

Community Benefits from Offshore Renewables: Good Practice Review

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THE UNIVERSITY of EDINBURGH

Executive Summary

Overview

This project evaluates existing practices in community benefit models for offshore renewables. We identify and evaluate national and international case studies of different community benefit models, and provide evidence of how community benefits are delivered and distributed. In particular we consider the key relationship between how communities are identified, how impact is perceived, and how benefits may therefore be apportioned. We then assess the different mechanisms and schemes of benefit-sharing to identify good practice and key points of learning for Scottish policy and planning. The full report can be found at [Community Benefits from Offshore Renewables: Good Practice Review](#).

Key findings

- Evidence for community benefits from offshore renewables is rare. The UK leads the way in delivering benefits, although this is largely ad hoc, voluntary, and varies between developers.
- The Scottish Government is alone in explicitly considering distribution of the local and national benefits beyond the delivery of supply chain benefits.
- The way in which community, benefit and impact are understood are crucial in determining whether or how benefit should be apportioned and delivered; and these definitions are closely connected to each other.
- We detail in the report the range of ways in which benefits are provided; and find that community funds are the most common approach.

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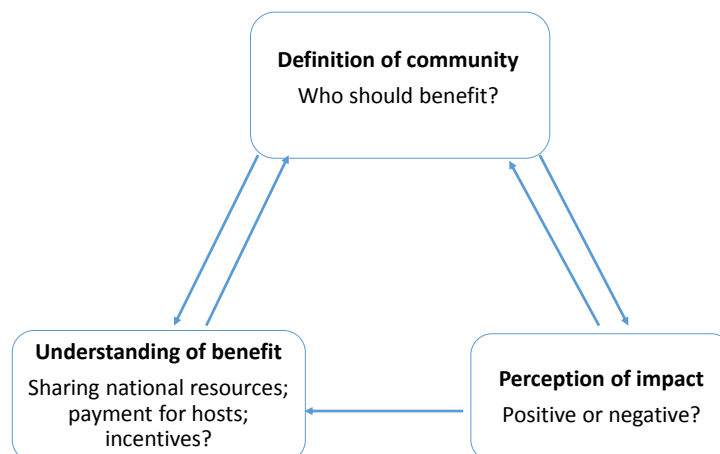


Figure 1: The relationship between community, benefit, and impact

For example, as we discuss in the report, if benefits are understood to be a way of spreading the rewards from national offshore wind resources, then a community will be defined very broadly (perhaps as the whole country), and the impact will be perceived to be positive. If however, a community is perceived to be suffering a negative impact (for example from hosting the onshore infrastructure), then benefits may be understood as a way to mitigate that impact, for a specific geographical community.

Although, in Scotland, community benefits should not be referred to as compensation measures and rewards for communities, we find that governments, developers, and communities often use different (and at times conflicting) understandings of community, benefit, and impact. Correspondingly, benefits are often delivered in different ways, depending on which set of definitions are being drawn upon; for example they may be focused on a local community or organisation, or delivered more widely.

Recommendations

- The current framework of non-restrictive guidance should be maintained to retain a high degree of flexibility for developers and communities.
- Reflecting on the interrelationship between all three dimensions (community, benefit, impacts) can provide a robust approach in developing community benefit models.
- Developers and local authorities should clarify the meaning and limitations of community benefits when entering negotiations with relevant communities;
- Early and thorough engagement with local communities should be a first step for assessing the needs and concerns of communities, discussing appropriate and desired benefit models, and determining potential beneficiary communities.
- Local authorities can play a useful role in linking the needs of communities with the willingness of developers to provide benefits; and community liaison groups or officer can help to establish more efficient links with communities.

- Communities should be supported to build the capacity they need to maximise benefits.
- The benefits provided should remain flexible and be based on the needs of the community and characteristics of the site and project.
- Indirect benefits should be pursued as well as establishing direct community benefits.

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1. Introduction

This report presents the findings of a project evaluating existing practices in community benefit models for offshore renewables. We identify and evaluate national and international case studies of different community benefit models, and provide evidence of how community benefits are delivered and distributed. In particular we consider the key relationship between how communities are identified, how impact is perceived, and how benefits may therefore be apportioned. We then assess the different mechanisms and schemes of benefit sharing to identify good practice and key points of learning for Scottish policy and planning.

What is significant is that in many ways Scotland already leads the way in offshore benefits; the Scottish Government is alone in explicitly considering distribution of the local and national benefits beyond the delivery of supply chain benefits. Indeed, we find that community benefits from

offshore renewables are rare, anywhere in the world, and that most examples come from across the UK. We discuss these, and the other examples that exist, and draw out the significance for this emerging policy area.

