the initial targets, which reflected the scale of Scotland's ambition with regard to renewable energy, should not be ignored.

2.69 Programme Management documents recognise the challenges of reaching these targets. For example, the 2015 Procedure Manual highlights that the target for additional investment "was *always challenging*" to achieve and is unlikely to be delivered.⁴⁷

Project Impacts

2.70 To the end of March 2016, £284,468 had been returned from REIF's investments (0.5% of the £52.3 million invested). Of this, the majority (80%) was from Community projects, with the balance from Other projects. No income had been received from Marine projects. However, given the age of the investments the limited returns to date are not unexpected. The expectation is that there will be a longer term commercial; return from both the equity and loan investments.

2.71 Table 2.16 shows the overall project-level impacts generated as a result of REIF investment. To date, 43 jobs have been created, and a further 46 jobs have been safeguarded. There is an

⁴⁷ Scottish Enterprise (2015) *REIF Procedure Manual*. September 2015. Version 3.0.

identified supply chain value of just over £12 million. Just over 6,300 MWh have been generated, with over 2,000 Tonnes of CO₂ saved.

Table 2.16: Total investment to date actual impacts generated and expected impacts

Investment value	New gross jobs	Safeguarded gross jobs	Actual net GVA	Scottish-based suppliers (No.)	Scottish-based suppliers (Value £)	Generation (MWh)	Net CO ₂ Saved	Estimated 20-year community income
£52.3m	43	46	£4.28m	62	£17.5m	6,319	2,066	-
Expected impacts	New gross jobs	Safeguarded gross jobs	Expected net GVA	Scottish-based suppliers (No.)	Scottish-based suppliers (Value £)	Generation (MWh)	Net CO ₂ Saved	Estimated 20-year community income
	244	49	£128.8m	44	£34.3m	N/A	N/A	£53.3m

Source: REIF Monitoring and Evaluation Information

2.72 The impacts, excluding net GVA, presented in Table 2.16 are taken from the REIF Monitoring and Evaluation Framework (MEF). As agreed at the outset of this mid-term review, the primary research set out to capture additional project-level information, where it was available, and research tools were designed with this in mind. The agreed aim was that if the data gathered through the primary research with projects was out of line with the impact data provided through the MEF, it would be used to recast economic impacts; otherwise, MEF data would be used in the review.

2.73 Many projects provided data through the survey interviews but it did not vary in any material way from the data contained in the MEF. The new data confirmed the assumptions made by the REIF team on the economic impacts of projects. We can assume that this lack of variance reflects the accuracy of the monitoring data.

2.74 In terms of actual net GVA, an estimate based on turnover data is presented here. Direct net GVA of £4.28 million (as per Table 2.16) is estimated to date across all projects, with a further estimated £3.85 million of indirect GVA and £855,792 of induced GVA. This has been adjusted for additionality based on findings of the project survey, and also includes an adjustment for displacement. Discounting for leakage has not been considered here. Although turnover data from the surveys was not available for a number of projects, it is likely that this still presents a fairer reflection of impact from the projects. Because of numbers, job-based GVA estimates are particularly low: £1.47 million direct net GVA, £1.33 million indirect GVA and £294,750 induced GVA. These calculations do not include the 75 indirect jobs created by the Point & Sandwick project. Nonetheless, both calculations return modest actual net GVA figures, given that so many of the impacts are forecast to happen in the future. It should be noted that in either case, a degree of caution should be exercised in considering these estimates, given the limited range of employment and turnover GVA available.

2.75 It should be noted that whilst no further additionality adjustments have been made to the remaining figures above, the majority of projects considered the additionality of REIF investment to be very high – that in effect, the projects would not have happened at all without the intervention and investment of REIF.

2.76 With regard to the expected impacts, these constitute the majority of impacts from REIF investment. Even taking into account any likely optimism bias, these projections are invariably risky. This is even more so when the operational status and long-term nature of projects (long-term in that benefit realisation will necessarily be over a longer time frame than conventional business support activity) is considered. Further risk comes from the fact that the bigger investments are still not commercially viable or operational. Given this projected figures should be treated with caution.

2.77 However, as this is a mid-term review, greater actual impacts are to be expected at the end of the investment programme, and beyond.

Summary and conclusion

2.78 In establishing the fund, the Scottish Government made available a significant sum of money to invest in a key sector of the Scottish economy to exploit Scotland's competitive advantage in renewable energy. By targeting specific sub-sectors, REIF was intended to offer complementarity to existing structures and address the evident market failure in renewable energy investment.

2.79 Its stretching targets reflect the scale of ambition for Scotland's renewables sector. These have been acknowledged both internally and outwith the Fund as challenging, and it is arguable that they could perhaps at the time have been more realistic – reflecting the challenging conditions of the Marine renewable sector (wave in the Scotland, and the UK more widely, in particular). The lesson may be to set future targets that, whilst still being ambitious, are achievable.

2.80 The investment of £52.3 million in 28 projects to date is lower than the £103 million originally anticipated. The pattern of investment is also not in line with initial expectations, notably that of the majority of funding being allocated to a small number of major Marine projects. Unfortunately the Marine sector, and especially wave power, was not as mature as originally anticipated. There have also been high-profile 'failures' in the shape of Pelamis and Aquamarine.

2.81 However, REIF's performance to date can be seen as very positive, given market challenges, which is reflected to an extent in its comparable leverage ratios. Further, the expected income performance, both for REIF and specific income return for Community projects and associated contributions to inclusive growth, is to be welcomed. It is also the case that additionality is very high: without REIF few, if any of the projects would have become operational.

3 Marine and ‘Other’ REIF investments

Key point summary

- REIF’s role in building the marine sector and the impact that it has had through its investment and wider strategic support is viewed positively
- Wave energy’s immaturity, and the impact this has subsequently had on REIF investments, is acknowledged
- For tidal energy, REIF has helped to create the market, but much depends on the performance of the MeyGen project, which presents a substantial risk
- Project impacts from REIF investment to date are small in comparison to forecast impacts and benefits; this is invariably risky while projects are not yet commercial
- More could be done to maximise the downstream supply chain benefits
- REIF’s deal-making, investor facilitation and pro-activity in supporting marine sector developments should be commended

3.1 REIF has invested in 10 Marine and 3 ‘other’ projects to date. This chapter reviews the projects, their requirement for REIF investment, project impacts, the visibility and profile of REIF in the marine sector and the extent to which REIF has helped to develop the sector in Scotland. The information in this chapter is based on consultations with project beneficiaries, supplemented by REIF monitoring data.

3.2 Marine sector and ‘other’ investments have been covered in this chapter to differentiate them from community energy deals, although the marine sector projects are themselves quite separate from the ‘other’ project investments. Marine and ‘other’ investments are therefore discussed separately through the chapter.

Types of Marine and ‘Other’ investment

Marine sector project investments

3.3 Of the 12 marine sector investments, there has been a mix of wave and tidal investments. There is a differentiation to be made between investment in a project (for example the MeyGen project) and a technology developer (such as Nova).

3.4 **Wave** investments have proven difficult to develop and sustain, and, as chapter 2 indicates, a couple of high profile wave investments (Pelamis and Aquamarine with total REIF investment of £11.5 million) failed given the challenges of the new technologies and the readiness of the market. Considerable learning has already been gained from these projects, and some of the Intellectual Property (IP) is being taken forward through Wave Energy Scotland (WES), a subsidiary of HIE. These wave energy developers had already received significant public sector funding other than REIF and this current review does not report extensively on these two investments, though some consideration is given to the circumstances of the two projects in Appendix C. The REIF investment in Albatern Limited is also for a wave demonstrator. However, this is of a different nature (to

commercialise and scale up an array based Wave Energy Converter specifically for the aquaculture sector) and may be less risky than the projects that were attempting to generate power of a large scale from waves.

3.5 The other marine investments have been **tidal**. REIF investment into MeyGen Limited (and support to its owner Atlantis) has been the major project for REIF. This was the first tidal array project with total REIF investment of £15.6 million to date. In addition, support was provided to technology developer Atlantis, totalling £4 million. MeyGen has also had considerable other public sector support, for example grant support of £10 million from DECC.

3.6 The MeyGen project is a £52.6 million project that is constructing and deploying a tidal array in the Pentland Firth, consisting initially of four 1.5MW turbines (Phase 1a). The project is located in the Inner Sound of the Firth, the body of water that separates the north Scottish mainland from Stroma Island. MeyGen intends to deploy up to 398MW of offshore tidal stream turbines. Though still under construction, electricity generation is expected to start in Autumn 2016. By the end of Phase 1, it is expected that the array will consist of 86 turbines, with a phased approach allowing for monitoring to inform scale-up through Phase 2. By the end of Phase 2, Atlantis, MeyGen's parent company, intends to have phased out the need for further public sector investment in the project. Atlantis recently announced a considerable potential investment stream in each of its renewable energy vehicles (including MeyGen). Equitix, an infrastructure investor, will potentially invest a total of £100 million in different Atlantis projects in return for a 25% stake in each, including MeyGen. The total of Atlantis project infrastructure costs could rise to £500 million in the medium term, a significant investment in Scotland's marine renewable sector.

3.7 There have been other REIF investments in marine tidal developers, including Ocean Flow Energy Limited and a larger REIF investment into Scotrenewables Tidal Power Limited. These too are to finance pre-commercial, pre-demonstration projects. Scotrenewables, for example, has received £3 million in REIF investment over two tranches in 2014 and 2015 for the construction, launch and testing of a 2MW turbine (for testing at the European Marine Energy Centre, EMEC) to prove the commercial viability of the turbine.

3.8 The Ocean Flow investment is to deploy a tidal platform with an installed third party turbine and prove its operation. Here, the aim is to sell the platform to other turbine developers. First trials were on survivability over a winter season in an exposed site at Sanda Sounds. The site was developed by Ocean Flow and grid connected at 100kW.

3.9 Two more marine tidal investments are Nova Innovation Limited and Sustainable Marine Energy Limited ('SME'), the former a £3.6 million investment in the technology developer which included REIF investment of £700,000 and the latter a £7.3 million investment with £260,000 from REIF. Nova aims to create the world's first tidal array, fully installed and generating. The SME project was to support deployment of the first of their PLAT-O tidal platforms holding two third party turbines, using REIF as gap funding alongside WATERS 3⁴⁸ funding to complete the first installation and start designing a second platform holding four third party turbines.

3.10 Across the marine sector, the majority of investments made through REIF to date have been developing *companies* i.e. taking the company's technology to the next stage of development such as prototype testing. As previously highlighted in chapter 2, this was different to the situation envisaged at the outset of REIF and laid out in the PwC market assessment report. The initial market

⁴⁸ WATERS 3 is a collaborative venture between Scottish Enterprise, Scottish Government and Highlands and Islands Enterprise

assessment anticipated investing in around four major market ready marine projects that were expected to account for 60% of REIF's £100 million.

3.11 The lack of major investment-ready projects (as initially envisaged) became apparent quite quickly. To a large extent this related to the scale of the technological challenge in the marine sector, notably for wave power, and the scale of investment required to take projects to commercial readiness. The marine projects are typically supported by high net worth individuals, technology supply chain companies (for example. ABB and Shottel), specialist private sector investors or strategic investors as co-investors, rather than mainstream commercial/institutional investors, reflecting the higher risks in the sector. A significant exception is the MeyGen tidal project which, through Atlantis, has Alternative Investment Market (AIM) investors involved.

3.12 Chapters 5 and 6 explore future growth areas and potential priorities for REIF. However, it may well be that REIF does not continue to support earlier stage wave projects which may be better suited to WES, until the technology/projects in the wave sector are closer to commercial reality and the right commercial opportunities present themselves. WES has already taken on some of the IP from Pelamis, in itself a positive outcome from the earlier REIF investment in the project.

3.13 Amongst those not as close to the sector, there is often a blanket view of 'marine'. Yet wave and tidal projects/technologies are quite different, with much higher (technology) risks associated with wave, which, to date, have proved difficult to overcome. Given the stage of the marine sector more generally, including most tidal projects, REIF funding of company investment plans has been appropriate (and vital) for the sector. The point here is that the wave and tidal sectors are now effectively different sectors with tidal being investible, but where (large-scale) wave generally is not.

'Other' REIF project investments

3.14 'Other' project investments have been in 2-B Limited, for the 2-B Limited offshore wind project, in North Hoo Field Limited in Orkney and into Gaia-Wind Limited. 'Other' investments are important to REIF in terms of allowing flexibility in the types of project supported: that is projects that are not marine, community energy or District Heating. Marketing 'other' projects has, however, proved a little problematic given that this is not a specific sector.

The investment in 2-B Limited is to develop the first of a two-blade wind turbine demonstrator which has the potential to reduce costs for clean energy generators across Europe. The investments in Gaia Wind and North Hoo have been more straightforward, yet nonetheless important, with REIF funding being necessary to allow project implementation. The North Hoo project brings locally significant impacts to Shetland, as demonstrated in the case study below.

Case Study: North Hoo Field Ltd

Project operator: North Hoo Field Ltd

Project: North Hoo wind turbine

Location: North Hoo, Shetland

Type: Onshore wind

Generation capacity: 700 KW

Project overview: The wind turbine at North Hoo is 700 KW and powers a wood burning, drying and pelletising plant at Gremista, near Lerwick. North Hoo Field Ltd is a SPV that holds the project's assets, on behalf of North Fish Ltd, a HIE-account managed company. The project had originally been in discussions with the Co-operative Bank over investment, but REIF stepped in following the

Co-operative Bank's difficulties. Alongside private equity, REIF's £700,000 loan investment secured the project's development as North Hoo Field found attracting alternative investors difficult. Its experience was that investment in renewables for small schemes was unattractive, despite Shetland having the best wind resources in Europe.

Project benefits: The turbine to date has generated 1,777MWh of electricity, and saved 879 net Tonnes of CO₂. Turnover is expected to be in the region of £600,000 per annum. The turbine is also currently performing at 35% above expected operation. Additionally, the project brings compound environmental benefits. By powering a wood chip facility (biomass), the turbine is helping to supply renewable energy to Lerwick District Heating Scheme (LDHS), which is operated by Shetland Heat Energy and Power (SHEAP), part of Shetland Charitable Trust. The pellet facility also supplies biomass plants at community facilities at three sites in Shetland – Brae, Aith, and Yell, and will soon supply a facility in Whalsay.

Addressing investment challenges through REIF

3.15 For many involved in supporting the sector, the marine renewable energy market (with the exception of off-shore wind) remains one that requires further development. For the companies being supported through REIF, actual electricity- and revenue-generating projects may be a year or more away, when further market investment may be required (in some cases from REIF). The companies and technologies seeking financial support are not fully commercialised, so it is necessary for an investor such as REIF to take some of the risk.

3.16 REIF fills an investment gap in the marine sector, given the lack of private sector investors thereby helping to address this market failure. There are few institutions investing in this space (which includes the Green Investment Bank), so REIF has played an important role in the market. One consultee stated *"that if REIF had not existed [in this case in relation to the MeyGen project], then we [the public sector] would have had to create something like it"*.

3.17 This is certainly the view held by beneficiaries of REIF investment. As one put it, the marine energy sector is *"very challenging, making it difficult to secure finance from private investors, so additional finance is required to fill the gap, which REIF has been able to provide"*. Venture Capital funding is often viewed by businesses as being less than not or inappropriate given that Venture Capitalists are looking for shorter-term returns and exit, and commercial funders are viewed as having higher expectations of return. For one beneficiary, the fact that REIF has a strategic objective to help develop the Scottish economy (including its supply chain) was an additional benefit to having REIF as an investor.

3.18 For all those consulted in the Marine/Other sector, REIF investment was rated 5 out of 5 for its importance to the deal being done and the project proceeding (where 5 is very important), even if the beneficiary experience of the *process* has sometimes been variable. In many cases, REIF funding has been critical to the project proceeding *and* the process of engaging with REIF has been good. For others, the process has been regarded as a little more lengthy, although this was felt to be largely inevitable (see below).

3.19 A positive example is the case of Scotrenewables. The timescales that REIF turned around their investment decision was deemed good (at six months). In the second investment round in particular, attracting additional investors would have been very challenging. REIF initially looked at providing a loan guarantee based on the sale of the first turbine, but equity investment was considered

by all to be the best fit. REIF investment was rated 5 out of 5 in terms of importance to the project proceeding.

3.20 For some beneficiaries there had been a certain nervousness about taking the REIF investment, with some existing investors not wishing to use equity investment, partly for fear of reduced control as a result. However, even in these examples, there was an acknowledgement that REIF investment was necessary for the project to proceed, with the funding again rated 5 out of 5 for its importance. Again, positively, one said they could not have deployed their device without the REIF investment, with the matched funding also allowing it to complete a WATERS project.

3.21 In another example, the beneficiary found itself in the so-called investment "*valley of death*", that is at a stage not yet ready to attract interest from large investors or technology firms. Without the REIF investment "*we would have folded*" For another, the process was regarded as lengthy and difficult, although it is not clear what REIF could have done to improve this, and even here the REIF investment was deemed critical to the project proceeding, given little or no commercial interest in what was a relatively small-scale scheme. In this example, REIF finance was again rated 5 out of 5 for the importance of the investment to the project proceeding.

3.22 In the large MeyGen project, the Crown Estate was the lead partner, leading due diligence and working in partnership with the REIF team. Again, REIF investment has been absolutely critical to the project proceeding.

Visibility of the Fund in the Marine sector

3.23 Stakeholders, companies and investors in the marine sector (and other parts of the renewable sector that REIF invests in) are very aware of REIF and what it is able to offer⁴⁹. In the early days of the Fund, there were more enquiries, although not all of these were from renewable projects able to fit REIF criteria (a result of a lack of familiarity amongst enquirers as to what REIF was able to offer). Projects supported now are sourced from direct enquiries, the team sourcing projects through events and networks, and some referrals, including a small number from account managers. A number, such as Albatern, started as projects supported by other SIB Funds, in this case Scottish SEED funding⁵⁰, where equity investment was sought for the project.

3.24 As it became apparent that demand for REIF investment did not exist from marine sector companies in the way originally anticipated, there was recognition of the need to promote the Fund. The Head of REIF, in post six months after the Fund was launched, led on the development of a marketing strategy and championed the need to promote and sell REIF. This included raising awareness of the Fund outside of Scotland, including with the European Commission, the UK government and through international conferences (such as the Ocean Energy Conference in Canada). This raised the profile of REIF amongst the renewable sector generally, and amongst potential investors.

3.25 It is widely considered now that all who are active in the marine sector in Scotland know about REIF (and this includes strong awareness amongst those in Europe outside of Scotland). Those involved in the off-shore wind sector are also strongly aware of REIF, including developers. Beyond marine and off-shore wind, the visibility of the Fund may be lower (notably in relation to heat), although it should be acknowledged that heat projects are not eligible for REIF apart from District Heating

⁴⁹ REIF may be less well-known to businesses in the biomass, solar and large-scale onshore wind sectors, for example

⁵⁰ The Scottish SEED fund is now part of the Scottish Venture Capital (SVC) Fund

projects, where different funding options have been available and where REIF has since ceased actively to promote itself⁵¹.

3.26 At the UK level, REIF is regarded as reasonably visible in the marketplace. It is also viewed as highly visible at the Scotland level. Part of this reflects REIF's ability "*to do transactions that no-one else seemingly can*," including REIF's ability to navigate through the complex State Aid environment, unlike some other institutions. The high profile of REIF reflects the team's pro-activity and relationship-building and its use of networks and connections. An organisation can always be more visible of course, and one stakeholder considered that whilst REIF attendance of conferences and events was good, "*they could organise and lead more of these themselves*". However, in terms of raising awareness of the sector generally, it continues to be appropriate for REIF to undertake this activity alongside HIE and SE sector teams.

Support provided by REIF

Pre-deal

3.27 In terms of the Marine/Other sector, REIF investment *beneficiaries* do not cite significant pre-deal support from REIF (unlike the community energy project investees reviewed in chapter 4). The majority of pre-deal work undertaken by REIF is sourcing the deal and internal case-making work, which may not be visible or transparent to the recipient of REIF investment. Some of the internal work can be considerable and involve a wide range of SE/HIE staff as part of an Account Team (see chapter 5).

3.28 The role of REIF in bringing in other investors is seen as very good, particularly amongst stakeholders. The MeyGen deal was considered "*a real coup*" for the REIF team and Scotland, where the REIF team were instrumental in making the deal happen. The role of REIF in providing ongoing engagement with beneficiaries and investment partners is viewed extremely positively.

3.29 For beneficiaries, where a view has been expressed, there could be more pre-deal support from REIF. In one example, this included more involvement in technical due diligence to help support the investment case, given that there were other technology investors involved. However, this is beyond the scope of the REIF team's remit and a role which would conflict with the team's ability to assess the deal as an arm's length investor. Rather, such support would be best accessed through the SIB financial readiness team who are able to assist companies build their case for investment.

Post-deal

3.30 Post-deal, all REIF investments are portfolio managed by a REIF team member. For the Marine/Other sector, the larger, non-early stage investment beneficiaries will have an SE/HIE Account Manager who will be the key point of contact for the development of the business. For some, there is a view that this post-deal level of involvement in the project (and ensuring that impacts are realised) through the portfolio and account management processes could be strengthened. This is further explored in chapter 5.

3.31 There are a number of practical examples of REIF team engagement post-deal. In some cases, REIF are active observers at board level for the investee company. REIF "*have provided strategic support in terms of future partnerships and suppliers and other potential private investors*". In other examples, although REIF may not have a board presence, a REIF team member has been an

⁵¹ A decision was taken (at programme board level) to stop promoting this area as District Heating projects with renewable fuel sources did not work from a commercial perspective.

advisor facilitating further support from others in SE and other organisations. In all deals, SIB has the ability to appoint a non-Executive Director and has company board observer rights. Another beneficiary cited positive REIF support for help *“to access the supply chain, premises, input to policy makers and access to other grants and collaborative opportunities”*.

3.32 One stakeholder perspective is that the way in which REIF operates (and its interface between the public sector and investors) enables close relationships to be developed between investors, politicians, decision makers and investee companies. The REIF mind-set is seen as solution focused, and *“very hands on”*, not typical of all public sector support. An example cited was the active involvement in the sale of MCT (purchased from Siemens by Atlantis) as part of securing supply chain benefits in Scotland from the MeyGen project (see impacts below). For some, REIF’s mode of operation is viewed as a model for modern public sector investment.

Appraisal and application process

3.33 The appraisal and application process is considered quite lengthy, but most beneficiaries accepted that this was necessary. In some cases REIF is less onerous than other funding application processes: *“in comparison to WATERS, there were deadlines in the WATERS application and due diligence that there were not in the REIF application”*.

3.34 For some projects, the decision-making process is viewed as onerously slow. One company noted that the long timeframe for decision on the REIF investment (in contrast to the decision-making timescales of the commercial senior lender) put the business at risk of going into administration, and effectively could have ended the project. For another beneficiary, the pace of decision-making hampers an otherwise *“nimble, agile and effective”* investment team.

3.35 Other negative feedback was typically around legal issues: *“the legal side took too long and if there were any way of reducing this that would be better”* and *“REIF lawyers made lots of changes for existing investors which made it difficult to get the loan through”*. One stated that *“REIF changed terms (harder), nearly blowing private deal as a result. [This was] annoying as it should be [an] enabler”*. One business found the convertible loan route adopted particularly challenging, including the legal complexity. At the same time there was a general acceptance of (and resignation to) this situation (reflecting the commercial basis under which REIF operates), and in all cases REIF investment remained critical to the project progressing.

Project impacts

3.36 A wide range of positive impacts are cited in relation to the marine sector and other investments. In many cases, the REIF investment is supporting proving of the technology. There are a number of examples of this including the 2-B offshore wind development and the Albatern wave.net, as first demonstrations of the devices, and the REIF investment in Atlantis, which is proving the technology which is then being installed at MeyGen.

3.37 There is considerable interest in the MeyGen project. It will be the largest commercial demonstrator of tidal power generation with the first four turbines due to be operational by the Autumn of 2016. There has been considerable due diligence carried out, especially through the Crown Estate, and all are hopeful of a positive outcome. The project (at the time of reporting) is on track. The ‘spotlight’ is on MeyGen, as one interviewee said: *“it is relatively high risk but potentially a very great project”*. This has proved to be worthwhile in light of the recent Equitix agreement with Atlantis Resources.

3.38 Many projects are pre-revenue generation and project impacts are yet to be realised. For example, the Scotrenewables turbine is under construction so it is too early to assign impacts. However, it is clear there are already supply chain impacts that have occurred: the majority of design and legal work to date has been undertaken in Scotland, and half the construction activity (for example of kit and testing equipment) is through Scottish suppliers. However, little of the hardware is sourced from Scottish suppliers: most turbines and accompanying gearboxes are manufactured in Germany.

3.39 One of the smaller projects has performed at 35% above expected operation/cashflow to date. The project is generating cheaper electricity than forecast and achieving significant carbon reduction. Here too, the design and construction work has been undertaken by Scottish suppliers, although (again) this does not include the hardware. The company is achieving *“cheaper renewable energy driving production of biomass fuel, a compound renewable impact”*.

3.40 Some of the impacts relate to the successful leverage of other private and public funding. As a result of the REIF investment one company was in an overall better position and was *“recently awarded Horizon 2020 funding which will cover [R&D] costs for the next three years. This was indirectly secured as a result of REIF support”*.

3.41 A number of the projects have created jobs as a result of the REIF project proceeding. Some of these are quite significant. One has moved from 5 to 14 Full Time Equivalents (FTE) since the REIF funding was obtained, all of whom are attributable to REIF. The company is looking to increase the number of FTE jobs to 20, and this is almost entirely attributable (81%-100%) to the REIF investment.

3.42 Whilst a number of businesses have increased employment numbers (and a smaller number have increased turnover and revenues) as a result of the REIF project, in the main the really significant jobs and GVA impacts will occur in later years and are dependent on the commercialisation of demonstrators. Many softer benefits and impacts have already been achieved and are acknowledged, notably new skills in the company, increased capacity to develop renewable projects and product innovation. Some of the impacts are difficult to quantify yet are clearly important, including investor confidence. Competitive advantage is also an impact, with one project saying that the REIF investment has *“significantly impacted the competitive lead we have. Moves the company one step closer to generating at a larger scale”*.

Impacts to date

3.43 Table 3.1 displays the achieved impacts to date from the marine sector and other projects, as reported in REIF monitoring information. Where data has been obtained, these impacts to date have been verified through the primary research.

3.44 Just 15% (41) of the 274 actual and expected Full Time Equivalent (FTE) new jobs have been achieved to date. In all, 28 Scottish-based suppliers have been used to date for marine projects, 61% of that forecast.

Table 3.1: Actual impacts to date from REIF investment (Marine and Other projects)

Type	New Jobs (FTE)	Safeguarded jobs (FTE)	Direct net GVA	Scottish-based suppliers (number)	Scottish-based suppliers (value)
Marine	34	28	£1.470m	28	£12.1m
Other	7	18	£0.259m	0	£0
<i>All</i>	<i>41</i>	<i>46</i>	<i>£1.729m</i>	<i>28</i>	<i>£12.1m</i>

Source: REIF Monitoring and Evaluation Information

3.45 As in Table 2.16, an estimate of GVA based on turnover data is presented here. For Marine projects, direct net GVA of £1.470 million is estimated, with a further estimated £1.330 million of indirect GVA and £0.294 million induced GVA: £3.094 million in total. For Other projects, there is an estimated £0.259 million of direct GVA, £0.233 million of indirect GVA, and £0.051 million of induced GVA: a total of £0.543 million to date. As highlighted above, due to the proportion of impacts predicted to take place in future, these impacts are modest in light of investment levels. However, due to the limited availability of data, a degree of caution should be exercised in considering these estimates.

Anticipated impacts

3.46 A total of 233 further FTE jobs were expected in the future as recorded in the monitoring data. Primary research indicates that the majority of these forecast impacts are expected to be realised, although nine of the jobs are profiled for later than originally forecast, and 25 are currently not expected to be achieved. Overall, additionality is high: above 80%. Few, if any, of the current or forecast project impacts would be achievable without the REIF investment. Over two thirds of surveyed beneficiaries stated that additionality levels for future turnover and employment benefits were between 90% and 100% (fully additional).

Table 3.2: Expected impacts from REIF investment (Marine and Other projects)

Type	New Jobs (FTE)	Safeguarded jobs (FTE)	Expected Direct net GVA ⁵²	Scottish-based suppliers (number)	Scottish-based suppliers (value)
Marine	158	28	£42.4m	18	£6.3m
Other	75	18	£27.4m	1	£3.5m
<i>All</i>	<i>233</i>	<i>46</i>	<i>£69.8m</i>	<i>19</i>	<i>£9.8m</i>

Source: REIF Monitoring and Evaluation Information

Carbon reduction impacts (to date)

3.47 In terms of renewable energy performance, marine projects have generated 111MWh of renewable energy, saving an estimated net 54.4 tonnes of CO₂, to the end of March 2016 (Table 3.3)⁵³.

⁵² Net GVA taken from REIF Monitoring & Evaluation Framework, as detailed in Ch.2. No actual net GVA recorded to date (end of March 2016)

⁵³ This is based on approximately 2 MWh of renewable energy equating to 1 tonne of CO₂ saved.

Table 3.3: Generation and CO₂ impacts from Marine projects, to March 2016

	Impact
MWh generated	111.0
Net CO₂ saved (Tonnes)	54.4

Source: REIF Monitoring and Evaluation Information

3.48 To the end of March 2016, 'other' renewable projects have generated 1,777MWh of renewable energy, which has saved an estimated net 878.5 tonnes of CO₂ (Table 3.4). This is from one operational project (North Hoo), and is considered to be above target.

Table 3.4: Generation and CO₂ impacts from Other projects, to March 2016

	Impact
MWh generated	1,777.0
Net CO₂ saved (Tonnes)	878.5

Source: REIF Monitoring and Evaluation Information

Maximising downstream supply chain benefits

3.49 Although there are considerable job and GVA impacts that may accrue to the supported businesses themselves as a result of the REIF projects, the big 'prizes' for the Scottish economy are the supply chain benefits arising from the projects and the development of the sector/market. Given this, there are considerable attempts (across SE/HIE) to secure downstream supply chain benefits, and considering the likely impact on the supply chain is part of REIF's investment criteria. Capturing supply chain benefits is built into the Monitoring and Evaluation Framework for REIF and into investment approvals.

3.50 With respect to MeyGen, there are a number of Scottish-based potential Tier 1 suppliers (companies that can supply original equipment manufacturers directly) which would expand the manufacturing base in Scotland. Atlantis has acquired MCT from Siemens, and may relocate assembly operations from Bristol to Nigg (Caithness). This is good news for Scotland and may, in turn, encourage other Scottish suppliers. In addition Atlantis has recently purchased the 10MW Sound of Islay project from Scottish Power Renewables. Atlantis has also moved its headquarters to Edinburgh. Several Scottish-based companies are contracted to the MeyGen project in particular – including Xodus Group, James Fisher, Mackay Energy and Orkney Research Centre for Archaeology.

3.51 These developments do not guarantee success for Atlantis and the MeyGen project, but they are signals of confidence and Scotland market-making. There are a range of further potential supply chain developments: for example sub-sea cables. These too require R&D (and in the case of MeyGen these are at the testing stage) and SE are looking to provide appropriate support in the right form at the right stage. In addition, there is some potential for the project to mitigate (in some small way) the impact of the decline of the oil and gas sector (although the scale of the oil and gas sector is currently far greater than the marine renewable sector). In light of the recent investment, MeyGen – and ultimately other projects, over time – will require a skilled workforce, and oil and gas sector workforce skills are considered highly transferable to the marine renewables sector (although there may always be strong competition from the oil and gas sector, which is typically more highly paid).

3.52 The approach to securing and maximising supply chain impacts could, however, be stronger. REIF do not have formal/contractual responsibility to ensure supply chain impacts are realised

(although the portfolio manager reviews overall company performance) and it is the Account Team who needs to make this happen. This is revisited in chapter 5. Some grant mechanisms have a greater requirement for expenditure to be in Scotland (for example, WATERS funding stipulated that 60% of spend had to be in Scotland). Again, as at 3.39 above, beneficiaries are citing hardware as the most difficult thing to source from Scottish companies.

Monitoring and evaluation

3.53 As with project appraisal processes, the level of monitoring information required of REIF beneficiaries (in their view) is as expected, and not too onerous. For most, REIF simply requires information which is produced anyway for their own Board or other partners.

REIF's role in developing the Marine sector

3.54 There is a widespread view that REIF has played a role in supporting the development of the marine sector, although it is also recognised that many projects will need further funding, and in most cases it would not be appropriate for this to be from REIF. Again, MeyGen is a good example. Although this is a nascent industry and the market is being created, it is anticipated that if the technology demonstration of four turbines work, then the next stage should be attractive to commercial investors.

3.55 Some stakeholders say that the relatively low levels of red tape/bureaucracy have allowed REIF to assist the sector. REIF adopts a professional and commercial approach and can *"make things happen"*. The Fund is also State Aid compliant which is necessary, and the REIF team's ability to help projects negotiate through these processes affords REIF added credibility in the eyes of stakeholders. Stakeholders also value REIF's ability to implement long-term policy objectives and what is seen as an appropriate attitude to risk, being not too risk averse. There are high risks and long term paybacks, yet REIF is very well placed to support wave and tidal technologies.

3.56 REIF is viewed as absolutely critical for the sector. It is investing in higher risk projects and future energy technologies. REIF leverages in private sector investment to high risk projects and paves the way for additional private sector investment once construction has commenced – as the Atlantis Equitix deal demonstrates.

3.57 In many respects, the market is not yet made, and there remains fragile investor confidence. REIF will not be able to create the market alone, yet stakeholders believe *"they are doing the right things, but they are not the only piece of the jigsaw"* and that REIF *"have kept the sector alive"*.

3.58 For others, REIF have been *"creative in putting the right people together for deals"*. The flexible approach is deemed right for the sector as is *"the philosophy to focus on skills and the asset transfer from one sector to another"*. REIF supporting companies that make use of EMEC facilities has been cited as a good example. Creativity in the approach to getting deals put together and done, and the routes taken to solve market failure are hailed as particularly positive. Many feel that REIF makes *"a powerful statement"* about Scotland's renewable industry, and how it is supported. Without it, *"the renewable sector wouldn't really work; there would be no success...certainly in the marine sector"*.

3.59 Others agree that REIF's actions are *"driving forward the marine sector, keeping it going in Scotland"*. It is stimulating capacity in Scotland and the supply chain across a wide range of industries. There has been mainstreaming evident in the sector, with MeyGen first using prototype

turbines in the first large scale commercial demonstration. Nigg Energy Park is also supporting turbine development, and has considerable potential in this regard.

3.60 Many project beneficiaries agree, one stating REIF has *“brought increased confidence [to the market] where [REIF] offers flexibility in [supporting] technology and projects and companies at different levels of development”*. It is seen as a sizeable fund, able to get large projects *“off the ground”*, which has a positive impact on the sector in providing further evidence of viability. To another, REIF *“feels supportive, unlike other investors in the sector”*.

3.61 The exception to the positive market making in the sector is around smaller scale projects and investments. For those, there remains little commercial interest, despite REIF investment in some of these project deals. There appears to remain modest/little commercial interest in smaller value deals, where the gap may be less than £1 million, reflecting the relatively high transaction costs in relation to return.

Summary and conclusion

3.62 There is widespread positivity about the role of the REIF in the marine sector and the potential impacts that may arise as a result. There is an acknowledgement that the wave sector was not ready for REIF investment at the time (or now, with niche market exceptions) but that with tidal projects REIF has helped to create the market. Clearly a lot still rests on the success of the MeyGen project and its ability to be fully commercially viable.

3.63 There have been certain direct job and, to a lesser extent, GVA benefits to date arising from REIF investment, as companies are growing whilst they develop and test the technologies. The impacts to date are modest in comparison to the anticipated or forecast benefits/impacts, which in turn will be small in comparison with the full economic and environmental impacts should projects such as MeyGen be successful. There is more that can and should be done to ensure these supply chain impacts are realised for Scotland, (see chapter 5). However, in terms of doing deals, bringing investors together, and proactively supporting and developing the Marine sector, then REIF should be praised.

4 Community energy projects

Key point summary

- The support provided by REIF to community projects is extremely valuable, facilitating community engagement and helping to support wider inclusive growth
- The REIF team's commitment, energy and ability to make things happen is well-regarded by senior lenders, developers, communities and other stakeholders
- There remains a lack of appetite amongst investors to fund community projects despite the maturity of the technology being deployed; in many cases. In many cases REIF investment is necessary for projects to happen
- Though in future communities may self-fund or increasingly enter into shared ownership schemes, some form of REIF-type investment is still likely to be required
- Impacts from REIF investment are beginning to be realised, with funds beginning to flow to community trusts to support a wide range of projects
- in the future, the REIF approach could extend beyond electricity to other local network energy solutions, which may continue to generate major positive local impacts

4.1 REIF has invested in 15 community energy projects. These comprise a greater number of REIF investments than marine/other sector projects, although they are almost all smaller in scale. Nonetheless, for many communities benefiting from REIF investment, the project is a significant local investment, and some are of considerable scale in their own right.

4.2 The rationale for investment in community energy projects contrasts with Marine renewable projects in that the technology involved is largely mature, tested, and its performance and reliability is proven. However, there remains a lack of investment, with only a relatively small number of investors, such as Triodos, active in the community energy sector. A funding gap also exists, with commercial lenders unwilling to take on the full exposure for any single project, and thus requiring a junior lender for any investment. REIF's role here is therefore very much one of making projects happen.

4.3 A further justification for REIF investment is to address the apparent inequality in community energy projects. The remote nature of projects and the communities involved necessarily means that there are higher development costs. By investing in such projects, REIF is helping to facilitate more inclusive growth for Scotland's rural communities.

4.4 This chapter reviews the community energy projects; their associated impacts and benefits; the role of the REIF team in providing support; project requirements for REIF investment; project impacts; the visibility and profile of REIF in the community renewables sector; the extent to which REIF has helped to develop the community renewables sector in Scotland; the role of REIF investment in developing the market; and project investment and additionality.

Community project overview

4.5 The 15 community energy projects are at different stages, depending on their nature, scale and time of REIF approval. The majority of the projects are on-shore wind, although there are also hydro schemes. The majority are operational (13 out of the 15). Unlike the marine sector, where REIF investment is a combination of debt and equity, REIF investment in community energy projects is all debt finance.

4.6 Table 4.1 shows the REIF investments made in chronological order and the current status of each project.

Table 4.1: Overview of Community Energy Projects

Project	REIF Investment	Progress
Onshore Wind Energy		
Gigha Green Power Ltd	£96,000	Operational & generating electricity
Barra & Vatersay Wind Energy Ltd	£550,000	Operational & generating electricity
Fintry Renewable Energy Enterprise	£615,000	Operational & generating electricity
Berwickshire Community Renewables LLP	£1,750,000	Under construction
Galson Energy Ltd	£400,000	Operational & generating electricity
Tighnabruaich District Community Renewables Ltd	£170,000	Operational & generating electricity
Islay Energy Community Benefit Society	£735,000	Operational & generating electricity
Point & Sandwick Power Ltd	£2,250,000	Operational & generating electricity
Stewart Energy Ltd (Lesmahagow)	£1,630,000	Operational & generating electricity
Tarbert & Skipness Renewables Ltd	£170,000	Operational & generating electricity
Hydro-schemes		
Green Energy Mull Ltd	£413,000	Operational & generating electricity
Callander Community Hydro Limited	£311,000	Operational & generating electricity
Sunart Community Renewables Ltd	£60,000	Operational & generating electricity
Kilfinan Community Forest Limited	£113,173	Operational & generating electricity
Broadland Energy (Donich) Ltd	£733,669	Under construction

Source: REIF Monitoring and Evaluation Framework

Types of Community project

4.7 Community energy projects can be disaggregated into four broad funding categories as follows:

- Lead (senior debt) bank lender (mainly Santander and Triodos) with REIF as the sub-ordinate or junior debt lender to bridge the funding gap, since most senior commercial lenders will not take on more than 85% of total loan exposure;

- b) Social/charitable banks as co-funders (and often others), where REIF in certain cases has taken the lead;
- c) Projects involving community shares; and
- d) Projects involving community buy-in to a private sector project through shared ownership.