The structure of the report is as follows. First, we briefly outline the approach and methods used. The following sections 3 to 6 are concerned with the intertwined relationship between different definitions of communities and interpretations of benefits. In these, we provide detailed explanations of the various approaches used to define beneficiary communities and interpretations of benefits in practice. In section 7, we then describe the different community benefit models and mechanisms we identified in our study. This overview is also summarised in table 1 on page 16. Learning points from non-renewables are outlined in section 8. Section 9 deals with a number of challenges for the delivery of community benefits from offshore renewables. We then discuss trends in good practices in community benefits by providing a series of recommendations and key points for consideration in Scotland. Detailed descriptions of benefit models and relevant case studies are included in the addendum.

2. Methods

This research draws on a range of primary and secondary data. We examine policy, existing practice, and a series of case studies of community benefits. In particular we consider examples from the UK, USA, Denmark, Germany and the Netherlands; countries chosen because they are relatively well advanced in their consideration of community benefits from offshore renewables. We also consider examples from South Korea, Ireland and Canada. These existing schemes are predominantly connected to offshore wind, but we also consider wind and tidal energy projects, CCS, and the offshore oil and gas industries. The data collection included interviews with key stakeholders, policy analysis, and secondary data analysis.

3. Why community benefits?

We firstly consider the rationale for providing community benefits from offshore renewables. The introduction of community benefits from offshore renewables is a relatively new idea, anywhere in the world, and is carried out for a number of reasons:

- i. ***Voluntarism by developers as good practice of community engagement:*** Community benefit schemes from offshore renewables were first introduced by some developers in the UK for Round 1 projects in order to replicate the positive experiences from onshore wind farms. Since there are no regulations, community benefit packages have been arranged on

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a voluntary basis between the developer and potential communities. Examples include Rhyl Flats, Robin Rigg, North Hoyle and Scroby Sands offshore wind farms, which will be considered later in this report.

- ii. ***Statutory conditions imposed by authorities:*** Community benefit schemes can also be statutory conditions. However, these are much less common, with only a few authorities imposing regulations which are material considerations in the planning process. For example:
- a) In the U.S., there is a particular scheme in Massachusetts that legally obliges a developer to provide community benefits (see Case Study 1 below).
 - b) In Denmark, regulations state that at least 20% of the ownership of an offshore wind farm should be offered to geographically local communities and adjacent municipalities.
 - c) In Scotland, there is no legal obligation for developers to offer community benefit, but the Highland Council introduced the most advanced community policy that guides voluntarily contributions from developers and also regulates the distribution of benefit payments from offshore renewables (see Case Study 2).
- iii. ***Demand from communities***
Community benefits can emerge as a direct response to pressure from communities arguing for their involvement in offshore renewables and the distribution of benefits. The introduction of compulsory ‘community benefit agreements’ in Massachusetts resulted from community lobbying (see Case Study 1). Similar pressure came locally for community benefits from the Walney Offshore Wind Farm in the UK.

Case Study 1: Massachusetts, USA

Through a proposed sales notice for offshore wind farms off Massachusetts from June 2014, the federal institution BOEM imposed the obligation of ‘community benefit agreements’ between offshore wind developers and communities. Such an agreement is a “legally binding contract between a bidder and one or more community based organizations (CBO) where the bidder has committed to provide specified community benefits and the CBO has committed in specific ways to support the project in the governmental approval process” (BOEM 2014). The legislation does not specify what the community benefits and support mechanisms from the community should look like, but the agreements have become a decisive component in the planning process for offshore wind farm developments in Massachusetts. The introduction of these agreements harks back to lobbying from energy co-ops, which “requested to BOEM that those communities most impacted by offshore wind farms development receive direct benefits from these projects” (Vinyard Power Cooperative 2014). This request for benefits was then taken up by authorities when they “decided to include them in this auction because Massachusetts municipalities have been asking for community consideration since 2009” (South Coast Today 2014). This case study reflects the introduction of a benefit scheme as a response to community demand, whereas communities invoke a particular understanding of benefits as some form of compensation for expected impacts, which will be considered in the following section. (see addendum for more details and references)

4. Defining and understanding community benefits

Intuitively, the idea of distributing benefits to a community may seem quite simple. However, our research suggests that it is anything but; a complexity compounded by developments being located primarily offshore. Our research suggests that there are five different ways in which benefits may be understood:

- **Spreading the positive:** Sharing the economic benefits of harnessing a nation's natural resources and assets. For example, Scotland has some of the best offshore wind, wave, and tidal resources in the world, and developers making payment to communities when they are able to harness these resources is a way of spreading the rewards that they bring. This reflects the fundamental understanding of the Scottish Government, which defines community benefits as "voluntary measures" or "monetary payments" that allow "communities across the country to share in benefits from its rich natural resource", and that "are provided outside the planning process", "complementary to the delivery of supply chain benefits" and "not related to anticipated impacts of the planning application".¹ Thus, community benefits do not directly serve a planning purpose.²
- **Recognising hosts:** Benefits can be perceived as payments by developers which recognise that communities are 'hosting' a development, which is often related to onshore developments, such as the substation. This follows the model onshore, where "communities close to terrestrial wind farms typically receive payments in recognition that they are hosting developments of national importance in their locality" (interview with UK developer). Discussions about benefits could take place as part of a comprehensive engagement process, in which the developer is seen as a 'good neighbour' who cares about and is committed to a community³. Indeed, developers we interviewed framed the provision of community benefits as corporate social responsibility, and part of developing and applying good practice principles.
- **Local acceptance:** Renewable energy developments have met with effective opposition from local communities⁴. Providing benefits to communities may be perceived as a way of increasing local support⁵. Indeed, the agreement in Massachusetts (see Case Study 1) is that community groups who receive benefits must commit to support the project. UK developers in our research also described voluntary benefits as a means of keeping a community on-board, and also as a strategic way to compete with other developers. However, the success of marine renewables and the local acceptance of community

¹ The Scottish Government (2014): Good Practice Principles for Community Benefits from Offshore Renewables. Draft for Consultation, June 2014. (<http://www.scotland.gov.uk/Resource/0045/00454325.pdf>)

² The Scottish Government (2012): Planning Obligations and Good Neighbour Agreements. Circular 3/2012. (<http://www.scotland.gov.uk/Resource/0041/00410382.pdf>)

³ Aitken, M., Haggett, C. & D. Rudolph (2014) 'Wind Farms Community Engagement Good Practice Review.' (www.climatechange.org.uk/reducing-emissions/what-good-community-engagement-wind-farm-developments)

⁴ Haggett, C. (2010) 'Public perceptions of offshore wind energy' *Energy Policy*, 39, 2:503-510; Aitken, M. (2010) "Why we still don't understand the social aspects of wind power: A critique of key assumptions within the literature." *Energy Policy* 38.4, 1834-1841.

⁵ Cowell, R., Bristow, G. & M. Munday (2011): Acceptance, acceptability and environmental justice: the role of community benefits in wind energy development, *Journal of Environmental Planning and Management*, 54,4, 539-557

benefits are also related to the local willingness to accept environmental and social change more generally⁶, and may not necessarily lead to more support for the actual project.

- **Accounting for impact:** Academic research has long pointed to a perceived disjuncture between the global benefits of renewable energy and impacts which are experienced locally⁷. Providing benefits may acknowledge that there is an ‘impact’ and are therefore a way of recognising and addressing this. When asked how they define eligibility for funding one developer explicitly said that they consider impacts of the projects during operation and construction. There may be demand from communities for any impact to be taken into account. For example, councillors local to the Walney Offshore Wind Farm in the UK argued that “no one should underestimate the need for communities to get due recompense for hosting it”⁸.
- **Compensation:** payment for an agreed and identified loss. Community benefit payments should not be confused with compensatory payments, which are enforced legally to mitigate losses for or impacts on relevant third parties that are caused by offshore development, such as fishers or environmental organisations. Compensation in this legal sense is not part of the remit of our report.

These understandings of benefits can become rather intertwined in practice (see Case Study 2). However, the different definitions matter because they influence the way in which ‘communities’ are defined and understood, as we will now discuss.

⁶Kerr, S., Watts, L., Colton, J., Conway, F., Hull, A., Johnson, K., Jude, S., Kannen, A., MacDougall, S., McLachlan, C., Potts, T. & J. Vergunst (2014): Establishing an agenda for social studies research in marine renewable energy, *Energy Policy* 67, 694-702.

⁷Aitken M (2010): Wind power and community benefits: challenges and opportunities. *Energy Policy*, 38(10): 6066-6075; Bell, D., Gray, T., and Haggett, C. (2005): ‘Policy, participation and the ‘social gap’ in wind farm siting decisions’, *Environmental Politics* 14, 4, 460-477

⁸North-West Evening Mail (2013): Vow to help Barrow reap benefits of giant wind farm. 22/10/2013 (<http://www.nwemail.co.uk/news/vow-to-help-barrow-reap-benefits-of-giant-windfarm-1.1092928>)

Case Study 2: Councils in Scotland

The Highland Council has developed its own community benefit policy for onshore and offshore renewable energy developments. While recognising that community benefits are an entirely voluntary matter, the Highland Council also considers benefits as a contribution that is made “in respect of development, such as large renewable energy schemes, which have a long term impact on the environment”, and to ensure that local communities “are compensated for the disruption and inconvenience associated with large scale development work” and to reward them for hosting developments (The Highland Council 2014). Likewise, Moray Council does not separate the idea of voluntary community benefits from compensation either while stressing that community benefits can be interpreted differently, as: “a desire from the developer to meet corporate social responsibility demands; a way of being seen to compensate affected communities for a range of factors; a positive way of engaging communities about renewable developments” (Moray Council 2012:2). Only in a later report, the Moray Council states that “community benefits are independent of impacts” and an “entirely separate process from the planning decision” (Moray Council 2014:1) (see section 4 of addendum for details).