4.8 Projects with lead bank lender: in many ways, senior commercial bank lenders are new to the community energy project market. The Co-op Bank was the principal lender for community projects before 2012-2013. However since the Co-op Bank's difficulties, it has not been involved in the market. For both the commercial banks and REIF, there has been a certain learning curve in relation to community projects given their newness to the market, particularly in terms of understanding how communities operate. Where banks are the senior lender, REIF follows the bank's due diligence to keep down costs for the communities

4.9 An example is the Point and Sandwick Deal on the Isle of Lewis, Outer Hebrides. The Co-op Bank was initially the lead, prior to its withdrawal and REIF stepped in to cover the community due diligence costs. This was a £15 million deal (with REIF investment of £2.25 million) where the community needed funding quickly as it could have lost its grid connection slot. Santander became involved and REIF was able to release funding quickly, provided Santander stayed part of the deal. All parties stayed and the deal reached financial close. The best case prediction is that the project will raise £30 million for the community over the project's lifetime through energy sales. Since then, the community has gone on to develop a wide range of community projects including energy efficiency. Another example is the £1.75 million REIF investment as part of the Berwickshire community deal. With a Housing Association as lead, the project development process has benefited from the Housing Association's strong history of project management and expertise.

4.10 Projects with social/charitable banks: these have typically been smaller in scale, for example those undertaken with Social Investment Scotland (SIS)⁵⁴. REIF and SIS have developed a joint approach to due diligence and legal work. REIF co-invests with SIS, with both working together where neither funder leads. In some deals there has also been some high street bank involvement (via a RBS subsidiary). One example is the Sunart Community Renewables deal, which was the third hydro-electricity deal done, where the REIF team were on a steep learning curve in terms of putting together the deal. Here, REIF acted as the lead lender and managed the deal process.

4.11 Community share offer deals: these can be attractive to communities given (what had been) a beneficial tax regime. Community share offers raise finance from the community as part of the deal. One example is Islay (see also below). Here, commercial funders would not look at the deal because the funding gap was less than £1 million and so too small for private sector funders. REIF acted as the senior debt lender. The project was not fully ready for commercial lenders to invest in and so REIF supported the community in appointing appropriate advisers, including a project manager, to get the project to an investor ready position where it was able to put in place REIF funding alongside the share offer. In this example it was clear that the community was not used to completing funding deals (as is typically the case) and in all the process took four months from REIF application to the drawdown of the first funding tranche.

4.12 Shared Ownership schemes: these are potentially a big driver in the market in the future, given Scottish Government's aspirations to see developers undertake more shared ownership development with communities. This is especially the case in the light of the changes in Feed-in Tariff

⁵⁴ SIS is the largest not-for-profit provider of business loans to the third sector in Scotland as well as being a social enterprise and registered charity. It supports third sector organisations that have the capability to make sustainable social impacts.

(FIT) subsidies⁵⁵ which will potentially result in less community owned projects progressing as a result of lower revenues from generated electricity. Developers will not be able to propose projects in the same way as they have done in the past, with the industry being asked to voluntarily enter into shared ownership schemes or risk legislation being introduced to compel them. One example is the REIF investment of £1.63 million in Stewart Energy Limited. In general, Shared Ownership schemes have the potential to attract much greater levels of developer interest to allow communities to invest in projects of scale. Historically they have been where local farmers or small developers have been involved, so have typically been smaller projects.

4.13 There are a wide range of nuanced variations under each broad deal type, depending on the respective local situation and project history. For example, in Islay (a community share deal) REIF provided £735,000 of loan investment, whilst the community raised its £535,000 community share issue. Once community funding was raised, REIF met the balance. The hydro project on Mull received REIF investment of £413,000, alongside £500,000 from the Charity Bank, but also has funding through a community share issue (of £445,000) as part of the project (a requirement of the Charity Bank), and a small amount of CARES⁵⁶ funding (in addition to CARES feasibility funding).

4.14 All communities have a Special Purpose Vehicle (SPV)⁵⁷ established to develop and operate the REIF renewables project, where the income generated must go to the Community Trust or independent charity to disburse profits for the community (this being a condition of REIF investment). Some communities had the SPV established already. Examples of SPVs are Gigha Green Power Limited (for Isles of Gigha Heritage Trust) and Tighnabruaich District Community Renewables Limited (TDCRL) (for the Tighnabruaich Development Trust).

Project impacts and benefits

4.15 Renewable energy projects provide benefits to local communities in a number of ways. Some of these are standard practice for the renewables industry; some are accentuated for particular community projects. REIF has helped to secure benefits through several of these mechanisms (e.g. Galson and Barra), which include:

- Community benefit payments – Scottish Government best practice is at least £5,000 per MW per year;
- Use of local sub-contractors to build the project;
- Use of local sub-contractors to operate and maintain the project over its 20 year life;
- Ownership of part of the project (and the associated dividends) by a local community group who may use the income for local projects; and
- Ownership of part of the project (and the associated dividends) by local people.

4.16 If they are not already doing so, REIF projects are expected to generate income for communities. The way in which income is flowing, or will flow, to the community varies depending on

⁵⁵ FIT are payments from the energy supplier for electricity generation. The old FIT scheme closed on 14 January 2016 and was replaced by the new scheme which opened on the 8 February 2016, with different (lower) tariff rates and rules (e.g. limits on the number of installations). Applications before 14th January are considered under the old scheme and those with an existing FIT plan are not affected by the changes.

⁵⁶ See chapter 2

⁵⁷ A Special Purpose Vehicle (SPV) is a legal entity (usually a limited company or sometimes a limited partnership) created to fulfil narrow, specific or temporary objectives.

the project. In Gigha, where the project funded a cable for a new wind turbine, the energy generated is sold with revenues flowing back into the community to support community projects.

4.17 Whilst best practice is for a community payment of £5,000 per MW per year, this may only be adopted as a default by larger community projects. The majority of community projects offer other benefits which often lead to larger benefits. The CARES Community Renewables Register provides detailed information on the benefits from projects, as well as showing that the average payments are closer to £6,000 per MW per year.⁵⁸

4.18 Some of the benefits that have been realised from community projects shown in the Register include purchasing a thermal imaging camera, funding a community car club (including an electric vehicle), funding a co-operative community cycle club, installing a community kitchen classroom and building a new community hall.

4.19 For Gigha, the anticipated income of £80,000-£100,000 per year is contributing to the ongoing running of the Trust (Isle of Gigha Heritage Trust) and for refurbishing houses. When the island was bought by the community, the housing was in a derelict state and so income generated is used to make the properties wind and watertight, provide insulation and install heating systems. The community have now refurbished all but eight of the 30 properties (although not exclusively through income from the REIF project). There are other projects being supported too, including refurbishing the hotel, shop and providing self-catering accommodation.

4.20 In some cases the income accruing to communities is expected to be considerable. The £30 million over 25 years that may flow to the communities of Lewis as part of the Point and Sandwick deal is an example of this. This will bring a wide range of benefits across the communities covered by the Trust. Disbursing income will be in accordance with the Trust's constitution and there are already commitments to the following, each of which can have a significant impact:

- A hospice to benefit all the islands, not just Lewis;
- Future funding of a manager's post; and
- A crofters' tree planting initiative (£300,000).

4.21 The Berwickshire deal may bring as much as £20m to the Housing Association (and CES) over 20 years (from the £10-£12 million initial total project value), in addition to the project engaging five Scottish-based suppliers to a total of £6.7 million. On Barra £1 million may accrue to the community over 10 years whilst the Stewart deal is forecast to generate very significant income.⁵⁹

4.22 Further, the stakes that the communities of Tarbert/Skipness and Tighnabruaich in Argyll each have in the Allt Dearg onshore wind project are set to generate £800,000 over 20 years, again significant sums for what are small communities. For REIF, the funding of £170,000 for each community is a relatively small project, but now the two Trusts can plan ahead knowing there is a future income stream. In Tighnabruaich, early projects to be led by the Trust include the Village Hall, the children's playpark and a part-time administrator.

4.23 In all cases, the REIF team are asking for annual community plan reviews, with both the reviews and Community Investment Plans themselves a mandatory criteria for investment through

⁵⁸ <http://www.localenergyscotland.org/view-the-register/#summary>

⁵⁹ The project is expected to generate £10,000 per Megawatt, with 25% of the dividend transferred to the Community Development Trust. Turnover is anticipated to be in the region of £1.4m per annum

REIF (as well as through other mechanisms such as CARES), and this is found to be helpful to communities. As a community investment plan must be in place prior to a deal being completed (to guide the disbursement of any accrued income) this is helping to increase impacts at the local level.

4.24 Communities are clearly an entity around which economic activity can be generated. The Mull hydro project has performed better than expected. It started operating in June 2015 and the wet weather since then (at the time of reporting) has meant the project is doing better than forecast. The strong support from the community for the scheme was predicated on the basis that the profits made are gifted to a standalone independent charity for Mull and Iona for island projects. The charitable trust has a governing group which invites applications from the community in line with a written constitution. Local paid posts now support community volunteers.

4.25 For the Tarbert and Skipness community, the income from the REIF project is supporting Trust capacity and the implementation of their 2015 Community Plan. Projects in the plan include a community hub and meeting space/centre, a financial pot for small projects, the restoration of long distance paths (to Ardrishaig 15 miles away), and aspirations to provide affordable family housing and further community energy projects. It was a requirement of REIF investment to update the Community Plan and the REIF team were supportive of the community in achieving this.

4.26 Some communities with a REIF supported project are receiving income as a result of the project when there were no local income generating projects previously, including the communities of Galson, Barra and Vatersay. They are receiving income of £500,000 to £1 million per

4.27 There are a range of benefits arising for communities as a result of the income generated, and all these are in addition to the impacts arising from the generation of power. These include support or extra spend on local employers helping to grow the local workforce, as well as supporting project and development officers and Development Trust administration.

Stewart Energy Ltd

Project: Stewart Energy Marshill wind farm

Location: South Lanarkshire

Type: Onshore wind

Generation capacity: 3.9MW

Project overview: The Marshill wind farm at Lesmahagow in South Lanarkshire is a three-turbine, 3.9 MW array. Stewart Energy aimed to develop the project to secure sustainable energy and long-term income generation on a locally-owned wind farm. Having originally secured a CARES loan for pre-planning work (the Lesmahagow Development Trust (LDT), the local community organisation, also securing a grant for legal and financial advice) to secure the necessary planning permissions and with Santander in place as the senior lender, Stewart Energy entered discussions with REIF as a number of other lenders were not interested in investing. REIF involvement not only secured the project's development, it secured the offered share for LDT. REIF also assisted with grid connection negotiations with Scottish Power, and in releasing funds at financial close alongside the senior lender.

Project benefits: In addition to any dividend payment, the project will pay a community benefit of £10,000 per MWh to LDT. The LDT owns 25% of the wind turbine, and as part of their MW payment and dividend, has secured an annual income of around £250,000 for the next 20 years. Without REIF's investment, this would not have been possible – the alternative scenario being a likely dividend payment of just £10-15,000. In future, the project is also expected to secure a project manager post for LDT to oversee delivery of the Community Plan, which is currently under development. Stewart

Energy also has longer term ambitions to expand the wind farm. Additionally, the project has enabled farm diversification.

4.28 Relatively small sums for communities can have a very big impact, and this is significant given that some of the income generated is considerable. Given that many of the beneficiary communities are remote and in fragile areas, REIF investment is supporting the Economic Strategy objective for inclusive growth. By increasing income and spend in local communities, REIF investment is helping to address inequality. The Stewart Energy Ltd investment detailed in the case study above is an example of the levels of income accruing to local communities.

4.29 Local impacts extend to local contractors and the local supply chain, as shown in Tables 4.2 and 4.3, with community projects having engaged with, or expecting to engage with, 59 Scottish-based suppliers, to a total value of just under £30 million. There is also ongoing employment for maintenance and repairs for projects, including maintenance backup which in one case involves those locally trained and employed by the turbine company.

4.30 Project impacts identified in the monitoring data are set out in Tables 4.2 and 4.3 below, with a full project breakdown of actual and expected impacts given at Appendices F and G. Evidence from REIF monitoring information suggests that the 15 community energy projects have, or expect to, directly create 13 new jobs, in addition to safeguarding three, and will generate £59 million of direct GVA for the local economy (although this is not net *additional* GVA, i.e. a proportion of this would have been achieved anyway in the absence of REIF investment). To date, two jobs have been directly created and others are expected in the near future. This is supported by the primary research. Further impacts are expected, and these may increase when the full effects of the income accruing to communities are considered (for example, additional local employment from local projects supported by the income generated by the project). The jobs and GVA created will increase considerably when indirect impacts are taken into account. The Point and Sandwick project is currently forecasting 75 indirect jobs; a large number of jobs in the context of the local area. Overall, additionality is high, above 80%, with few project impacts being possible without the REIF investment, as with the Marine and Other projects.

Table 4.2: Actual impacts to date from REIF investment (Community Projects)

Type	New gross jobs ⁶⁰	Safeguarded gross jobs	Actual Direct GVA ⁶¹	Scottish-based suppliers (number)	Scottish-based suppliers (value)
Community	2	0	£2.550m	34	£5.4m

Source: REIF Monitoring and Evaluation Information

4.31 As previously, an estimate of actual net GVA achieved to date based on turnover data is presented here. For Community renewable projects, direct GVA of £2.550 million is estimated, with a further estimated £2.290 million of indirect GVA and £0.509 million of induced GVA: a total of £5.349 million. As highlighted above, due to the proportion of impacts predicted to occur in future, these calculations return modest figures given investment to date. However, future direct GVA of £59 million

⁶⁰ Though the number of jobs created to date, and also expected (in Table 4.3) seems small given the scale of investment, it should be noted that there are a number of indirect jobs anticipated as a result of REIF investment, in partner/community organisations. Project respondents were able to anecdotally refer to these jobs, for example possible project officer roles for management of community fund disbursement, but were unable to quantify or say with any certainty whether these jobs would happen or not. As such, these have not been recorded.

⁶¹ Net GVA taken from REIF Monitoring & Evaluation Framework, as detailed in Ch.2. No actual net GVA recorded to date (end of March 2016)

is forecast. With the addition of indirect (potentially £52 million) and induced (£12 million) this could result in £123 million over twenty years. Because of the limited availability of data, a degree of caution should, however, be exercised in considering these estimates.

Table 4.3: Expected impacts from REIF investment (Community Projects)

Type	New gross jobs	Safeguarded gross jobs	Expected Direct GVA	Scottish-based suppliers (number)	Scottish-based suppliers (value)
Community	11	3	£59m	25	£24.5m

Source: REIF Monitoring and Evaluation Information

4.32 As highlighted, the projects are anticipated to generate significant income for communities, particularly following REIF loan repayments. Based on estimates from REIF monitoring and evaluation data, and from data gained through primary research with community projects, somewhere in the region of £53 million of income may be generated over a 20-year period. Of this, £30 million (56%) is expected to be generated by the Point and Sandwich project alone. Taking into account expected REIF income of just over £11 million for community projects⁶², this suggests an income generated ratio of around 6.4:1 on the £10 million or so invested to date in community projects, which is a good return.

Carbon reduction impacts

4.33 Community projects have generated the majority of renewable energy facilitated by REIF-investments given that most are operational unlike the marine projects. By the end of March 2016, the 13 operational projects had generated 4,431MWh of renewable energy (Table 4.4). This has saved an estimated net 1,333 tonnes of CO₂. Of the energy generated, almost 2,500MWh (56%) was generated by the Gigha Green Energy project, for the Gigha community.

Table 4.4: Generation, CO₂ and income impacts from Community projects, to March 2016

	Impact
MWh generated	4,431.4
Net CO ₂ saved (Tonnes)	1,133.0
Estimated 20-year community income	£53,343,000

Source: REIF Monitoring and Evaluation Information and primary research

REIF Team support for applicants

4.34 The REIF team provides considerable support to community groups and REIF plays a critical role prior to the deal being completed through early stage help to the community. This support can be wide-ranging, from liaising with industry about grid connection to working with the appointed project manager and Community Trust on issues related to contractors. REIF clearly wishes to facilitate deals and make them work and the support it provides to communities is widely praised. The REIF team undertake due diligence, or follows that of the senior lender, depending on the type of deal.

Community perspective

4.35 Communities have, overall, been extremely positive about the contribution and support available from REIF. The team has been valued by communities for its clarity, supportiveness and

⁶² Based on REIF monitoring and evaluation data

ability to manage the process. Some communities have been “*pleasantly surprised*” by REIF and the process (for example. Tighnabruaich), where the Trust “*has been happy the project has come in under budget and become operational relatively painlessly*”. The Tighnabruaich Trust found REIF sympathetic to the way communities work, were “*very impressed*” and found REIF “*very constructive*”.

4.36 For communities such as Tighnabruaich there were considerable benefits to having REIF funding in the early stages of the project. The strong performance of the development means they are looking to repay the interest on the REIF debt finance earlier than originally anticipated.

4.37 For some communities (for example. Mull) REIF investment was not originally seen as a good fit. The Trust went to commercial lenders but found they were not willing to work with the community on a project of that (small) scale. The community had “*no track record*” and no collateral or security. Accordingly, commercial lenders would have been very expensive, reducing the profitability of the scheme.

4.38 Within the Tarbert and Skipness communities, the level of prior knowledge and understanding of what was required to develop and implement an energy project was very low indeed, and REIF support was therefore regarded as invaluable. When it was proposed to them, the offer of a 6.25% stake in the Ardrishaig wind project seemed to the community to be a very good opportunity. The Tarbert and Skipness Trust had the benefit of a parallel process happening in nearby Tighnabruaich and so they were able to learn from, and follow, the expertise being applied there. For the Trust, REIF was the obvious route, although the interest rates on the debt finance did appear expensive to them. Again however, the community found REIF “*very helpful and community-minded*”.

4.39 REIF have often been found to be helpful to communities in the distribution of profits and income. For Tarbert and Skipness this helped to define a more transparent and fair approach to project awards. REIF also helped match Trust repayments to the Fund to the income being generated by the project, helping the Trust’s cashflow which was seen as very helpful.

4.40 Not all communities have valued the support provided by REIF, and at least one was critical of what was felt to be excessive risk aversion and the time taken by REIF to make decisions. This relates largely to earlier deals and/or some occasions where this was the first, or one of the first, deals of its kind undertaken by REIF. One community, using REIF for a relatively small scale hydro scheme, was unsatisfied by the support from REIF, including the need for the Community Trust to supply what was felt to be excessive supporting information, a perceived lack of technical expertise within REIF at that time, as well as poor consultation support through CARES. The community claimed that, in this case, it took 18 months to raise the funding for what was a fairly straightforward scheme. It should be noted though that this is only one of the 15 community projects supported. These critical views are the exception. It is also the case that in some instances REIF felt that delays were a result of projects not being investor ready

Evolution of REIF Team support

4.41 There was clearly a need for the REIF team to respond and react to the change from the original anticipated position, where community energy projects were expected to be neatly developed into commodities (i.e. developed in a more formulaic manner). This was when the Co-op Bank was still active in the sector and when banks were expected to provide 85% of the funding and REIF the final 15%. It quickly became clear this was not going to be the case when the Co-op Bank pulled out in 2012, as discussed earlier.