5. Definition of beneficiary communities

We have so far discussed the different ways in which ‘benefits’ may be defined. Defining ‘community’ in terms of providing benefits is also not straightforward. The ways in which ‘benefits’ and ‘community’ are understood are clearly interlinked and have important implications for how community benefits are conceptualised and operationalised. Here, we firstly discuss the different ways in which communities can be defined before exploring how these definitions relate to the different understandings of benefit.

Communities in the context of benefits from offshore renewables can be defined as:

5.1 Communities of locality: a certain group of people dwelling in the geographical vicinity of a renewable energy development⁹; defined by spatial and jurisdictional criteria, such as proximity and distance. Across our case studies the most common approach for defining communities eligible for benefit streams or beneficial involvement of developers was based on spatial determinants. However, due to likely visibility of an offshore development from various communities along the coast, benefits based on a spatial rationale are often directed to either a smaller number of coastal communities (such as the North Hoyle Community Fund), or a local authority region that benefits from funds (such as the Sheringham Shoal Community Fund). Community benefit schemes for onshore and offshore renewables that are built on spatial determinants are common in the UK and Denmark.

⁹ Walker, G. (2011): The role for ‘community’ in carbon governance, *WIREs Climate Change*, 2, 5, 777-782

5.2 All-Embracing Community: this definition involves an indirect and spatially detached distribution of possible benefits among a number of diverse communities or wide area that is not necessarily affected by a particular offshore development. In this approach, local authorities are usually in charge of spreading revenues from offshore renewables, which is mostly done in an equal manner, although may also prioritise certain groups or local communities. Indeed, one respondent mentioned that all people who pay electricity bills fund wind farm projects and could therefore be considered for the distribution of benefits. This may, however, result in beneficiary communities that do not correspond with affected or host communities, which may therefore benefit larger, distant or many communities, and could provoke questions about distributional fairness.

5.3 Communities of interest: communities constituted through a common interest in or whose interests are affected by the development of offshore renewables. Such a community of interest could include particular stakeholders in the vicinity of a development whose activities share the same space.

5.4 Communities who are affected: benefits to mitigate any adverse effects may be made available to particular groups or communities who are negatively impacted. Some developers do not employ the offshore wind farm as the key criteria to define affected communities but refer to the site of related onshore developments and their likely impacts on nearby communities. This approach for defining relevant communities is also grounded on spatial principles, but which refer to the distance between communities and onshore developments of an offshore wind farm (see Case Study 3, and London Array).

5.5 Community organisations: community can also refer to local, charitable or public organisations that act as a category of the public, such as community councils or development trusts.¹⁰

We found evidence for all these conceptualisations of communities in our study. It also became evident that the question about an adequate definition of affected and eligible communities is closely linked to the question about the distribution of benefits. Indeed, we think there is a direct relationship between the understanding of benefit; the definition of a community; and the perception of impact (as illustrated in Figure 1):

¹⁰ Walker, G. (2011): The role for 'community' in carbon governance, *WIREs Climate Change*, 2, 5, 777-782

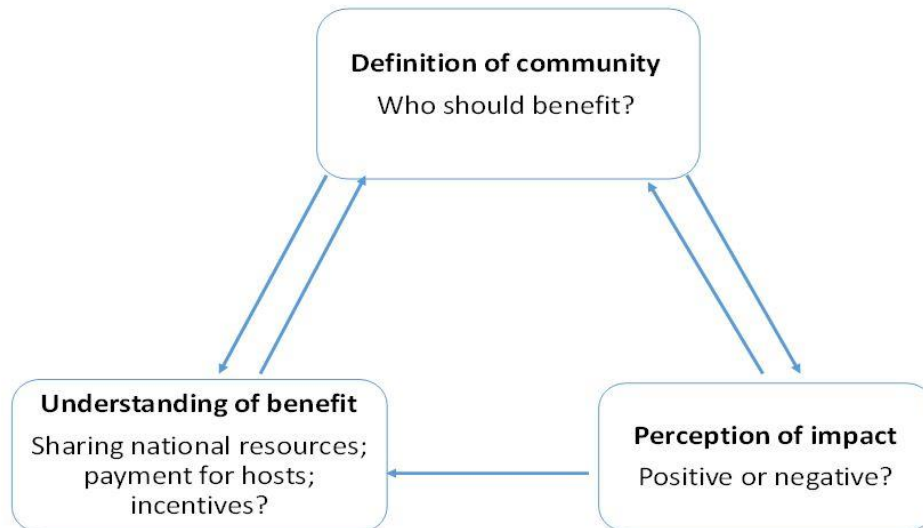


Figure 1: The relationship between community, benefit, and impact

We have drawn this relationship as a triangle rather than a flow diagram because each of the definitions can influence each other. As such, the first step in conceptualising community benefits, or developing a community benefits strategy could be informed by any one of the three factors. How each is conceived will have implications for the others and if any one consideration is given primacy this will clearly play a key role in shaping how community benefits are developed and deployed.

For example, if the understanding of benefits is about spreading the positives from the nation’s natural resources, then this influences the definition of community that will be used. This is not about impacts on a particular affected community, so a spatially detached definition of community becomes the most relevant understanding:

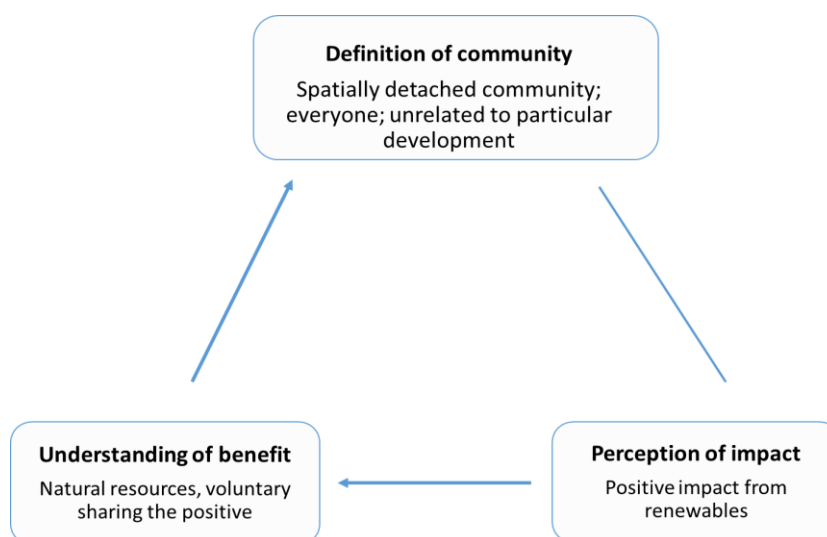


Figure 2: The relationship between community, benefit, and impact for the spreading and sharing of benefits from national resources

A positive perception of offshore renewables as providing a range of benefits (and not negatives for communities) can influence a perception of benefits as being about spreading national resources. Similarly, conceiving of communities in a broad, non-localised or geographically specific sense, can influence a perception of benefits as being a way of providing a national benefit very widely. This set of understandings are most usually drawn upon by governments and local authorities (see point 6.2 below), and also reflects the Scottish Government’s understanding of the provision of community benefits. Examples of communities and benefits being defined in this way include the Coastal Communities Fund (see section 4 of addendum).

If however, benefits are understood as a way of accounting for impact, then a different definition of community may be used:

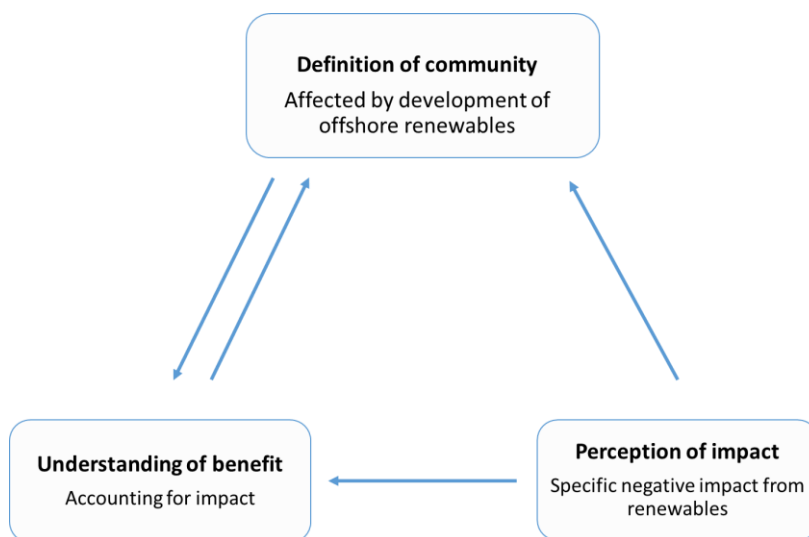


Figure 3: The relationship between community, benefit, and impact when accounting for negative impact

In this understanding, communities are perceived to suffer a negative impact (for example, from being near the onshore infrastructure; see Case Study 3), benefits are a way of accounting for this, and are targeted at a specific community which could be said to be affected. This set of understandings is often drawn upon by communities (see point 6.3 below). Examples of benefits being conceived of and delivered in this way include Triton Knoll and Argyll Array offshore wind farms (see Table 1 for more information).