4.42 The result was a steep learning curve for the REIF team. There was (and remains) a considerable amount of work required to develop a community energy deal where bespoke solutions are required and it was unlikely that this was fully recognised at the outset by SIB, SE, HIE or Scottish Government, until the deals actually started to flow.

4.43 Indeed, REIF has stepped into the role of acting as a facilitator: *“making the deal happen”*. No one else provides this support, although Local Energy Scotland (LES), through CARES, provides important and complementary support to communities (see below). LES sees REIF as the *‘friendly bank’* which can give LES a *“heads up”* on potential project issues early on. The REIF team are regarded as having good levels of commercial acumen, striving to make sure the community *“gets a fair deal”*.

4.44 The private sector also thinks the REIF team has matured and that there is now a lot of knowledge and experience in the team: *“they are making deals more quickly”*. Developers are now talking to the commercial banks and REIF at the same time and there is regular dialogue between REIF and active senior lenders. The private sector see the REIF team now as quick decision makers and their early stage approval process is very helpful for the banks. Both the banks and REIF tend to go into a project at the same time so share the same levels of risk.

4.45 REIF is generally seen (from all sides) as providing complete community engagement, transparency and a full team approach. For senior lenders, they are the *“go-to lenders”* as junior partners, offering the best, most flexible terms. REIF offers a degree of freedom and flexibility and its ability and willingness to work with communities (some of whom can be difficult to work with given their lack of experience and capacity) has been welcomed.

Relationship with Local Energy Scotland (LES)

4.46 As mentioned in chapter 2, LES manage the Scottish Government’s Community and Renewable Energy Scheme (CARES). This programme provides community groups with a range of support, including:

- Guidance (such as Handbooks, Toolkits, Finance models and Standard templates for key documents);
- Grants to funding initial feasibility work;
- Loans to undertake the main project development stage (things such as full feasibility, planning); and
- Lists of approved project managers and technical, financial and legal advisors.

4.47 There is an interface between the REIF team and LES community support. LES runs a framework contract through CARES (largely of legal and financial advisors and project management consultants) who provide specific support to communities. The LES framework consultant can also act as project manager role with respect to REIF projects. Consultants are selected and appointed by communities and LES.

4.48 Communities frequently acknowledge that they do not have the expertise to develop and finalise project deals. CARES’ financial support is available to them, although this largely has a pre-planning focus and is not always sufficient for helping communities move towards and complete a funding deal which is the type of support required. Often, communities have reported that the LES consultants do not have right skillset to develop or conclude deals or the expertise to provide good

quality advice. Communities have not always been entirely satisfied with the LES consultants, with some communities saying that the consultants themselves have acknowledged the weak service they have provided.

4.49 Although improving, there still appears to be a gap (that the REIF team is filling) in supporting communities in the pre-deal phase. From the LES perspective, REIF are now coming into deals a bit earlier than they used to as they are now more aware of (and conversant with) the community sector. It is clear that some communities require considerable hand-holding. LES consider that the REIF team are committed and “*go the extra mile*”. There is increasingly good integration between LES and REIF who regularly communicate at an operational level, for example with monthly calls to review the pipeline of potential projects. The LES framework of consultants has improved but there is still a case for more corporate finance and legal experts and strong project managers.

4.50 For some stakeholders there is also a question over where the demarcation of roles between REIF and LES lies, and at what stage REIF can, and should, provide support (or where REIF has to because there is a support gap). One view is that LES, at times, is required to put in more money “*to get projects over the line*” (post consent loans) but that this is outside of LES’ remit. It is argued by some that REIF should provide support to communities earlier. However, it may be that this view ignores the fact that REIF’s role is to invest in projects that are commercially viable rather than to provide project development support to get projects to this stage.

4.51 It is also considered that REIF is good at coming in just before the senior lender, and that it can help prepare or shape the community body to be investment ready. Wherever the exact demarcation line is drawn, it is clear the REIF support for communities has been valued considerably in almost all instances and that strong project management support for communities is required.

Community energy market development

4.52 As mentioned earlier (Paragraph 4.8), there was a requirement for REIF to increase its efforts to connect with investors after the Co-op Bank pulled out of the market in 2012/2013. There was an active and urgent need to engage with the private sector.

4.53 In providing the critical support to enable deals to happen, REIF feels it has been helping to create the community energy market, although senior lenders do not agree as strongly that this is the case (considering that they, as senior lenders, have fulfilled this role). Nonetheless, REIF seeks to influence senior lenders, for example by reducing or waiving arrangement fees for communities with the hope that senior lenders will then follow suit (as with the Stewart Energy deal) and influence pricing. It is claimed that senior lenders now look at community projects differently to commercial projects, and there is evidence that this is the case with both REIF and commercial banks developing their approaches to community energy projects over time.

4.54 What is clear is that the REIF team has developed good relationships with the private sector. The private sector does not typically wish to be negotiating directly with communities. It does, however, wish to know in general terms how the investment is benefiting local communities (and wants to see incomes spent by communities in their area).

4.55 In many ways, there remains market failure in relation to community energy projects and the private sector is unlikely to invest without REIF’s involvement. The REIF terms are not always ideal for communities (the debt finance is perceived to be expensive), yet many find they cannot get better terms than REIF provides (for example Tighnabruaich) and there is little evidence of projects failing to progress due to REIF’s terms. There remains a lack of appetite for investment in many projects

(especially smaller ones), not just from the commercial banks but also the charitable ones. In Mull, REIF's and Charity Bank's interest rates for the deal were 7-8% which was considered to be expensive by the community. There was a perception held by the community that for private sector business with a track record, the rates would have been much lower, but there is no evidence to suggest that this is the case. Given this, REIF is clearly filling a market gap.

4.56 A number of the communities in receipt of REIF investment have been surprised (and disappointed) by the scale of legal fees associated with the deal (for example, Mull, Kilfinan, Tarbert and Skipness), even after Heads of Terms have been agreed. However, these are not REIF costs (REIF pays all its own legal fees and any diligence costs and does not charge communities fees). Some had to go to public tender for the legal support to take a project to financial close, and found this a very difficult and expensive process. Whilst this is not directly related to the making of the community energy market, it is an important (and expensive) consideration for communities.

4.57 There are clearly others involved in the market, especially SIS (see Paragraph 4.10) which is viewed by some as being quite similar to REIF although with different types of expertise (and where SIS is arguably not as close to the private sector in the way that REIF usefully is). The Green Investment Bank (which is about to be privatised) is not regarded as active in the marketplace in the same sense as REIF (see Appendix B), and is not interested in community projects as they are too small in scale.

4.58 REIF clearly has good relationships with senior lenders and "*knows what they expect*". REIF also know suppliers and the supply chain and vice versa. This is an important intervention in the marketplace. Some communities, now that they have undertaken a project, would seek to avoid loan finance altogether and to raise more, or all, funding through community shares. REIF has played a critical role here in helping to upskill the community to undertake projects and raise more of the finance without the need for support; not necessarily addressing a market failure in the strictest sense, but nevertheless helping to address inclusive growth and strengthening communities.

The importance of the investment and additionality

4.59 A number of communities are not convinced they would have been able to complete projects without REIF. They are not sure that the finance would have been available at rates they could afford, or that the project could have been completed without REIF's expertise (and in some cases REIF's commitment to making the deal happen). Some communities "*would have turned elsewhere*" but are not sure that the banks would have been prepared to invest without REIF, again indicating that REIF is filling a market gap.

4.60 Overall, and in the majority (and perhaps all) cases, the REIF funding makes the deals happen, bridging the gap to ensure the financial deal can be completed and helping deals happen more quickly and with better returns for the community. Without REIF, many financial institutions would still not get involved with community projects, given the additional work involved, and there continues to be a need for funding for the higher risk project elements. REIF investment helps projects reach the de-risked stage.

4.61 In the Tarbert and Skipness and Tighnabruaich community energy projects, the 6.25% share of the project held by each community was a way to enable the developer to involve the communities. The communities could not easily have raised the money to obtain their 6.25% share, particularly in the time, without REIF investment (the REIF finance helped secure the share).

4.62 Having REIF as part of the project can also help give confidence to communities. On Mull, there was an initial target of £330,000 to be raised through community shares, which was exceeded by more than £100,000. This enabled the company established to develop the project to have some working capital, which has since been very helpful.

4.63 The REIF intervention is increasing the monies flowing to communities: in some cases significantly. In one example, there was a project with a £6 million net profit attached to it, and REIF support helped the community take a 20% stake through a commercial investment, rather than accept the original developer's offer through a community benefit payment. The result is that the community received £1.6 million (far more than would have come through a community benefit arrangement). REIF helped structure the deal and encourage the developer to give up more as part of the project.

4.64 The initial idea (from the PwC report) that community deals could become a commodity or a product offered to communities (i.e. carried out in a more formulaic, lower transaction cost way) has proved (so far) to be wrong. One key success for REIF is that 3-4 years ago commercial funding for community renewable projects was not typically available. REIF has given commercial funders a level of comfort and security to enter this market, with REIF helping to address this market failure.

4.65 Overall, REIF is seen as a good 'enabler' of projects, bringing in other financiers, and building confidence in the project/deal, mainly by being able to *"talk the language of financiers and communities"*. One stakeholder thought that without REIF, only 20% of projects would have got financing, or would have taken much longer to start. This is borne out by the primary research with those responsible for community projects, where additionality was felt to be close to 100%.

4.66 REIF *"has made many projects reality"*. The senior lenders too believe REIF has had high impact, that they are a very good enabler, and that they improve project level confidence. REIF post-funding support is also well regarded, for example for the Berwickshire HA deal in relation to turbine payments. REIF were able to step in, pay turbine deposits in advance and ensure that the money flowed to the community straight away.

Future projects

4.67 Some communities are planning future projects, although not all are expecting to use REIF. One community wishes to get involved in wholesale generation— providing power direct to a local business which will be cheaper for the business and generate better returns for the community.

4.68 Another project, the 400kW hydro scheme at Garmony on Mull, is seeking to develop new green energy projects, although they may try to avoid loan finance in the future (and raise all or most money through community shares). For Mull, there are constraints imposed by grid capacity on the mainland and so they are looking to a local, island-based solution to demonstrate a technical solution (using funding from the Local Energy Challenge Fund and SSE). This would be about generating only the energy they consume locally. In the future, projects such as these may be ones (or ones like them, especially for heat projects) that REIF may consider investing in as part of a broader approach (see chapter 5), but only where a funding gap/market failure exists.

Summary and conclusion

4.69 The REIF team is clearly providing valuable support to communities and its expertise and understanding has developed as the Fund has evolved. The team is well regarded by communities, the private sector and other stakeholders for its commitment, energy and ability to make things happen.

4.70 The REIF investment is also necessary in most cases for projects to happen. There remains a lack of appetite amongst other investors to cover the whole project costs, and there remains an important element of de-risking for the private sector through REIF's involvement that allows deals to proceed. More communities may look to raise monies themselves in the future, and shared ownership schemes are likely to be more commonplace as developers willingly, or reluctantly, enter these agreements. Despite this, there remains a likelihood that some form of REIF type investment will be required.

4.71 The impacts of REIF project investments are beginning to be realised in communities, where very significant sums of money may flow through Trusts to support a multitude of community projects and investments, supporting communities and facilitating inclusive growth. The REIF approach could be extended beyond electricity to other local network energy solutions, which may continue to generate major positive local impacts.

5 Stakeholder and market perceptions

Key point summary

Positive features of REIF

- The views from stakeholders and those active in the market are that there are many positive features of REIF, include the advantage of it being a pan-Scotland fund with strong SE-HIE integration, and one which offers good levels of flexibility and a 'can do' approach.
- REIF is well regarded by the private sector, cited as the junior lender of choice for community energy project debt finance.
- REIF occupies an important and unique place in marketplace, able to adopt a whole-project investment approach which includes development and construction.
- REIF is well regarded by policy makers at UK and EC levels, being felt to have the right mix of projects and an appropriate attitude to risk, one where REIF funds the market gap thereby helping to complete deals.
- The Account Team approach, with REIF working with other parts of SE and with HIE is a good one that delivers benefits above and beyond the funding itself.
- The annual Community Investment Plan reviews, mandatory for community energy projects receiving REIF investment, bring added value in terms of the community's ability to manage and disburse monies received. This is felt to maximise wider social, environmental and economic impact

Challenges and opportunities

- The marine tidal sector remains a market in development and much depends on the outcomes of this round of investment in identifying whether the technology is proven.
- The changes to financial incentives for community energy projects can be both positive and negative for REIF: future projects will have lower income from incentives, thus efficiency and viability becomes more important. There is an opportunity for REIF to align with the developments of the new Government Energy Strategy where there will be an increased emphasis on a systems approach to energy, and on heat, power, transport and demand reduction.
- REIF, with strong market and investor understanding, is in a good position to respond to opportunities including energy from waste and heat recovery, grid connection and supply, and energy storage as part of whole energy systems, rather than just generation.
- These are *additional* opportunities for REIF, over and above further investment propositions in the marine and community energy sectors.

Introduction

5.1 This chapter reviews stakeholder and market perceptions of REIF, including the positive features of REIF, its integration with SE, HIE and Scottish Government agendas, the place it occupies in relation to other funds and renewable energy sector support, and further comments on the ability of REIF to build markets. The future constraints and challenges for REIF, and ways for REIF to increase impact and operational processes, are then outlined. Future potential growth areas and opportunities for REIF are also considered.

Positive REIF features

A Pan-Scotland fund

5.2 A pan-Scotland REIF is widely regarded as advantageous and positive. There is a good working relationship between SE and HIE with respect to the Fund, and more than 60% of projects are in the Highlands and Islands area. The fact that REIF exists is seen as very good for the sector and Scotland's drive for renewable energy. The MeyGen deal is evidence of a good pan-Scotland approach, with REIF working with other parts of SE and HIE (as well as the Crown Estate, Scottish Government and DECC). HIE and REIF worked *"to create a stimulating environment, matching elements in right way to create a funding package"*. Atlantis is account managed by SE, given the location of its headquarters in Edinburgh, whilst HIE is also extensively involved given the MeyGen project's location in the Highlands and Islands. The approach has been very joined up.

An Account Team approach

5.3 There is an Account Team approach for larger Marine projects, and this is regarded as a positive feature of REIF, although one that could be enhanced. An Account Team approach brings together different parts of SE and HIE (For example commercial, sector and, innovation teams) to support the company or organisation as a team, not just the designated Account Manager. REIF Investment Managers are part of the Account Team post-deal. Where the Account Team approach may need some refining is in relation to supply chain benefits as there is a view from some stakeholders that post-deal support could be strengthened to secure greater supply chain benefits. Monitoring of impact is split between the REIF team (for contracted supply chain benefits) and the rest of the Account Team (for example. the MeyGen supply chain is managed through the SE sector team). Portfolio management (which can include ensuring contractual commitments are met) can be time-consuming for REIF Investment Managers, and arguably detracts from sourcing or doing deals. There can be some blurring of responsibility for driving supply chain impacts (also below) that could usefully be addressed

A flexible fund

5.4 REIF is widely regarded as a flexible Fund in terms of the range and diversity of projects it can support, the forms of investment (equity and loans) and the way it operates (in terms of integration with other SE functions and with HIE). The inclusion of the Other category of projects is seen as beneficial in allowing REIF to become involved in innovative projects that do not easily fit into the other project categories. As Chapter 3 shows, beneficiaries in the Marine sector, in particular, have welcomed REIF's flexibility to deal-making and investment. The private sector also regards REIF's flexibility positively.

Relationship with investment community

5.5 The closeness of REIF to the investment community is positive for the renewables sector. This includes an ability in the REIF team to source alternative investors where required. There is a good relationship between REIF and senior lenders for Community projects. As chapter 4 illustrated, REIF is very well known in the market, it is enabling projects to proceed, so positively impacting on market confidence and it improves accessibility to funding. For the senior lenders, if REIF is involved it gives the project or development “*strength in the eyes of the bank*”. REIF is seen as “*the best of the junior lenders*” with the team’s renewable energy market and sector knowledge cited as the key differentiator.

How REIF compares to other funds and sector support mechanisms

5.6 In reviewing available funding options for renewable energy within the UK, and more widely in Europe, it is clear that REIF occupies a unique position in the renewables investment marketplace. Investment through the Fund offers benefits not necessarily available by other means and, in many ways, REIF is at the forefront of renewable investment in Scotland. Further details of complementary funding sources can be found in Appendix B.

5.7 One of REIF’s key differentiators is that it takes a whole-project investment approach, rather than the component or technology focus that is evident in other funding streams: for example, **Innovate UK** or **Horizon 2020** which are largely concerned with research and innovation. This is driven by REIF’s priority to invest in the deployment and operation of arrays in the case of marine technologies and sizeable energy projects that have a grid connection with regard to communities. In addition REIF’s range of investments is broader (with the exception of the European Investment BANK (EIB) which, due to its scale, is able to invest across the renewables and energy efficiency spectrum) giving REIF a degree of flexibility in comparison to investments made by a number of other UK-based bodies.

5.8 In Marine REIF has invested in both projects and companies/technology developers. Other funding is generally targeted at feasibility studies and pre-commercial deployment. For example, **DECC’s** Offshore Wind Component Technologies Development and Demonstration scheme is to demonstrate component technologies for >5MW offshore wind turbines. As Chapter 3 highlights, REIF’s visibility in the marine sector is very good and, through its approach, its position is unique.

5.9 In the Community sector, REIF provided junior debt finance to projects. There are a number of options for commercial finance in competition to REIF however none provides gap funding in the way that REIF is able to. In some instances REIF investment constitutes the whole of non-community investment (such as for the Fintry project) thereby helping to maximise community returns.

5.10 It is arguable that REIF’s remit plays to Scotland’s strengths whilst its focus on real commercial investment opportunities has addressed the market failure of investor confidence. REIF is therefore considered to be a market leader. Its approach differs from that of other public sector funders and programme approaches, which focus on technological market failure. REIF’s appetite for risk also contrasts with other funders, and this is part of its strategy to encourage investor confidence.

5.11 That is not to say that there are no learning points for REIF from other forms of support. For example, the REIF team may wish to explore the potential for factoring in an economic cost of carbon into appraisals. At present, potential CO₂ savings are monitored, with savings counting towards SE’s carbon savings target which is expressed in tonnes and is not monetised (and REIF investment accounts for around a third of SE savings overall), and its approach to capturing savings is regarded

as exemplary. However, the EIB through its renewables investment, and through its renewables- and energy efficiency-specific instruments such as ELENA⁶³ and EEEF⁶⁴, factors an economic cost of carbon into its appraisals. This enables the EIB to produce an adjusted economic and financial rate of return that reflects an environmental value.

Integration with SE, HIE and the Scottish Government

With other parts of SE and HIE

5.12 REIF has close links to other complementary parts of SE, in particular the Sector and Account Teams. The REIF team is aware of the wider SE offering and how this can support projects (and also reasonably aware of the HIE offer). A number of those consulted saw REIF as being well integrated with other parts of SE and HIE.

5.13 For the other parts of SE and for HIE, REIF is *“the first port of call”* for renewable sector investment where there is a funding gap. REIF is also regarded as a good tool for SDI in terms of promoting the sector outside of Scotland and seen as complementing other support mechanisms. The REIF team’s relationship with SE and HIE has built up over time. There were fewer links with HIE Account Managers initially but this has improved as a result of such initiatives as joint training sessions. The relationship, however, could be stronger still, through more outreach and other mechanisms (e.g. webinars).

5.14 There could also be greater information-sharing between the REIF team and others as deals reach financial close. After strong initial engagement, the REIF team can appear more insular as the deal reaches approval stages. Arrangements and processes that continue to involve more of those engaged at the outset of the deal-making process would be beneficial, particularly for projects in the H&I, given that HIE is not part of the formal SE/SIB approval processes.

Scottish Government

5.15 There is a good fit between REIF and Scottish Government priorities, notably in relation to carbon reduction. In relation to community energy projects, REIF is also contributing directly to the **inclusive growth** agenda; one of the four Is of the Government’s Economic Strategy and central to the priority of addressing inequality in Scotland as well as competitiveness. REIF enables new incomes to be generated in remote and fragile communities. In relation to **carbon reduction**, the timing is right for REIF to evolve in line with the emerging Energy Strategy for Scotland and the requirements of the Climate Change Act (see later in Chapter 5). The Energy Strategy is due later in 2016, which is expected to move away from a focus on electricity supply (where REIF has been active) to a more systems-based approach to energy use (heat, power, transport) and energy demand reduction. There is potential for REIF to play strongly to this agenda.

Role of the Sector Team

5.16 The SE Low Carbon sector team is positively engaged with REIF, for example with representation on its Programme Board. The team helped with developing the cases for the MeyGen and 2-B investments, for example, and the sector team works with, and as part of, Account Teams. This relationship is important for REIF who are not (or at least were not initially) renewable experts.

⁶³ European Local Energy Assistance (ELENA) facility was originally set up by the European Commission and EIB through the Intelligent Energy Europe (IEE) programme to help local and regional authorities make investments in energy efficiency and renewable energy.

⁶⁴ The European Energy Efficiency Fund (EEEF) is an innovative public-private partnership dedicated to mitigating climate change through energy efficiency measures and the use of renewable energy in the member states of the European Union.

The REIF team's expertise has certainly developed over time but the role of the SE (and HIE) sector teams are important for bringing a more rounded approach which utilises the available sector knowledge.

Building the market and influence

Influencing EU approaches

5.17 A number of consulted stakeholders say the activities of REIF have not gone unnoticed in the European Commission (EC), where there is a desire to invest in ocean projects but there has been no appropriate mechanism for doing so. Commentators say that the EIB would perhaps regard the types of projects that REIF support as too risky for them, with the EC finding it difficult to identify commercial investable projects (even with greater levels of funding, including the 'Juncker Plan'⁶⁵).

5.18 The EC became interested in REIF after the first MeyGen deal close in the Autumn of 2014. That deal is now often highlighted as an example of what can be achieved, showing it is possible to do deals in the ocean energy sector and the example features in Ocean Energy Forum reports. REIF therefore is seen in Europe as *"the gold standard"*: an example of what can be done and of an approach others should and could adopt. If the REIF approach was more widely adopted in Europe, it is argued that there would be more co-investment in the sector. Many think that there is an 'open door' in the EC for investing and channelling resources through REIF and rolling REIF out across Europe.

5.19 Taken down a certain route, REIF could manage such a Fund on a European scale (although this seems unlikely given the challenges of achieving this) or European resources could be ring-fenced for renewables co-investment. REIF could be used as a way for EIB or the European Investment Fund to invest in ocean energy, although there would need to be active and intensive dialogue and negotiation to develop this approach.

Attitude to risk

5.20 REIF's positive attitude to risk sets REIF apart from other funds, one that enables it to fill a market gap. Most interviewees see REIF as a good portfolio mix of sectors, investment profile and small and large deals. It is also generally considered inevitable that there is a possibility that some deals may fail given the stage and nature of projects supported. This demonstrates that REIF is helping support projects and technology developers where others are not prepared to invest without sharing the risk, thereby partially overcoming a market failure and providing a clear rationale for intervention.

5.21 Particularly in the marine sector, REIF is regarded as showing leadership. However, some interviewees believe REIF could be even more ambitious and seek greater leverage of private sector funding well *before* the deals are done, although this view does not recognise the role that the SIB financial readiness team plays in seeking to achieve this. It was felt that, although there was an onus on the companies themselves to line up other investors, REIF could be more proactive in encouraging them to do this,

5.22 Over time, some of the REIF type activity and deals are likely to be supported through SIB's mainstream investment funds. This is as it should be as the markets mature. Some of this could start to happen where technologies are proven and investors are more convinced of returns. Communities

⁶⁵ Investment Plan for Europe: European Fund for Strategic Investments, which is designed to revive investment in strategic projects around Europe, targeting projects with higher social and economic value through investment of up to €315 billion.

are likely to continue to want to develop renewable projects even with less favourable tariffs (and this fits with the Energy Strategy for Scotland). If this is to be investment, rather than grants, then a vehicle such as REIF is required in the way it is now: that is one which covers construction finance (rather than CARES which is development funding). The need for REIF is even greater when it is considered that deals in the future are likely to be more complex and bespoke as there is a need to find new incomes as the FIT reduces.

5.23 Although there are some stakeholder criticisms of REIF's attitude to risk, the majority believe REIF to be more entrepreneurial than the alternative funds. Whether REIF has actually adopted the right approach (for example with MeyGen) remains to be seen. However, no other support mechanism or financier is able to demonstrate the same agility or range of options as REIF.

Current and future constraints and challenges

Marine

5.24 One of the challenges in the marine sector is that there is not a strong stream of projects coming forward for REIF funding, in part as many are a long way from commercialisation. The results from the current round of projects will provide much needed market insight into the level of risk and performance of the latest technologies. REIF and other investors need this insight in order to inform decisions on the next stages of marine sector funding.

5.25 Overall, most interviewees believe the levels of investment made by REIF have been about right, with sufficient public money to meet the market funding gap. The REIF team *"has struck the right balance"*, given the challenging state of the market. There remain fragile market conditions in terms of investor confidence, with technologies still to be proven.

Community projects

5.26 The time taken to develop community energy projects means there needs to be certainty in relation to the future availability of funds for investment. For example, the REIF team may be in discussion with communities about early stage/pre-planning support for 2017/2018 projects. The REIF team are therefore *now* considering the risk and balance for the next financial year.

5.27 Given that the Renewable Obligation Certificates (ROCs) start to fall away (along with CfD changes) and the FITs change, this means the REIF team are seeing an increase in enquiries now and there is a rush to get deals done before the subsidy regime changes. A balance must always be struck for REIF between risk and return and projects are likely to become more risky given changes to tariffs (see also Power Purchase Agreements later in the chapter).

5.28 An ongoing challenge (and market, failure with respect to information availability) remains communities' awareness of investors and investment markets. This requires signposting for communities (and for lenders). Lack of awareness leads to lack of trust in some communities, and confidence in others. Communities need to be organised and lined up to access REIF, which is usually a CARES' team role, but knowledge and expertise can be stretched. REIF has already been praised for its pro-activity and community engagement and the REIF team can continue to provide soft advice, (plus further support from SE and HIE on community investor readiness).

Level of funds for investment

5.29 There are limited funds available for further REIF investment in relation to the potential demand for deals. The REIF team have identified three community deals they currently wish to

progress, together worth £10 million (and these alone represent a large proportion of the budget for next year of £14 million). This would leave little further scope for more investment whilst pipeline projects for marine and other could also absorb £10 million for follow-on investment. This will require REIF to manage expectations in the marketplace (now that momentum has been generated) whilst capturing the right potential new deals.

5.30 Until recently, REIF has been operating with a degree of uncertainty with regard to 2016/2017 and future funding and there remains a risk that a deal could be developed that could not subsequently be delivered, with the potential for reputational damage. Others, such as HIE, have said the situation means they are unsure how hard to promote the Fund, which is not ideal. More generally, there continues to be a requirement for the REIF team to manage expectations of what the Fund can and will do: REIF is gap funding, yet there can still be a sense of entitlement in particular amongst smaller companies that they will receive investment.

5.31 Overall, the fact that REIF had £103 million to invest at the outset has been a great advantage. This is a significant investment sum and one that makes businesses and communities take notice. Some argue that it is not funding that is a limiting factor, but the size of the renewables market. REIF is currently limited to renewables when it could be looking at other sectors with new technology that could be applied to the renewables sector.

Grid capacity and availability

5.32 A further issue/constraint has been availability of a grid connection at a time and cost that is acceptable to the renewable energy project. The availability of a suitable connection is very location and project specific. The situation is also influenced by other generation projects in the locality which are also seeking connections. The use of energy storage on the generation site may reduce these issues but adds a capital cost to the project.

Fund management and governance

5.33 An important (but resolvable) issue has been one of governance and conflict of roles between the Scottish Government and SE (and SIB). REIF is a SE board-approved programme subject to full project lifecycle reviews and rules, though its funding comes from the Electricity division of SG. From an SIB perspective, whilst there are many positive features of REIF, it is time consuming and resource intensive to manage overall due to the separate funding source. SE Senior Directors say they spend significantly (and disproportionately) more time on REIF than on other parts of SE activity. Some of the additional time has been caused by mid-year changes to funding. This can cause problems when REIF has made legally committing funding offers with money being released against the attainment of commercial milestones. However, the REIF Programme Board (which has representation from SG, SE and SIB) is the forum for resolving governance issues and progress is being made to do this.

Increasing impact

Marine

5.34 Although there are strong ambitions to develop the supply chain related to REIF approved projects, in some cases there have been very practical (and frustrating) barriers to achieving this. Some companies have struggled to identify suppliers in Scotland. Many of these constraints relate to insufficient infrastructure: for example large enough premises for fabrication, cranes of sufficient size, or doors wide enough to ship turbines. However, a key problem is the overall lack of suppliers in Scotland for much of the required hardware as recognised through both consultations and project

survey interviews. Where they do exist, Scottish suppliers can be expensive and not competitive. The (SE) National Renewable Infrastructure Fund⁶⁶ has been suggested as a means to help resolve this e.g. funding for ports infrastructure.

5.35 Organisations that REIF invest in continue to find it hard to use local suppliers (especially hardware for the reasons above) which reduces the potential economic impact on Scotland. The Supply Chain and Infrastructure sub-team at SE are looking at the supply chain for renewables to assess whether there are really gaps or if it is 'urban myth'. Reported gaps are in availability, capacity and price (and the evidence from this review is that this is indeed true for hardware, which accounts for the majority of spend).

5.36 Some of the issues relate back to who is responsible for driving supply chain benefits. REIF is typically more concerned with economic returns from the investment (RoI) over the project timescale. REIF will, for example, represent the project at investor meetings. Some supply chain impacts can be written in to the Terms and Conditions of the deal by REIF which can exert a degree of influence (for example that the investee has a Business Plan and that it stipulates they will use Scottish suppliers wherever possible, though such stipulation cannot be included in legal contracts as it is contrary to EU law).

5.37 The most appropriate way to drive impacts in the supply chain is likely to be through the Account Team, including REIF/SIB, the Account Manager, maybe the R&D team, the Sector team and potentially others. This should be in place quickly (even pre-deal) and it would seem useful if there is clear lead for driving impacts (the Account Manager). Where there are wide discussions pre-deal (for example REIF in dialogue with the sector team and others) this wider team can be put in place quickly post-deal. When the approval paper is being developed there is always the economist, sector team, REIF, and the commercial team involved, and as such there is a full team approach to the application. So an equal team approach to post-approval generation of downstream impact should also apply.

Community

5.38 The review has already commented on the ability of community energy projects to deliver locally important impacts. Community benefits are realised through community investment plans to drive benefits. However, some believe REIF could actually do more to advertise and celebrate the benefits of projects, to further raise awareness with policy makers. This has been a common comment in relation to improving the impact of REIF for communities: more evangelising, more message spreading and more case studies. There could be collaborative "*shouting*" about successes with the CARES team.

5.39 Allied to this, despite positive feedback, some would like to see more outreach from REIF, which would be useful to improve visibility. One private sector lender considered REIF as poorly visible when compared to CARES, "*more REIF team attendance [at events] and self-promotion would be good*".

Appraisal and approval processes

5.40 Overall, processes are considered appropriately rigorous. There are strong appraisal processes and REIF are "*pushing at the boundaries*" of approval. Private sector lenders can be critical citing "*additional layers*", (for example diligence) that are seen as causing unnecessary legal and technical costs yet add little value. However, this is probably an overreaction. At times approval

⁶⁶ <http://www.scottish-enterprise.com/services/develop-new-products-and-services/nrif/overview>

can take longer as projects are not investor ready. REIF is also likely to be criticised if it does not undertake diligence given that it is spending public money. .

5.41 There is potential for REIF to operate through 'calls for projects'. Other finance programmes (often grant-based) operate this way to manage demand. However demand management is not the central issue for REIF, although the approach can also be used to stimulate demand (where calls relate to specific interest areas).

Monitoring and evaluation

5.42 A monitoring and evaluation framework (MEF) was established at the outset of REIF. As Chapter 2 outlines this covers a wide range of outputs and impacts and is fit for purpose. One comment was that there appears little consideration of loan repayments in other parts of SE when analysing REIF data, with the benefits of the income accruing to SE/SIB as a result of REIF not being taken account of when appraisals are undertaken. Over time, increasing income could come back to REIF through loan repayments whilst the equity investments have the potential to return significant sums. However, it has to be recognised that such returns are not guaranteed. It is also the case that this argument is undermined to some extent by the two failures to date.

5.43 Nevertheless, this factor needs greater consideration (and value) at the approval stage and in subsequent analysis. In addition, the income coming back to REIF should at least in some way be taken into consideration as part of the argument for SE for continuing to support the Fund. As a loan not a grant, the net outlay is necessarily lower, and effective demonstration of this income generation coupled, to market correction through REIF, could help prove the value of loan mechanisms over grant schemes in certain business support activity.

Overall Value for Money

5.44 When forecast impacts are considered, REIF represents considerable value for money, even allowing for the high profile and costly failures.

Gross impacts

5.45 As detailed in Chapter 2, the £52 million invested through REIF is expected to generate and safeguard 366 gross jobs and net GVA of £129 million. The vast majority of these impacts are yet to be realised. Should they be realised, this equates to a little over £140,000 per gross job. This is relatively high, even allowing for that fact that a number of these will be higher value added jobs (for example. in R&D).

5.46 However, it is also worth noting that these 366 jobs are those expected **directly** in the supported projects; and so these do not include the jobs which may arise in the supply chain. As discussed earlier in the chapter, **there is considerable potential for supply chain jobs to be created in the future**, if the MeyGen and other demonstrator projects are realised. It is also clear that the direct jobs created, and safeguarded to date and in the future, do not include the range of associated jobs supported by the economic and social activities and projects sustained through the income generated by community energy projects. One implication of this is that the Monitoring and Evaluation Framework should be revised to capture these additional impacts.

5.47 Further, there is the potential for the projects currently supported **to be a catalyst for future jobs and investment if the technologies are proven**. If the technologies are proven, future projects

developed as a result of the initial REIF investment, plus the supply chain benefits of these and current REIF projects, have the potential to generate far more jobs in the Scottish economy.

Deadweight (non-additionality)

5.48 It is too early to estimate levels of deadweight given that the majority of projects are at the demonstration stage or in the early stages of operation. However, evidence from the projects operational to date is that somewhere in the region of 90% of the impacts are additional. The vast majority of projects would not have proceeded at all without the REIF investment: that is the impacts are largely wholly additional. All projects where impacts have been achieved estimated 81%-100% of impacts would not have been achieved without the REIF investment.

Displacement

5.49 Similarly, it is too early to comment extensively on displacement. There is some suggestion that community energy projects may be displacing energy purchases from other suppliers, although in many respects, if this is through a better deal for communities, this may be displacement which is desirable. Many community energy projects are in rural locations and increasing choice of supply may be regarded as a positive outcome.

Supply chain multipliers

5.50 Again, it is too early to comment on multipliers that may apply to the REIF investment projects, although £52 million has, or will be achieved, in terms of spend on Scottish-based suppliers. These relate to the projects REIF has invested in, and these too may be conservative estimates if the technologies are proven and further investment and jobs through the supply chain are created as a result. A third of the £52 million spend on Scottish-based suppliers has already been achieved.

Overall VfM

5.51 In terms of the overall value for money of REIF, much is dependent on the demonstrator projects, which (aside from the high profile failures in the early stages) are on track and progressing well. There are clearly costs associated with Fund administration. However currently REIF is expected to generate income equivalent to investment levels which has the potential to be reinvested. Given the market failures being addressed (positive externalities/public good), the returns to date and expected from REIF investment are good. Taking into account both expected net GVA and estimated net 20-year community income, REIF is expected to have a return on investment of around £3.29 for every £1 invested, albeit this needs to be seen as a very early estimate that is subject to later verification.

Future direction for key energy sector opportunities

5.52 Since REIF was established there have been important changes in the markets which REIF targets. It is clear from this mid-term review that REIF has been flexible, learning from early experience to adapt the operations of the Fund. This characteristic is likely to be needed in future due to further changes in the markets REIF is targeting. The following sections outline some market directions and potential.

Existing Sectors: Community energy

5.53 To date REIF has funded wind and hydro projects where the main income stream has been the FIT. In most investments, REIF has provided debt funding as a junior lender to the SPV that will develop, own and operate the renewable generator. The income from the FIT will have dominated the

income stream and hence will have been critical to the deal. In December 2015, DECC announced major changes to the FIT which included:

- Significant reductions in the FIT payment levels for wind and hydro, which have been the main types of community energy funded by REIF;
- Caps on the capacity that will receive a FIT in each quarter, creating uncertainty about success and timing for developing FIT schemes; and
- Expectation of further falls in FIT levels, which have a big impact due to the longer timescale needed to develop community energy projects.

5.54 As a result, projects will need to find higher income from other sources to re-balance their income stream and to remain fundable. The focus of this is increasing the value of the electricity generated, by selling direct to electricity users and earning more of the retail price. A range of routes to do this include:

- Locating capacity close to a large electricity user, so part of the electricity generated is used behind the consumer's meter and valued at the relevant retail prices;
- Installing energy storage and earning income from one or more parts of the electricity market, for example Enhanced Frequency Response, as well as higher prices due to generation at times of higher demand; and
- Selling direct to consumers using a private electricity network, or through the Distribution Network Operator's (DNO) system.

5.55 The FIT offers a 100% certain base price, plus inflation increases, from a utility with a good credit rating. The examples outlined in the list above are far less certain and each will need to be developed and a Power Purchase Agreement negotiated individually for each community energy project. As a result, REIF may need to become even more flexible, which is likely to require more time to work with a community to ensure that the income stream, and hence the debt, is secure.

Existing Sectors: Marine energy

5.56 For Scotland, the marine energy sector is of particular importance given the quality of tidal stream and wave resources and the location of many device and project developers in Scotland.

5.57 Two of the leading wave device developers in Scotland went into administration, Pelamis and Aquamarine, which gives an important measure of the difficulties and financial resources needed to commercialise wave technologies. Wave Energy Scotland, which took on the IP and some staff from Pelamis, has stated that a 10 year period may be needed before risks are reduced to the level where private sector investment will be attracted back to the sector. This suggests that REIF, and the model of working alongside private funders, will not find significant opportunity in the wave sector in the short term.

5.58 The tidal stream sector is at a much more advanced stage of development, with a range of device developers testing at full scale. Atlantis are currently constructing the 4 turbine 6MW MeyGen site with further plans for another 4 turbine 6MW commercial development on the site in 2017 with more capacity being planned for the future. The MeyGen project is particularly important, as it will test two turbine types for separate manufacturers, in a highly energetic tidal stream. Therefore the results of this project are needed to build confidence for the sector, as well as supporting the decisions on the next phases of the MeyGen development.

5.59 As well as the MW scale turbines proposed for MeyGen there are smaller devices, such as the Schottel turbines installed on the Sustainable Marine Energy platform which suit less energetic sites, including rivers, that represent a distinct market and investment opportunity.