Further, if benefits are understood as a way of mitigating opposition, then a different definition of community may be used:

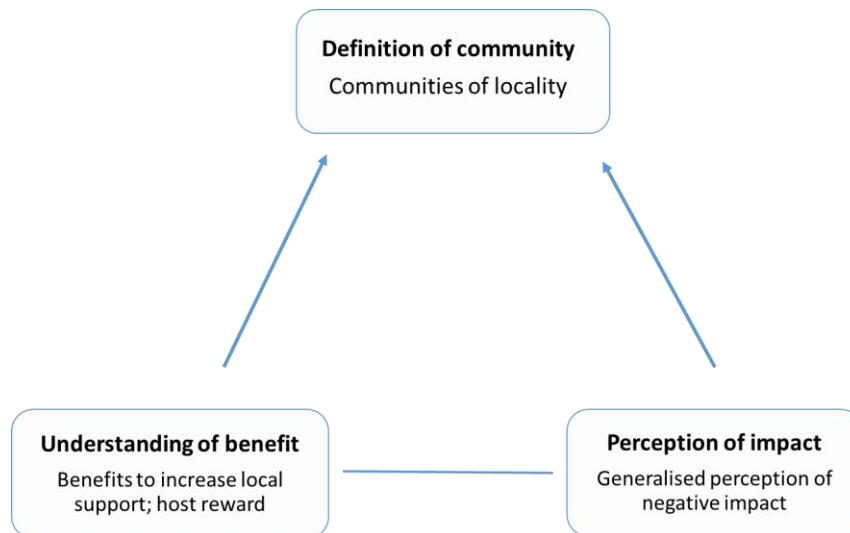


Figure 4: Relationship between community, benefit, and impact for increasing local support in local communities

In this understanding, benefits are a way of recognising that a community is a host, and a developer acting as a good neighbour; or it can be about trying to increase local support/minimise opposition. These understandings are most commonly used by developers (see point 6.1 below). Examples of benefits being conceived of and delivered in this way include London Array and Gwynt y Mor offshore wind farms, and the Sound of Islay Tidal project (see Table 1 for more information).

Whilst other factors or variables will inevitably influence how community benefits are conceived, these factors (Definition of community; Understanding of benefit; Perception of impact) appear to be the three principal considerations influencing the design and conceptualisation of community benefits.

Case Study 3: Considering onshore infrastructure

Some developers do not employ the offshore wind farm as the key criteria to define affected communities; instead they refer to the site of related onshore developments and their likely impacts on nearby communities. This approach for defining relevant communities is also grounded on spatial principles, but considers the distance between communities and the onshore developments associated with an offshore wind farm. Communities are most likely to experience an impact during the construction of the wind farm and onshore substation, and the installation of onshore cabling (increased traffic onshore and offshore, increased noise and environmental and material changes). A host community is defined by hosting particular sub-projects of an offshore development. This approach is used at the Triton Knoll Offshore Wind Farm off the east coast of England, London Array, and the planned East Anglia ONE wind farm. A direct relationship between a community and the development is only established through the use of onshore infrastructures for the construction, maintenance and operation of an offshore wind farm, rather than actual offshore activities which are further away from the coast. This approach is also taken by RWE for some of their offshore projects. Likewise, initial community benefits from London Array were also related to the onshore substation and the O&M base at Ramsgate rather than the offshore developments which are 20km out at sea. In general, developers found it easier to demarcate the surrounding communities by means of the physical onshore developments.

6. Who defines beneficiary communities?

We therefore suggest that there are different – and interconnected – ways of defining communities, benefit, and impact. These definitions are also closely linked to the question of *who* defines which communities benefit from offshore renewables; and who therefore also has the power over how and when benefits are delivered. In this research, we have found evidence of all three key actors (developers, communities, and authorities) influencing which communities benefit from offshore renewables:

6.1 Developers: since community benefit streams from offshore renewables are often voluntary matters for developers, it is often the decision of developers to determine who benefits, as is usually the case in the UK and Netherlands. The communities identified are usually located at the adjacent coast. Delivery options for benefits are often determined in collaboration with the community; for example, for the Triton Knoll Community Investment Fund, and the Sheringham Shoal Community Fund, benefit criteria have been decided in consultation with local communities. This is usually an understanding of a community benefit as recognition of hosting; and a developer being a good neighbour to a community of locality; it can also be a way of trying to increase local support and minimise opposition (see Figure 4).