5.60 So we would expect that REIF will continue to engage with the tidal stream sector about new funding opportunities and will continue to have a leading role to play until the commercial viability of the technologies is proven. Because of REIF's involvement in funding MeyGen, and other devices, SIB has an important route to use insights gained from these projects is to inform decisions on future investments.

5.61 As the small scale tidal sector develops and REIF's investments in companies such as Nova Innovations and Sustainable Marine Energy commercialise technologies, REIF could have a role to play in project financing tidal projects, potentially at a scale that is attractive to local community investment.

Potential future areas of focus and opportunity

5.62 There are a number of potential areas of future interest for REIF. The majority of these are consistent with the emerging Energy Strategy for Scotland.

Heat

5.63 Heat is a significant area of potential growth, not least since the heat market is much larger than the electricity one. Heating accounts for a large proportion of total energy consumption in Scotland, and nearly all of this is supplied through mains gas. There are also communities dependent on heating oil which historically is a particularly expensive form of fuel and one that is likely to become more expensive in the short to medium term. It is a contributor to fuel poverty as in many rural areas there is dependency on it. Given that the Scottish Government is refocusing its policy, with targets for over 40,000 households connected to a district heating scheme by 2020, REIF could play a part, for example in helping to develop new technology in the heat sector, together with new forms of district heating, where the risks are higher. This would mean more of a research and development role, representing something of a change in focus.

5.64 Over the lifetime of REIF to date, there have been bigger challenges associated with delivering district heating that go beyond the need for finance, relating to the wider infrastructure required if they are to be strategic, large projects. District schemes to date have typically been small scale, such as a single block of flats, or they have not been renewable schemes (e.g. fuelled by gas). It is also a mature technology, and alternative funding is available through other sources. There are schemes (for example in Portree, Oban, Aviemore and Orkney), but these have been grant funded. They do not tend to use loan finance given the grant support available from such sources as the Heat Network, ERDF, the Energy Saving Trust and the Low Carbon Transition Fund. There may, however, be a transition to be made from grant funding district heating projects, particularly low carbon district heating, to REIF investment before full commercialisation is realised.

5.65 Other heat related investments that may represent opportunities for REIF are energy from waste and heat recovery (e.g. from biomass) and some of these types of scheme have already been on the margins of consideration by REIF. There may be deals that can be done around gas generation from bio-assets through cleaning it and releasing this into the gas grid (that is. biogas from anaerobic digestion which is then cleaned up to become bio-methane and injected into the gas grid). There is already some interest in this, which may allow local cleaning of gas (and avoid long distance road travel by truck to some communities as is currently the case).

5.66 There have been significant numbers of renewable heat systems installed in Scotland supported by the Renewable Heat Incentive (RHI)⁶⁷. However each individual installation is small and not suited to finance from REIF. Opportunities for REIF may therefore lie in larger systems (which are few in number) or in group schemes, that is where a social landlord installs many smaller systems.

Power Purchase Agreements

5.67 To date renewable electricity projects have been financed with the income from incentives as the key cash flow that underpins the deal. However, the main incentives are changing quickly. For larger projects (over 5MW) the ROCs are being closed and the replacement Contract for Difference (CfD) is a competitive process with uncertainty over dates of auctions and no guarantee of winning a contract. For projects under 5MW the FIT payment levels are being reduced and a quarterly cap on the capacity supported has been introduced.

5.68 Future projects will therefore have lower income from incentives, and as a result the income from electricity sales under the Power Purchase Agreement (PPA) will be more important. To date the main option has been to arrange a PPA with a licensed electricity supplier, with prices linked to the wholesale electricity market.

5.69 A new opportunity, to sign PPAs direct with electricity consumers, may emerge. While the headline price earned may be higher there are costs and risks associated with this route. In future REIF may be able to support projects with a higher risk PPA.⁶⁸

Local energy networks and systems

5.70 Decentralised energy supplies for communities (that is local energy networks) are likely to feature as part of the new Energy Strategy and there may be an appropriate role for REIF to bring equity or debt into this type of activity for example to support local microgrids. Overall, community energy focus is changing to local energy sustainability, and REIF could adapt to this.

5.71 This approach is likely to involve more community development partnerships rather than support being provided directly to specific communities. It may also involve connecting renewable energy to the grid, supplying to the grid, and energy storage as part of whole energy systems, rather than just generation. REIF could be used to close deals on non-standard packages, potentially a bigger risk for REIF than is currently the case. These opportunities will include island energy systems.

Energy storage

5.72 Energy transfer and storage is one part of a whole energy system and this can be a potential area of interest for REIF investment. This could be part of an electricity system or a heat network (heat storage is almost standard on heat systems). The private sector need to consider that energy storage may be *“the next big thing in terms of technology development”*. A number of REIF beneficiary companies also cited energy storage as a potential area of future investment activity.

⁶⁷ DECC statistics show 19% of non-domestic and 22% of domestic RHI installations in Scotland

⁶⁸ For a project to secure bank finance, they generally have to have signed up to a PPA from a company with a high credit rating. This is something that the banks would look for from the off taker. Any of the ‘big six’ suppliers, or a company like Smartest Energy will likely have a high credit rating. What may be possible in future is that REIF could agree to lend to community projects that have a PPA with a company or organisation that is not an electricity supplier, such as a local SME or public sector organisation, allowing the community to sell directly to the consumer. This might be via a private wire, or over the distribution network. This has the potential to secure higher revenues for the community who are able to sell the electricity they generate at a high tariff than the wholesale market tariff. There are many examples of community owned projects selling directly to schools, so the generator will have a PPA with the school or with the local authority.

More small schemes and micro-generation

5.73 There may be more activity that can be developed in relation to small and micro-schemes. At present, REIF does not invest in these given the disproportionate amount of time required to do deals. The issue is that the due diligence costs are fixed and this is a high cost on a deal that is far smaller than the scale of existing REIF activity. There may, however, be an opportunity for REIF investment if there were to be lots of smaller schemes in a bundle using the same turbine. For small projects, there is little appetite from senior lenders to invest, and it may be that REIF could fulfil this role.

Earlier and/or re-finance investments

5.74 One private sector view is that REIF could more regularly invest earlier in community energy projects, then re-finance later. However, this may be a view based on ignorance of how REIF operates in so far as it does this already (for example REIF investment in the Point and Sandwich deal and the Gigha projects were both in advance of private funding). Re-financing for larger projects (those with, say, a 20 year life cycle) may be appropriate where communities buy in at the end of cycle. REIF could do more deals at different stages, rather than principally closing the deal (for example, post-construction re-financing when risk is lower). REIF can and does invest at different stages and has refinanced community debt where there is an income stream.

5.75 The private sector interviewees consider that the balance of lender ratio between senior lender and junior lender might need to change further to 80/20, 70/30 or even 60/40, although REIF is already involved in deals of this nature. In itself this could result in more refinancing. Some senior lenders are seeing a big pipeline in this even at present, allowing them to provide lower interest rates and release cash back to the community.

Alternative wave projects

5.76 It may also be worth REIF considering a small number of alternative or bespoke local wave project investments *“to get wave off the ground through marginal technology, in markets where the technology is high cost”*. To some extent this is what the Albatern project is doing through its wave.net (see Chapter 3). Given past experiences this would need to be approached carefully and typically on a relatively small scale, yet it could be economical in local market conditions. An example here would be wave energy in tandem with aquaculture (with the wave barrier acting as energy absorption, protecting fish farms and generating electricity).

Shared ownership community energy

5.77 As chapter 4 indicated, there would potentially be a considerable increase in these types of schemes if developers voluntarily (or mandatorily) brought forward projects with communities. These could have a very significant impact. Planning incentives can help achieve this (for example making it easier to achieve planning consents). This will need a change in the mind-set of developers to offer greater returns for the community, with the community achieving returns in line with those gained by developers.

Other low carbon activities

5.78 There are a number of ‘grey areas’ where REIF has considered investing although they are on the cusp of eligibility for the Fund. These may be appropriate for investment in a broader **‘low carbon’ fund**. Smart meters would be an example. REIF has already supported some of these activities, although not through investment finance. This includes a project managed by REIF but funded elsewhere due to Scottish Government budget reductions. This is Heliex Power, funded by the

Scottish Venture Fund, for a steam screw expander which works by generating electricity from waste steam.

5.79 One view is that REIF could transfer its learning to industrial decarbonisation, particularly in energy intensive areas. Overall, there is a balance to be struck between new areas of activity and diluting the focus away from what is currently a small, focused, able and agile team.

5.80 With all the areas above, there must be a market failure where the private sector will not invest, and a need for intervention before REIF becomes involved. Even with tidal sector, REIF may be unlikely to do more of these types of investments after the current deals. If the technology works then the market can take projects on and invest. The exception is perhaps tidal lagoons (although this can include significant infrastructure development as with Swansea Bay).

5.81 There may also be further REIF activity that can link with the Low Carbon Infrastructure Transition Programme (LCITP) which has resources to invest in energy system projects. REIF (with the Green Investment Bank) attend meetings with LCITP and therefore any opportunities for sourcing new investment propositions should be well known to the REIF team.

Summary and conclusions

5.82 The views from stakeholders and those active in the market are that there are many positive features of REIF. These include the advantages of REIF as a pan-Scotland fund with strong integration between SE and HIE and one which offers good levels of flexibility and a “can do” approach. REIF is well regarded by the private sector, cited as the junior lender of choice for community energy project debt finance.

5.83 REIF occupies an important and unique place in the marketplace, able to adopt a whole-project investment approach which includes development and construction. It is well regarded at UK and EC levels, with a right mix of projects and an appropriate attitude to risk: one where REIF funds the market gap thereby helping to complete deals.

5.84 In the future there are a number of challenges and opportunities. The marine tidal sector remains a market in development and much depends on the outcomes of this round of investment in being able to prove the technology. The changes to financial incentives for community energy projects could impact on REIF in so far as future projects will have lower income from incentives, meaning the income from PPAs becomes more important. In future, REIF may be able, or indeed may need, to support projects with higher risk PPAs.

5.85 There are also some delivery challenges although these are relatively easily resolved through active dialogue at the Programme Board. The Account Team approach, with REIF working with other parts of SE, and with HIE is also a good one, which can be strengthened further post-deal to help secure and increase downstream supply chain benefits.

5.86 There are other opportunities for REIF too, aligned to the developments of the new Energy Strategy where there will be an increased emphasis on a systems approach to energy, and on heat, power, transport and demand reduction. REIF, with its strong market and investor understanding, is in a good position to respond to these opportunities. These include ones related to energy from waste and heat recovery. These are *additional* opportunities for REIF, over and above further investment propositions in the marine and community energy sectors.

6 Conclusions and recommendations

6.1 The chapter presents the mid-term review conclusions and makes a small number of recommendations.

Investment mix

6.2 REIF has supported an appropriate range of projects, across the Marine/Other and Community sectors, combining large and small projects, and those with different levels of risk. This gives a good investment mix across the types of project and a relatively balanced portfolio with varying risks.

6.3 The notion that there were investors lined up to support investment-ready major marine projects at the outset of the Fund was one that quickly became clear was not the case. There were not four projects that would account for £80 million of the £103 million available as originally envisaged. The two high profile wave project failures were indicative of the newness of the technology and a general lack of investment readiness in the wave sector.

6.4 The largest live REIF investments are in the tidal sector: in MeyGen/Atlantis in particular. Whilst there is no guarantee of success with projects, there are hopeful signs the technology will be proven and there are potentially very great returns to the Scottish economy albeit there are also risks should MeyGen fail.

6.5 Overall, the mix between marine, community and other is not too different from that originally envisaged. Community energy projects are typically onshore wind with proven technology, plus some hydro schemes. Again REIF has had to react to the market (after Co-op pulled out in 2012) and respond accordingly. Community energy projects take a number of forms, and the REIF team have been proactive in seeking appropriate solutions for communities.

Impact Summary

6.6 Table 6.1 summarises the economic impacts to date (May 2016) of REIF investments for the three types of project, with the GVA being derived from turnover data. Perhaps unsurprisingly the community projects (given that many are operational) are making the greatest contribution.

Table 6.1: Actual impacts to date from REIF investments

Project type	Jobs created (FTE)	Jobs safeguarded (FTE)	Direct net GVA (£m)	Indirect net GVA (£m)	Induced net GVA (£m)	Total net GVA (£m)
Marine	34	28	£1.470	£1.330	£0.294	£3.094
Other	7	18	£0.259	£0.233	£0.051	£0.543
Community	2	0	£2.550	£2.290	£0.509	£5.349
TOTAL	43	46	£4.279	£3.853	£0.854	£8.986

6.7 Table 6.2 looks at the anticipated impacts over a twenty year life. What is perhaps surprising is that the community projects are still making the greatest contribution.

Table 6.2: Expected impacts from REIF investments

Project type	Jobs created (FTE)	Jobs safeguarded (FTE)	Direct net GVA (£m)	Indirect net GVA (£m)	Induced net GVA (£m)	Total net GVA (£m)
Marine	158	28	£42.400	£38.330 ¹	£8.480 ¹	£89.210
Other	75	18	£27.400	£24.632 ¹	£5.395 ¹	£57.427
Community	11	3	£59.000	£52.000	£12.000	£123.000
TOTAL	244	49	£128.800	£114.962	£25.875	£269.637

6.8 Table 6.3 summarises the impacts both to date and into the future. In excess of 380 jobs are created or safeguarded and almost £280 million of GVA created.

Table 6.3: Total Actual and Expected impacts

Project type	Jobs created (FTE)	Jobs safeguarded (FTE)	Direct net GVA (£m)	Indirect net GVA (£m)	Induced net GVA (£m)	Total net GVA (£m)
Actual	43	46	£4.279	£3.853	£0.854	£8.986
Expected	244	49	£128.800	£114.962	£25.875	£269.637
TOTAL	287	95	£133.079	£118.815	£26.729	£278.623

6.9 The majority of impacts are expected rather than having been realised. Given this there may be a degree of optimism about them. This is especially the case for the marine impacts, in that most of these are based upon technology that has still to be proven. It is also the case that these impacts are over a twenty year period. Given this, they need to be treated with a degree of caution.

6.10 To produce these impacts (actual and forecast) total public sector support of £78.7 million has been spent, of which REIF has contributed 66% (£52.3 million). It can therefore claim this proportion of the impacts. In addition to REIF investment staff costs between 2012/13 and 2015/16 amounted to £3.019 million, albeit that some of these costs will have been incurred supporting projects that have yet to be developed. Accepting this, total REIF costs amount to investment of £52.3 million with a further £3.019 million on staff: a total of £55.319 million.

6.11 Table 6.4 looks at the relative impacts based upon spend and the actual and forecast impacts to the end of 2015/16. It can be seen that the Impact Ratio (GVA per £1 SE support) is above 1:1 whilst the Cost per Job is very high. However, these figures need to be treated as broadly illustrative. Not only may the forecast impacts be subject to very wide margins of error but the money has been invested rather than provided as grant support. As such there is a potential for returns which will reduce the costs and improve the relative metrics. However, given the failures to date, any such returns are best seen as a welcomed bonus rather than being something that should be factored into any future impact forecasts.

Table 6.4: Relative Impacts

Metric	Impact
Total REIF costs to 2015/16 (investment and staffing)	£55.319 million
REIF's "share" of impacts (based upon its share of public sector investment)	66%
Total net GVA	£278.623 million
Proportionate GVA impact (66%)	£183.891 million
Total jobs created/safe guarded	382
Proportionate jobs impact (66%)	252
Impact ratio (£ GVA per £1 SE support)	3.32:1
Cost per Job	£219,520

6.12 In interpreting these figures it has to be remembered that the interviews with both projects and stakeholders found that additionality was very high: above 80% across all types of project. Few, if any, of the current or forecast project impacts would have been attained without the REIF investment. This is especially the case for the community projects which would not have been possible but for REIF support: essentially 100% additionality. REIF has also been crucial to the establishment of the marine projects where it has filled a funding gap. One estimate was that 90% of the impacts were wholly additional. Over two thirds of surveyed beneficiaries also stated that additionality levels for future turnover and employment benefits were between 90% and 100% (fully additional).

6.13 In addition to the impacts arising from power generation, the community projects will produce additional benefits as the income they gain is spent on projects of local benefit. An estimated £53 million is forecast over 20 years. The majority of this will be spent in rural areas thereby contributing significantly to the Inclusive Growth agenda.

6.14 Overall, there is evidence on the community energy side that REIF is starting to help overcome market failures, given that it has secured the involvement of commercial lenders and there are returns from the investment. However, there is still typically a funding gap for communities, and the changes to FIT and lower payments mean that intervention in the market through REIF is likely still to be required in the short- to medium-term.

6.15 Similarly, there remain market failures in the Marine sector, where REIF helps to reduce risk. There are some signs of adjustment: for example, the Equitix investment in MeyGen and Atlantis is evidence of other commercial investors taking an interest in the market and this should be welcomed. However, many Marine renewables projects are still not operational and there is an indication that without REIF the Marine renewable energy sector would not exist. Nevertheless, in time these market failures may be overcome as, and when, the technologies are proven.

6.16 REIF has, and will also strongly contribute in the future, to carbon reduction targets, saving an estimated 2,000 tonnes of CO₂ to March 2016.

Future REIF direction and activity

6.17 There is a need to continue the momentum built up by REIF, in both the marine/other and community energy activity areas. Considerable expertise has been assembled and this is valued widely by partners, the private sector and project beneficiaries.

6.18 There is strong enthusiasm for, and commitment to, a continuation of REIF across the spectrum of interested parties in the sector. The Fund and its team are regarded by a wide range of stakeholders as flexible, proactive and vital to the success of the renewables sector: a statement of positive intent with market credibility and an appropriate appetite for, and attitude to, risk.

6.19 The market continues to evolve, and where there are indications of project successes, the market is expected to take up the reins. There are a range of tidal devices that developers are testing at full scale, the results of which are required to build confidence in the sector. If the technologies are proven, it is hoped that the market will invest strongly in the tidal marine sector. However, other parts of the market, including community energy, remain under-developed, with a need for REIF-style intervention. REIF, however, will need to adapt, not least to changes in policy drivers, yet it should be well placed to do so given the space it occupies in the market.

6.20 Since REIF was established there have been important changes in the markets which REIF has operated in. REIF has been flexible and has learned from early experiences to adapt the operation of the fund. These characteristics will be needed in future due to further changes in the markets. In particular, FIT changes will reduce income which has to date been critical to the success of the deal. This will require higher income from other sources, including selling direct to electricity users and earning more of the retail prices.

6.21 The key policy development is the evolution of the Energy Strategy for Scotland. There will be an increased emphasis on a systems approach to energy, and on heat, power, transport and demand reduction. REIF, with its strong market and investor understanding, is in a good position to respond to these opportunities. There are particular opportunities afforded by heat, energy storage and local energy systems and networks. Other opportunities relate to modifications to existing approaches, for example ways to support more shared ownership community energy schemes and ways to further increase the attractiveness of investment to communities.

Concluding remarks

6.22 Overall, there is still a need for intervention in the renewables market and the review is very positive about REIF. As one stakeholder stated, echoing the thoughts of many, *“REIF’s Scotland-wide focus is a real advantage, as is their positive attitude. They have solved problems no-one else can...and it is a recipe to be applied outside the sector. Its ways of working, operating as a development bank, are quite unlike other development banks”*. That the sector has not developed as rapidly as anticipated should not be understated. It has taken much longer, and with technologies at relatively early stages. As such, without REIF, it is very unlikely that much development of the sector would have happened. Indeed the very high levels of additionality reported above (in excess of 80%) are evidence of this as well as indicating that REIF is filling a market gap.

Recommendations

6.23 Notwithstanding the positive aspects of this review, there are some recommendations that come from the above analysis:

- There is considerable merit in retaining REIF as an investment fund, with its unique position in the marketplace and great flexibility and in retaining the expertise of the REIF team. This includes a continuing focus on marine and community energy projects which, although different, both require the funding gap to be met and both help deliver the low carbon agenda for Scotland.
- The issues of governance should be resolved through continuing dialogue between the Scottish Government and SE/SIB through the existing Programme Board. This includes smoothing the differences arising from REIF as a project (as it is) and REIF as an investment fund. This is not irreconcilable. However the more certainty that can be given (such as around investment budget/levels) and the more clarity that is available (for example, in relation to roles) the better.
- REIF should evolve and move into areas outlined in the emerging Energy Strategy, including the much larger electricity market of heat (where the Scottish Government has a target for 40,000 households connected to a district heating system by 2020) and local energy systems. This evolution needs to respond to market conditions and the investment readiness of propositions. There may be a transition in funding regimes for (low carbon) district heating, from grant funding to loan investment through mechanisms such as REIF, before full commercialisation is realised. This is particularly true if larger district heating schemes are to be pursued.
- More could be done through the Account Team approach to ensure that barriers to realising supply chain benefits are overcome. This is not a recommendation for the REIF team *per se* (where there are limits to what can be done to ensure supply chain benefits are factored into deals), but one for SE or HIE to consider alongside REIF (for example through the SE Supply Chain and Infrastructure sub team).
- A focus should be retained on increasing the investment readiness of community projects through LES or similar initiatives (including strengthening the corporate finance, gatekeeper and project manager roles to support communities).
- The community impacts arising from REIF funded projects should be celebrated and captured. There could usefully be follow-up research on the scale and impacts of these benefits.
- Future objectives for the Fund need to be SMART and more clearly output and impact focused, rather than activity based. These should include objectives related to turnover, job creation, GVA and supply chain impacts.
- REIF should explore new opportunities brought in by such measures as the Power Purchase Agreements. A new opportunity, to sign PPAs direct with electricity consumers, may emerge and this has the potential to secure higher revenues for the community who are able to sell the electricity they generate at a high tariff. REIF should consider an intervention around this.

Appendix A: Consultee List

Stakeholder	Organisation
Mark Balneaves	REIF
David Bramble	DECC
Yvonne Candlish	REIF
Norrie Cruickshank	Triodos
Calum Davidson	HIE
Laura Finlayson	REIF
Sian George	Strategic Support
Frances Gillespie	REIF
Rob Halliday	Social Investment Scotland
Elaine Hanton	HIE
Anne Henderson	REIF
Michelle Howell	REIF
Sue Kearns	Scottish Government
David Keirs	SE
Michelle Kinnaird	SIB
Craig Lucas	DECC
Audrey MacIver	HIE
Melanie MacRae	HIE
Chris Morris	Local Energy Scotland
Jan Reid	SE
Gerry Reynolds	REIF
Jamie Roberts	REIF
John Robertson	The Crown Estate
Kerry Sharp	SIB
Andrew Smith	REIF
Chris Stark	Scottish Government
Seonaid Vass	SE
Keith Wilson	Santander

Beneficiary businesses consulted

Barra & Vatersay Wind Energy Ltd

Berwickshire Community Renewables

Callander Community Hydro Ltd

Fintry Renewable Energy Enterprise

Galson Energy Ltd

Gigha Green Power Ltd

Green Energy Mull Ltd

Islay Energy Community Benefit Society

Kilfinan Community Forest Limited

MeyGen Ltd/Atlantis Resources Ltd

North Hoo

Nova Innovation Limited

Oceanflow Energy Limited

Point & Sandwich Power Ltd

Scotrenewables Tidal Power Limited

Stewart Energy Ltd (Lesmahagow)

Sunart Community Renewables Ltd

Sustainable Marine Energy

Tarbert & Skipness Renewables Ltd

Tighnabruaich District Community Renewables Ltd

Appendix B: Comparator Fund Review

Overview

This appendix provides an overview of some of the funding and financing supporting renewable energy installations, with a particular focus on UK and EU sources of investment. These are summarised in Tables B1 and 2.

There is an extensive funding landscape for renewable energy investment from a variety of UK and European funding sources. These include grant and loan/equity options, with investment available at various stages of project/technology life cycles. Available funding is often challenge-driven, that is to meet a specified, often strategic, need (for example the Innovate UK calls). Grant funding calls tend to be open and competitive, in contrast with commercially driven deals, and other revolving investment funds which can be considered semi-competitive.

Many UK-based sources of grant funding focus on research, development and demonstration of early stage and pre-commercial technologies and solutions. Though many EU funds, such as Horizon 2020, remain as grant funding, particularly for research and innovation activity, there is a recent trend in European funding away from grants towards loan investments for infrastructure for most renewable sources, even amongst structural and investment funds.

Marine renewables funding and financing

Innovate UK

Innovate UK (formerly the Technology Strategy Board) is the UK's innovation agency, working collaboratively with public, private and Higher Education Institutions/research institutions to identify and develop innovative science and technology solutions to drive future economic growth. Its investment strategy is based largely around thematic or technology-focused project calls for funding through a number of different mechanisms. Its current **Energy Catalyst** programme focuses on addressing the low carbon, energy security and energy affordability 'trilemma' by funding business-led, collaborative research and development projects, across all development stages.⁶⁹

Innovate UK has previously funded calls with a specific sectoral focus. For example, in 2012 it supported the development of a renewable offshore supply chain Knowledge Transfer Partnership (KTP)⁷⁰, which was linked to a previous marine array technologies call co-funded by NERC, TSB and SE. This Marine Energy: Supporting Array Technologies call was aimed at collaborative research and development to support successful deployment and operation of the first series of wave and tidal energy arrays including subsea hub connectors, tidal platforms and tidal installation barges.⁷¹ Other calls have considered various infrastructure, technology and supply-chain challenges – including Power Take Off (PTO) systems for wave energy conversion, co-funded by Wave Energy Scotland.

Innovate UK has also previously developed calls, and provided funding for, a range of project types, for a number of related areas. These include: infrastructure for offshore renewables (including electrical infrastructure, monitoring, and support structures); emerging energy technology, power

⁶⁹ <https://www.gov.uk/government/publications/funding-competition-energy-catalyst-round-4>

⁷⁰ https://interact.innovateuk.org/competition-display-page/-/asset_publisher/RqEt2AKmEBhi/content/developing-the-offshore-renewable-energy-supply-chain

⁷¹ Technology Strategy Board (Innovate UK) (2012) Marine energy: Supporting array technologies – competition for collaborative R&D funding, March 2012

electronics to control energy systems; and integrated supply chain systems – cross-sector supply chains that can deliver integrated energy solutions at different scales.

Innovate UK's interventions are often co-funded with other public sector or research partners. In contrast to REIF, Innovate UK provides grant funding rather than debt or equity financing. The grants are awarded through open, competitive funding calls that are often targeted at either technological challenges, with calls more suited to components, or efficiency measures or at industry/sector support in the case of supply chain calls.

Department for Energy and Climate Change (DECC)

The UK Government's Department for Energy and Climate Change (DECC) provides funding for renewable energy measures as part of its innovation policy, which aims to ensure that the right energy innovation happens, to achieve 80% reduction in greenhouse gas emissions by 2050 – as well as making a contribution to interim targets. This supports its overall mission to counter two risks to the UK: a shortfall in secure, affordable energy supplies and catastrophic climate change.

In providing grant funding interventions, its focus is on the later innovation stages of technology readiness levels (TRLs), that is late stage development and partial and full scale demonstration (actual systems proven in an operational environment).

DECC marine and offshore wind investment

The Marine Energy Array Demonstrator (MEAD) fund launched by DECC in 2012 aimed to demonstrate the capability of marine energy technology to operate at an array scale. It allocated funding of £20 million in two projects, SeaGeneration (Wales) Ltd (a subsidiary of MCT, then owned by Siemens) and the MeyGen project in the Pentland Firth. The grant investment was made on a co-funding basis, meeting up to 45% of project capital costs (limited by European State Aid rules). However, the challenges of developing marine renewables technologies meant they were not as close to commercialisation as was expected at the time MEAD was launched and the deadline for submissions needed to be extended to secure sufficient quality proposals. Further problems for the fund arose when MCT could not reach financial close on its proposed project in the timescales required, so had its MEAD funding withdrawn.

DECC also provided funding through its innovation strategy for offshore wind. The Offshore Wind Component Technologies Development and Demonstration scheme was designed to stimulate innovation in the offshore wind sector, strengthen the supply chain, and reduce the cost of energy generation. £30 million was provided to offshore wind projects, covering all sub-areas of large (i.e. 5MW+) offshore wind systems. The scheme's third call linked to an Innovate UK call for feasibility studies for pre-industrial research and feasibility studies, as well as the Knowledge Transfer Partnership (KTP) detailed above.

DECC also supports the Carbon Trust's Offshore Wind Accelerator (OWA) programme, along with eight other partners including Scottish Government, Scottish Power Renewables and SSE Renewables. This is aligned with the offshore wind components scheme. The OWA is structured around five research areas: electrical systems, foundations, (vessel) access, cable installation, and wave and wind resources. The bulk of OWA's funded projects are 'common' or desk-based studies, whilst it also supports 'discretionary' demonstrator projects.

In comparison with REIF investment in the marine renewables sector, as with Innovate UK, DECC has provided marine renewables grant funding through specific calls, most recently MEAD. MEAD funding was for project development, rather than technology development.

Whilst DECC has provided funding to offshore wind technologies, to date, REIF has only invested in one demonstrator offshore wind project as part of their 'other' investments. It was highlighted during the interview with OceanFlow that this may be an area that REIF may want to consider further in the future, as this sub-sector appears not to be supported by other investors, and offers considerable potential.

European Investment Bank (EIB)

As the European Union's bank, the EIB has a range of strategic priorities to support sustainable development in the European Union, including the transition to a low-carbon, environmental friendly and climate-resilient economy. Investments in this area are reinforced by the EIB's Climate Strategy, adopted in September 2015.⁷² As one of the largest providers of climate finance worldwide, the EIB commits at least 25% of its lending portfolio to low-carbon and climate-resilient growth. In 2015, its lending totalled €3.4 billion, the EIB's biggest annual investment in climate action.⁷³ As well as its traditional medium- to long-term loan products, EIB also makes equity investments, and makes use of a variety of financial mechanisms, often with other funding or strategic partners. These include:

- Structured finance, which uses a mix of senior and subordinated loans, guarantees, and mezzanine finance for priority projects, for example. trans-European Energy networks ;
- Private Finance for Energy Efficiency (PF4EE), a financial instrument which aims to address the limited access to adequate and affordable commercial financing for energy efficiency investments; and
- Fund investments, such as. carbon funds, and equity capital for energy efficiency and renewables funds such as the Global Energy Efficiency and Renewable Energy Fund (GEEREF), a fund-of-funds that invests in private equity funds which focus on renewable energy and energy efficiency projects in emerging markets, through proven technologies with low risk.

Importantly, the EIB 'mainstreams' climate action considerations by integrating specific climate change measures throughout its approach to project appraisal and monitoring. Where projects result in a significant change in greenhouse gas emissions (GHG), an economic cost of carbon is incorporated to produce an adjusted economic and financial rate of return. Project carbon footprints are also assessed according to sector-specific methodologies.⁷⁴

Additional EIB funding mechanisms

The EIB also supports a number of funding mechanisms specifically focused on renewable energy and energy efficiency which are detailed below:

ELENA

The European Local Energy Assistance (ELENA) facility was originally set up by the European Commission and EIB through the Intelligent Energy Europe (IEE) programme to help local and regional authorities make investments in energy efficiency and renewable energy. ELENA helps public entities by offering specific support for the implementation of the investment

⁷² EIB (2015) EIB Climate Strategy – Mobilising finance for the transition to a low-carbon and climate-resilient economy

⁷³ <http://www.eib.org/projects/priorities/climate-action/index.htm>

⁷⁴ EIB (2014) Methodologies for the Assessment of Project GHG Emissions and Emission Variations, available at: http://www.eib.org/attachments/strategies/eib_project_carbon_footprint_methodologies_en.pdf

programmes and projects such as retrofitting of public and private buildings, sustainable building, energy-efficient district heating and cooling networks, or environmentally-friendly transport.. ELENA is focused especially on large-scale energy efficiency and renewable energy source programmes.

ELENA covers up to 90% of the technical support cost needed to prepare, implement and finance the investment programme, through grants. This could include feasibility and market studies, programme structuring, energy audits and tendering procedure preparation. With solid business and technical plans in place, this will also help attract funding from private banks and other sources, including the EIB.

European Energy Efficiency Fund

The European Energy Efficiency Fund (EEEF) is an innovative public-private partnership dedicated to mitigating climate change through energy efficiency measures and the use of renewable energy in the member states of the European Union. It focuses on financing energy efficiency, small-scale renewable energy, and clean urban transport projects (at market rates), targeting municipal, local and regional authorities and public and private entities acting on behalf of those authorities.

EEEF contributes with a layered risk/return structure to enhance energy efficiency and foster renewable energy in the form of a targeted private/public partnership, primarily through the provision of dedicated financing through direct finance and partnering with financial institutions. The final beneficiaries of EEEF are municipal, local and regional authorities as well as public and private entities acting on behalf of those authorities such as utilities, and energy service companies. Investments comprise direct investments, ranging from €5 Million to €25 Million, and investment in financial institutions, normally through debt instruments (senior debt, subordinated debt, guarantees) with a maturity of up to 15 years, for on-lending.

Like REIF, EIB make whole-project investments, and demonstrates a bespoke, project-by-project approach to structuring finance deals offering grants, loans or equity investment. As a European-level investment institution, it has a wider array of investment tools at its disposal. Further, terms of loan can be longer, up to 20 years. EIB also operates project-specific interest rates, and can offer varying rates during the lifetime of the loan through revisable and convertible rates.

The Crown Estate

The Crown Estate (TCE) is an independent commercial business established by Act of Parliament which pays profit to Treasury. Additionally, TCE invests in and manages some of the UK's most important assets, ensuring they are sustainably worked, developed and enjoyed to deliver the best value over the long term.

TCE's current portfolio of marine sites⁷⁵ covers the Pentland Firth and Orkney Waters, Northern Ireland, testing and demonstration at the EMEC facility in Orkney amongst other testing and development sites around the UK. Additionally TCE have held two commercial leasing rounds for tidal current and wave projects, one in the Pentland Firth and Orkney waters strategic area and the other in the Rathlin Island and Torr Head strategic area in Northern Ireland.

TCE is committed to working with industry and stakeholders to successfully exploit the UK's significant tidal and wave energy resources. TCE's role primarily involves leasing areas of the seabed and

⁷⁵ <http://www.thecrownestate.co.uk/energy-minerals-and-infrastructure/wave-and-tidal/our-portfolio/>

managing the associated seabed rights. To date they have leased over 40 sites for tidal, current and wave projects and have started the first leasing process for tidal range projects. In addition, TCE are undertaking 'enabling actions' work which covers research and technical studies to support the project development process.

In addition to these 'enabling actions', TCE has also been financially involved in the marine sector, having invested £10 million in MeyGen's tidal current project. TCE provided a loan as part of the first phase (6MW) of the MeyGen project (up to 398MW in total).

The approach adopted by TCE investing in the MeyGen project differs from REIF as the TCE investment was in the form of a loan, whereby REIF provided equity and debt finance.

New Entrants Reserve (NER) 300

NER 300 has established a demonstration programme of EU projects comprising the best possible carbon capture and storage (CCS) and renewable energy supply (RES) projects and involving all Member States. The programme supports a wide range of RES technologies, including bioenergy, concentrated solar power, photovoltaics, geothermal, wind, ocean, hydropower, and smart grids. NER 300 also seeks to leverage a considerable amount of private investment and/or national co-funding across the EU, boost the deployment of innovative low-carbon technologies and stimulating the creation of jobs in those technologies within the EU.

NER 300 is funded from the sale of 300 million emission allowances from the New Entrants' Reserve (NER) set up for the third phase of the EU Emissions Trading System (EU ETS). The funds from the sales are to be distributed to projects selected through two rounds of calls for proposals, covering 200 and 100 million allowances respectively.

Under the first call for proposals, awarded in December 2012, the European Commission made funding awards for a total value of €1.1 billion to 20 renewable energy projects. This amount is estimated to have leveraged additional funding of over €2 billion from private sources. In the second award decision in July 2014 the Commission awarded €1 billion in funding to 18 renewable energy projects. This amount is estimated to have leveraged additional funding of over €860 million from private sources.

The European Commission is responsible for the overall management and implementation of the NER 300. In this, the Commission draws on the unique expertise of the EIB (discussed earlier) to evaluate proposals submitted by Member States, to sell NER allowances on its behalf and to manage the revenues and the payment of funds to Member States during project implementation.

Under NER 300, each project was eligible to receive up to 50% of relevant costs, with a limit of 15% of the total available allowances over the two rounds of calls for proposals per project. The remainder of costs was to come from private finance.

Further rounds of funding using NER allowances (NER 400) are currently being explored by the EU. Unlike REIF, the NER 300 funding for marine renewables projects was through grants, which leveraged additional private finance.

Regen SW

Regen SW is an independent not-for-profit agency that uses its expertise to work with industry, communities and the public sector to revolutionise the way energy is generated, supplied and used. The focus of its work is on one overarching goal: *"Creating an excellent environment for sustainable*

energy in the south west” with a focus on “offshore renewables, the built environment, microgeneration and energy efficiency, renewable heat and onshore electricity generation”.

Whilst Regen SW does not provide any sources of finance per se, they have similar objectives to REIF. Where REIF has an objective to support the development of the renewables sector in Scotland, Regen SW has an objective of supporting the development of renewables in the South West region of the UK. They provide strategic guidance and support to developers looking to develop projects in the South West with a particular focus on offshore renewables

Other relevant financing mechanisms

There are a range of other relevant funding mechanisms that invest in renewable energy projects. The **OCEANERA-NET** is a European Research Area Network (ERA-NET) co-fund, funded through the EC’s FP7 programme (the 7th Framework Programme for Research and Technological Development) and co-ordinated by Scottish Enterprise. A number of REIF-supported marine energy projects have received some support through OCEANERA-NET. Its aim is to address the research and innovation challenges for the role ocean energy can play in contributing to future energy targets. Similarly, **SOLAR-ERA.NET** is an FP7 funded European network co-fund, co-ordinated by NET (Nowak Energy and Technology) in Switzerland, to support solar electricity generation, such as photovoltaics (PV) and concentrating solar power (CSP)/solar thermal electricity (STE). A notable feature of ERA-NET co-funds is that funding is generally disbursed amongst network partners and the organisations that they support.

Further, the **DemoWind** network co-fund supported through Horizon 2020 and co-ordinated by DECC supports the development and demonstration of innovative technologies to reduce the cost of offshore wind energy. In particular it targets capital-intensive industry-led demonstrator projects.

The research network co-funds are part of a wider body of support for research and innovation projects supported through the EU’s research framework programmes, currently **Horizon 2020**. Horizon 2020’s Secure, Clean and Efficient Energy work programme aims to address the Energy Challenge, of which low-cost, low-carbon electricity supply is one of the key objectives. The focus in Horizon 2020 calls for funding is on demonstration of innovative technologies: for example the current 2016-17 work programme includes funding calls on >10MW wind turbine demonstrators, innovative solutions for maintenance, reliability and extended lifespan of offshore wind farms and scaling up the ocean energy sector to arrays. In this sense, European research funding is focused on earlier stage technologies and solutions than REIF, particularly with regard to marine energy.

The WATERS grant funding program, managed by Scottish Enterprise has provided over £15 million of funding to over a dozen developers over the last year with a focus on developing technologies. The funding required match funding from private investors.

Other commercial investors have started taking an interest in the tidal market. Equitix recently entered an agreement with Tidal Power Scotland Limited (TPSL, a subsidiary of Atlantis with developer rights for a number of sites in Scotland) to potentially take a 25% stake in future TPSL projects.