6.2 Government: The definition of beneficiary communities can also reside with authorities that have adopted particular policies for community benefits, as exemplified by Denmark,

Germany, or by the Highland Council, or in Massachusetts (see Case Study 1). In Germany, the federal state is in charge of the distribution of tax income from offshore renewables, while developers of planned nearshore wind projects in Denmark are obliged by novel policies to offer at least 20% of the ownership to residents and businesses close to the development, which both generate additional revenues for communities or individuals. Similarly, the Highland Council in Scotland states that community benefits should be spread as much and as widely as possible, while considering coastal and affected communities as the key beneficiaries and centrally organising benefits for the remaining areas of the authority's region. This is usually therefore a conception of community and benefit as spreading a national resource (see Figure 1).

6.3 Communities: Cases of local communities exerting influence are rare (we have discussed Massachusetts and Walney as unusual examples of where communities demanded benefits). Cases where communities had the power to define more specifically who benefits are even rarer and only linked to community offshore wind farms, where benefits emerge from community ownership that is demanded or brought forward by communities. Identified examples are most common in Denmark (Middelgrunden, Samsø), but also emerging in the USA. For example, the Lake Erie Energy Development Corporation based in Cleveland plans to build a community offshore wind farm in Lake Erie. In contrast to the rare influence over the definition of the spatial distribution of benefits, communities are more often engaged in the specifications of the arrangements for the benefit delivery as illustrated in many case studies in the UK (Gwynt y Mor, North Hoyle, Triton Knoll). Negotiations with communities over different benefit models often start at early stages of project planning and before the submission of the planning applications, which also echoes good practices of community engagement as outlined by Aitken et al. (2014)¹¹.

7. Evidence of community benefit models and mechanisms

Having discussed the relationship between different definitions of community, benefit, and impact, and which parties commonly utilise these definitions, we now consider more specifically examples of the ways in which benefits have been delivered. An extended discussion of these models including examples and case studies is provided as an addendum to this report. We identified the following community benefit models:

- Community funds
- Other and pre-existing funds
- Community Ownership
- Equal distribution of revenues
- Direct investment and project funding
- Apprenticeships and studentships
- Educational programmes

¹¹ Aitken, M., Haggett, C. & D. Rudolph (2014): Wind Farms Community Engagement Good Practice Review. The University of Edinburgh. Commissioned by ClimateXChange.

- Electricity discounts
- Community benefit agreements
- Indirect benefits from the supply chain
- Indirect benefits through tourist facilities

The following descriptions and evaluations of community benefit models and underlying mechanisms include direct voluntary monetary streams as well as indirect benefits that emerge from the development of particular projects and the wider establishment of an offshore renewables industry. Even if the latter cannot necessarily be considered as voluntary community benefits in the strictest sense, they are included as they can exhibit some features which may be interpreted as community benefits and are also often represented as such in practice. Therefore, not all of the following benefit models that we identified can be easily classified as voluntary benefit sharing. They rather reflect and relate back to the various relationships between the definitions of communities and benefits, and perceptions of impacts. Table 1 then summarises the different forms that community benefit models take and some of their key features. The table demonstrates the variety of different mechanisms for the delivery of community benefits; that most examples come from the UK; and also the different understandings of ‘community’ and ‘benefit’ and ‘impact’ which are drawn upon.

Community Funds: The most common method for developers to provide benefits are monetary payments to be paid into a fund for the use of a community. Community funds can be linked to certain developments through payments in correlation with the capacity of the project, a larger lump sum payment when the project commences operation, or through a certain amount of money related to the revenues of the project. Linking funds to particular onshore or offshore developments gives some indication of underlying rationales that relate back to figures 3 and 4. Payments usually start as soon as the project commences operation, but there are also schemes that earmark payments into funds during the planning and construction stages. These early payments are often referred to as a “good neighbour strategy” related to preliminary assessments and capacity-building plans and can be seen as a specific way of engaging and building trust with local communities. Payments may either be made into a pre-existing community development fund or a fund that has been set up for the purpose of handling income from a particular offshore project.