Community renewables funding

DECC Community energy

DECC also funds community energy schemes, but this is limited to England. This is done through the Rural Community Energy Fund (RCEF) in partnership with WRAP (Waste and Resources Action

Programme) for rural communities, supporting feasibility and pre-planning development work for communities. The Urban Community Energy Fund (UCEF) supports early stage project development, such as initial public consultation and preliminary viability studies to determine suitable technologies through grants and also provides contingent loans for detailed project development costs, for urban projects. The remit of both funds is similar to CARES in Scotland.

In comparison with REIF funding of renewables, DECC renewables funding is early stage, higher risk grant and loan funding for project development, rather than the post planning capital financing provided by REIF.

Triodos

Triodos Bank is one of the world's leading sustainable banks. Their mission is to make money work for positive social, environmental and cultural change. Triodos Bank finances companies, institutions and projects that benefit people and the environment and add cultural value, with the support of savers and investors who want to promote a sustainable society – as well as offering a good return on their money.

Triodos Bank are able to provide all types of funding, for new and existing projects with tailor made and one-stop financial services being part of the offer. Equity investments are available from €1 million to €10 million with the ability to co-invest if necessary.

Triodos Investment Management has over 20 years' experience of investing in renewable energy. Their total renewable energy equity and loan portfolio in Europe consists of over 100 projects, with a total green power generation capacity of approximately 740MW.

The Triodos Renewables Europe Fund, open to all EU projects and established in 2006, focuses on offering complementary risk capital through equity or subordinated loans, as well as supporting small and medium sized developers of renewable energy. The current⁷⁶ size of the fund is €64 million.

Triodos lends to similar community projects to REIF, often with REIF as junior lenders. With this Triodos would complete their own due diligence and set the terms of the loan to the project. The scale of project that Triodos will finance is greater than that of REIF: typically more than 1MW.

Santander

Santander contributes to the global objective of fighting climate change by providing financial solutions and through its leadership position in renewable energy at the international level. Furthermore, Santander has known how to adapt to market changes, taking advantage of new business opportunities that have arisen. This commitment is reflected through various financial products and services, through project finance, seed and risk capital investment, sale and lease back and bridge equity.

Santander UK has been funding renewable energy projects since 2004 and has now been expanded with dedicated specialists situated across the country. Their approach is based on listening to customer requirements and bringing innovative solutions to the table. A dedicated team has in depth experience of funding onshore wind farms and ground mounted solar parks, as well as strong links with other professionals in the sector, including technical, legal and financial advisers.

⁷⁶ As of 31st December 2015

Santander offer project finance debt solutions ranging from £3 million to a maximum of £20 million for UK-based projects and can participate and arrange larger multi-bank syndicated facilities. Their project finance debt offering supports the developer and/or investor during the construction phase and covers up to a maximum of 80% of total capital expenditure. Santander tries to minimise set-up costs by using trusted advisers and liaises closely with treasury experts to make sure customers address their interest rate, RPI and foreign exchange hedging requirements.

Santander's offer includes:

- Senior debt facilities sized over a 15 year operational period, but with a 10 year legal maturity following completion of construction.
- Senior debt offering supporting developers and/or investors during construction phases and covers up to a maximum 80% of the project costs.
- Set up costs minimised by using trusted advisors.
- Access to key decision makers.
- Arrangement of, and participation in, syndicated facilities for larger projects.

As with Triodos, the primary differences between the finance offered to community projects by Santander and REIF is that Santander will take the senior lender role and will only fund larger scale projects, typically multi MW projects.

Charity Bank

Charity Bank is an ethical bank with a mission to use money for good. It uses the money its savers entrust to it to make loans to charities and social enterprises. Since 2002, Charity Bank has made loan approvals of over £250 million to charities and social enterprises. The bank's community of borrowers, savers, investors and its team are all working towards one goal – helping strengthen charities and social enterprises, so that they can create lasting social change in communities across the UK.

Charity Bank has a track record of lending to renewable energy schemes, providing senior loan funding alongside other organisations. Previously it has provided 15-year loans to communities on the condition that a similar amount to the loan is raised through a community share offer.

Similar to REIF, Charity Bank has invested in smaller scale projects, such as the 300kW Garmony Hydro project for which it provided senior debt finance.

Social Investment Scotland

Social Investment Scotland (SIS) is the largest not-for-profit provider of business loans to the third sector in Scotland as well as itself being a social enterprise and registered charity.

SIS is also Scotland's, and one of the UK's, largest Community Development Finance Institutions (CDFI). As a CDFI, they make loans and other repayable investments to charities, community organisations and social enterprises that may find it difficult to access finance from other sources.

SIS can provide loan finance of up to £250,000 over a repayment period of up to ten years. Loans are generally charged at a fixed rate of interest of 8% with a 1% arrangement fee charged at the start of the loan. Repayment holidays can be arranged during the construction phase.

SIS plays a very similar role to REIF with a similar finance offering to communities. SIS can also offer bridging finance, particularly for those communities that are raising finance from a share offer and may have a funding gap once the share issue has closed.

Big Issue Invest (BII)

BII, a social investment subsidiary of the Big Issue magazine, can provide loan finance on similar terms to SIS (i.e. up to £250,000, over ten years with a fixed interest rate of 8% and a 1% arrangement fee). Again, repayment holidays can be arranged during the construction phase.

CAF Venturesome

CAF Venturesome is the social investment arm of the Charities Aid Foundation. It can offer loan finance to communities up to £250,000, with an interest rate from 6.5% and an arrangement fee of 1%. Loan repayment terms are generally up to five years and a repayment holiday can be negotiated for the construction phase.

Green Investment Bank

The UK Green Investment Bank (GIB) was created by the UK Government, the sole Shareholder, and capitalised with public funds. They use this finance to back green projects on commercial terms and mobilise other private sector capital to grow the UK's green economy.

GIB is an investor in UK based green infrastructure projects, primarily investing in energy efficiency, waste and bioenergy, offshore wind, and onshore renewables. To date, it has invested in 74 green infrastructure projects and seven funds. They have directly committed £2.6 billion to the UK's green economy in transactions worth £10.6 billion.

GIB works to mobilise other private sector capital, crowding in additional finance rather than displacing other investors. A new investment of £60 million by the UK Green Investment Bank (GIB) and the Strathclyde Pension Fund (SPF) in UK community-scale renewable energy projects, through Albion Community Power plc (ACP), was announced in February 2015.

GIB has committed to provide up to £50 million with SPF investing a further £10 million. ACP is working to attract a further £40 million from additional co-investors to take the total sum of investable capital to £100 million. The finance will be used to provide equity funding of between £1 million and £10 million for a broad range of community-scale renewable construction projects including run-of-river hydro-power, onshore wind on brownfield sites such as industrial estates, and biogas projects including anaerobic digestion and landfill gas.

GIB has also invested £100 million in a £200 million lending programme for community-scale renewable energy projects managed by Temporis Capital LLP.

GIB has a different funding role in community renewables to REIF. GIB will set up funds similar to REIF that will then be managed by other parties who will identify projects to invest in.

Table B.1: Overview of selected offshore sector comparator funding

Fund	Budget/investment size	Investment type	Geography	Sector/priorities	Comparison to REIF	Points of learning/best practice
Innovate UK <i>Energy Catalyst (current)</i>	Up to £9 million in Round 4 (2016) Early stage projects of max. £200,000 total project cost Mid-stage projects of max. £1.5 million total project cost Late-stage (pre-commercial) projects of max. £10m total project costs	Grant funding, co-funding model. Early- and mid-stage: 70% of total project costs for small or micro SMEs, 60% for medium SMEs or 50% for larger companies. Late-stage: 45% of total project costs for small or micro SMEs, 35% for medium SMEs or 25% for larger companies.	UK	Pan-energy sector	Market-driven, often demand-led innovation R&D driven investments, often up to pre-commercial Often component focus rather than whole project, with some supply chain support	Demand-led innovation may lead to commercialisation of new technology, but such solutions are not necessarily investor ready Supply-chain focused work encourages wider networking and knowledge transfer
<i>Marine energy: Supporting array technologies (historic)</i>	£10.5 million in 2012 to support successful deployment and operation of the first series of wave and tidal energy arrays. £6.5 million from TSB, Scottish Enterprise up to £3 million and NERC up to £1 million.	Grant; 50% for applied research, 25% for experimental research	UK	Wave and tidal: cabling, subsea electrical hubs, installation and maintenance vessels, navigation, degradation	Grant funding aimed at specific marine technologies or technology enablers accessed through competitive calls	Ongoing monitoring of grant funded projects takes place on a quarterly basis.
<i>Developing the offshore renewable energy supply chain (historic)</i>	Up to £1.2 million in 2012 to support the development and operation of a Knowledge Transfer Partnership for offshore renewable energy	Variable dependent on company size, and cost modelling of Higher Education/research partners, c.£60,000 operating costs	UK	Offshore renewable energy – wind, wave, tidal stream and tidal range energy sources	Grant funding aimed at specific marine technologies or technology enablers accessed through competitive calls	
<i>Power Take Off (PTO) systems for the wave energy sector (historic)</i>	Up to £7 million in 2015 through Small Business Research Initiative	Up to 100% Stage 1: Concept characterisation and feasibility studies – up to £0.1 million per Project for up to 6 months Stage 2: Concept optimisation/proof of concept – up to £0.5 million per	UK, for deployment in Scotland	Marine – wave energy	Grant funding aimed at specific marine technologies or technology enablers accessed through competitive calls	

Fund	Budget/investment size	Investment type	Geography	Sector/priorities	Comparison to REIF	Points of learning/best practice
		Project for up to 12 months Stage 3: Engineering development and small-medium prototypes – up to £2.5 million per Project for up to 24 months Stage 4: Engineering definition and medium-large stage prototypes – up to £4 million per Project for up to 24 months				
<i>Integrated supply chains for energy systems</i>	Up to £9.5 million for innovations to address the need for a diverse mix of energy sources and systems £500,000 for feasibility studies, £9 million for collaborative R&D projects	Two-stage competition, grant funding. Up to 70% of costs for feasibility studies, 50% public funding for collaborative R&D project costs (60% for SMEs)	UK	Cross-sector supply chains for energy systems	Grant funding aimed at specific marine technologies or technology enablers accessed through competitive calls	
DECC <i>Offshore Wind Component Technologies Development and Demonstration scheme</i>	Up to £30 million to address need to drive innovation, strengthen supply chain and reduce energy generation costs	As with a number of offshore renewable grants listed, this grant was made under EU State Aid General Block Exemption Regulation. 45% funding for small enterprises, 35% for medium, and 25% for large companies. In collaborations: 60% funding for small enterprises, 50% for medium, and 40% for large	UK	To demonstrate component technologies for >5MW offshore wind turbines or associated technologies. To provide support to tackle the new challenges and innovation required to advance technology in terms of scale or complexity. To generate learning and practical experience which can improve confidence.	Focus is at component level, to advance technology rather than (explicitly) support industry sector or key players. Grant funding aimed at specific marine technologies or technology enablers accessed through competitive calls	
<i>Marine Energy</i>	Up to £10 million each for two	Grant for experimental	UK	To build confidence	Similar (but wider)	Limited applications

Fund	Budget/investment size	Investment type	Geography	Sector/priorities	Comparison to REIF	Points of learning/best practice
<i>Array Demonstrator (MEAD) (not current)</i>	pre-commercial projects , to support capital expenditure	development (as defined under State Aid rules), 45% funding for small enterprises, 35% for medium, and 25% for large		in wave and tidal generators as a viable technology to produce bulk electricity	technology readiness levels and range/focus Need to secure VfM for taxpayer Leases, planning consents should be in place, with deadline on grid supply	for MEAD due to state of development of projects and technologies
EIB	25% minimum of its lending portfolio. €3.4 billion in 2015. This includes: €464 million in offshore wind €752 million in onshore wind €405 million in solar €373 million in hydro €13 million in geothermal €434 million to connect projects to national grids	Loans, structured financing, equity investment, fund investment, guarantees, support for financial instruments. Also investment support for instruments specific to renewables and energy efficiency, including European Local Energy Assistance (ELENA) and the European Energy Efficiency Fund (EEEF).	EU, but also outwith Europe where this supports EC and EIB priorities	Renewable energy and energy efficiency	Longer term investments Pan-renewable focus Flexibility of rates during the project lifetime	Economic cost of carbon is factored into project appraisals, to produce an adjusted economic and financial rate of return
The Crown Estate (TCE)	Investments considered on a case by case basis. First loan (£10 million) offered as an enabler to the industry.	Loan	UK	Marine renewables – only invested in tidal	TCE have provided a loan to MeyGen, whereas REIF have provided loan and equity	
NER 300	Two funding rounds of €1.1 billion and €1 billion respectively	Grants for development projects alongside private investment sources. Projects eligible to receive up to 50% of relevant costs, with a limit per project of 15% of the total available allowances over the two rounds of calls for proposals.	EU	Carbon Capture and Storage, bioenergy, concentrated solar power, photovoltaics, geothermal, wind, ocean, hydropower, and smart grids	NER300 provides grants.	Additional NER funding rounds are being explored at present. NER300 funding has been transferred between projects (e.g. from Kyle Rhea to MeyGen)

Table B.2: Overview of selected community renewables comparator funding

Fund	Budget/investment size	Investment type	Geography	Sector/priorities	Comparison to REIF	Points of learning/best practice
Triodos	€64 million	Equity investments available from €1 million to €10 million with the ability to co-invest if necessary	UK/EU	Offer complementary risk capital through equity or subordinated loans, as well as supporting small and medium sized developers of renewable energy	Tend to provide senior loans alongside REIF	Triodos have considerable experience in the sector and will consider unconventional projects such as grid constrained sites
Santander	Ranging from £3 million to a maximum of £20 million	Project finance debt solutions for UK-based projects. Senior debt facilities sized over a 15 year operational period, but with a 10 year legal maturity following completion of construction. Ranges from 3% to 8%	UK	Wind and solar PV	Santander focuses on larger multi MW projects.	Project finance debt offering supports the developer and/or investor during the construction phase and covers up to a maximum of 80% of the total capital expenditure cost
Charity Bank	Unknown	15-year loans to communities on condition that a similar amount is raised through a community share offer	UK	Projects that have positive impact on community	Similar to REIF offering loans to smaller projects.	Decision making process for Charity Bank loans can take a long time.
Social Investment Scotland (SIS)	Loan finance of up to £250,000	Repayment period of up to ten years. Loans generally charged at a fixed rate of interest of 8% with a 1% arrangement fee charged at the start of the loan	UK	Charities, community organisations and social enterprises that may find it difficult to access finance from other sources	Similar to REIF offering loans to smaller projects. SIS also provides bridging loans	Repayment holidays can be arranged during the construction phase
Green Investment Bank (GIB)	Up to date invested £2.6 billion	Mobilise other private sector capital alongside own equity funding	UK	Energy efficiency, waste and bioenergy, offshore wind, and onshore renewables	Investments made on a larger scale than REIF	

REIF's position in the market place

Based on the details of the other funding sources outlined above it is clear that REIF is somewhat unusual in the whole-project and sometimes company investment that it takes. This differs from the component-or technology-specific approach, or project stage focus, which a number of other interventions employ. This is driven by its priority to invest in the deployment and operation of arrays in the case of marine technologies and sizeable community energy projects that have an offer of a grid connection. In addition its range of investment is broader (with the exception of the EIB, which due to its scale is able to invest across the renewables and energy efficiency spectrum) giving it a greater degree of flexibility in comparison to investments made by UK-based bodies.

It is arguable that its remit plays to Scotland's strengths, but its focus on real commercial investment opportunities has addressed the market failure of investor confidence and it can be considered a market leader in that regard. This approach differs from other funders' approaches, which focus on technological market failure. REIF's appetite for risk also contrasts with other funders, and this is part of its strategy to encourage investor confidence.

Appendix C: Pelamis and Aquamarine Investment

The scope of this mid-term review did not include a review of either the Pelamis or Aquamarine investments made by REIF. As a result, limited information was accessed, only that available in the REIF Monitoring and Evaluation Framework. No additional information, such as the investment papers that led to the final investment decision by SE, was consulted. In addition, neither of these companies was discussed with relevant stakeholders either within SE or external to SE. As both companies are now in administration, there is no one directly at the companies who could be contacted, although senior employees from both companies are still active in the marine renewables sector and could potentially be interviewed.

The following is a summary of the impact of the REIF investment that can be taken from REIF's Monitoring and Evaluation Framework for each of the two different companies.,

Pelamis

The REIF investment leveraged less private investment than was targeted, with this coming from SPR and E.ON allowing for the continued operation and maintenance of each of their P2 devices. This investment was made at the beginning of 2013, with the company going into administration in November 2014, so secured the jobs of 56 employees for approximately 2 years.

Prior to the REIF investment, Pelamis had secured Marine Renewables Commercialisation Fund (MRCF) support of £2 million, so the REIF investment will have allowed Pelamis to utilise this funding, although there is no information provided as to what the fund was used for.

It is not clear how much additional IP was created during this time, but any created would have added value to the assets now owned by Wave Energy Scotland. During this period over 100MWh of electricity was generated, so additional operating experience will have been gained by Pelamis, which it is understood, Wave Energy Scotland are looking to share with the sector.

In terms of the impact on the supply chain, there will have been continued requirement for local vessels to be on call to support the Pelamis turbines.

To identify the learning from the REIF investment in Pelamis, it is necessary to understand how the investment decision was made and the level of due diligence (technical, financial, commercial and market) that was completed prior to the decision being made. This will have identified what the key risks were at that time and whether those risks were realised when Pelamis went into administration. If those risks were not identified, then the level of due diligence may not have been sufficient. If the risks were identified, but considered low enough to allow investment, then a decision could be made as to whether the level of risk acceptable for a REIF investment is appropriate.

Ultimately additional private sector investment in Pelamis could not be found and the level of risk to a private sector investor was higher than the level of risk acceptable to REIF.

Aquamarine

A difference between the Pelamis and Aquamarine investments is the status of the devices at the time the investment was made. Pelamis had been operating in excess of 10,000 hours at the time the investment was made. These were the P2 devices which were large scale prototypes of the proposed commercial scale device, which was understood to have a capacity significantly larger than the 750kW devices operating in Orkney (details of this device were not widely publicised).

The Aquamarine device, was a second generation device that had been in the water for a number of years, however it did not have the same level of operating hours. As with the Pelamis device, the next generation prototype was in design. It is understood that there had been a number of significant failures of the Aquamarine Oyster device, which, whilst not catastrophic, did require large weather windows to allow repairs to be completed.

These differences will have had an impact on the risk profile of the investment being made. This will again have been identified during the due diligence completed before the investment.

Nevertheless, the Aquamarine investment managed to leverage higher private sector investment than did Pelamis. REIF's investment was made in the middle of 2013, with Aquamarine going into administration in October 2015. Aquamarine also received funding through MRCF of over £5 million. In the case of Aquamarine, 65 jobs were safeguarded for the 18 months of operation that REIF funding contributed to. During this period the Aquamarine Oyster 800 was able to continue operations, although it is not clear if the Oyster 800 was generating electricity during this period or was being repaired. A total of 11MWh was generated by the device, but it is not clear if this was generated during the period of REIF investment. It is therefore not clear if the level of benefit to the local supply chain was as high as with Pelamis. It is also reported in the data provided that no additional IP was generated.

As with the Pelamis investment, to identify the learning from the REIF investment in Aquamarine it is necessary to understand how the investment decision was made and the level of due diligence (technical, financial, commercial and market) that was completed prior to the decision being made. This will have identified what the key risks were at that time and whether those risks were realised when Aquamarine went into administration. If those risks were not identified, then the level of due diligence may not have been sufficient. If the risks were identified, but considered low enough to allow investment, then a decision could be made as to whether the level of risk acceptable for a REIF investment is appropriate.

Ultimately, additional private sector investment in Aquamarine could not be found and the level of risk to a private sector investor was higher than the level of risk acceptable to REIF.