Although community funds are aimed at benefitting a nominated community, there can be restrictions on who can apply as well as the purpose of the fund. Theoretically, since the fund is for the benefit of the community as a whole, it is up to the community to determine the purpose of the fund and therefore to decide on what it regards as a benefit for the community. However, in practice this often proves to be rather difficult due to the heterogeneity of views, attitudes and

interests of a community¹². In order to fulfil the responsibility of supporting a whole community, rather than enriching individuals or particular groups, the purpose and access to a fund are often negotiated with representatives of a community, such as a board or trust established for the purpose of managing the fund, and the developer. We found evidence for both, a democratic decision-making process on what funds are spent as well as the determination of particular funding streams controlled by trustees.

Whilst community funds are the most common model for the provision of community benefits, some developers also acknowledge that monetary funds are not always the most appropriate way to deliver community benefits and community funds are often combined with other benefit schemes.

Other funds: A similar but less common model is for the developer to pay in funds related to other purposes which benefit communities indirectly. These funds usually have a clearly defined purpose and are allocated to certain projects by a board of trustees or local authorities. For example, the developer of London Array established £200,000 for nature conservation purposes related to the siting of the substation, which is implemented by the Kent Wildlife Trust. Furthermore, Gwynt y Mor created a tourism fund in addition to its community fund which has been delivered in connection with construction activities. Both examples hint at a potential understanding of benefit as compensations (see figure 3).

Community Ownership: The community ownership model does not represent community benefits in a strict sense, as they are not necessarily based on the idea of voluntary community benefit arrangements. But community ownership opportunities can also be arranged voluntarily by developers as a goodwill gesture to involve local residents in sharing revenues from offshore renewables, and are therefore explicitly recognised as a form of community benefits in the draft consultation document on Good Practice Principles for Community Benefits from Offshore Renewables.¹³ However, benefits are generated through revenues for shareholders in correlation to the shares they hold. So beneficiaries can include individual investors or co-operatives (see for details Haggett et al. 2014)¹⁴. This has become an increasingly common procedure for onshore wind farms in the UK, but there is also some evidence from offshore renewables.

Equal distribution of revenues: We also found evidence of an equal distribution of benefits among a community or within a specific area. This approach is strongly linked to an understanding of beneficiary community which is not bound to a particular place that is somehow related to or affected by an offshore renewables development (see Figure 2). A beneficiary community is usually based on larger areas or numbers of communities within particular administrative

¹²Aitken, M. 2010, "Wind power and community benefits: Challenges and opportunities." *Energy Policy* 38, 10, pp. 6066-6075.

¹³The Scottish Government (2014): Good Practice Principles for Community Benefits from Offshore Renewables. Draft for Consultation, June 2014. (<http://www.scotland.gov.uk/Resource/0045/00454325.pdf>)

¹⁴Haggett, C., Aitken, M., Harnmeijer, J., Merkantoni, M., Rudolph, D. & B. van Veelen (2014): Supporting Community Investment in Commercial Renewable Energy Schemes, project for ClimateXChange

boundaries that should all receive equal shares of benefit supplies, or in more practical terms, equal access to benefit funds. In contrast to community funds to handle monetary payments, access to the equal distribution of benefits within certain administrative boundaries is not open to application. The distribution of benefits from renewables is instead often regulated by local or regional authorities that disseminate revenues to communities. Such equal distribution of benefits reflects an understanding of community benefits as sharing the benefits of the exploitation of natural resources and is grounded on goodwill and corporate social responsibility. This is especially true when considering the problem of increased spatial detachment of the offshore development from coastal communities. Conversely, it might also be considered to overlook local communities who feel somehow affected by a development, or potentially could even result in a discrepancy between benefitting and affected communities.

Direct Investments and project funding: Developers also invest directly in local projects and events. This model is usually based on one-off payments for a certain purpose. The key advantage of direct investments is that they can take immediate effect and be highly visible to local stakeholders. However, since in kind benefits are usually related to particular projects, they may only be tangible for a certain group of people, unless investments are directed to improvements of local infrastructures and facilities that benefit a wider community. Such direct investments and in kind benefits are often directed at improvements of local facilities and amenities, environmental advancements, but also at supporting charities and local groups through sponsorships. This model relates back to an understanding of communities as a host of onshore development and the developer as a good neighbour within a local community. We have discovered several examples where in kind benefits have been provided by developers and where direct investment made an impact (see section 5 of addendum).

Apprenticeships and studentships: Another increasingly common model is the provision of apprenticeships and studentships to local people. While apprenticeships often include a practical element at one of the developer's projects as part of the training programme, studentships consist solely of a financial contribution to training and education. Most programmes are aimed at a field and subject that is related to offshore wind farms and renewables, such as engineering, geology, biology or maths, in order to learn and acquire skills required for a career in the renewables industry. Educational schemes do not fully benefit a wider community, but directly support individuals or a selected group of people. However, wider community benefits can emerge from the long-term support to keep particular knowledge and skills in a region, and to promote employment. These educational programmes have mostly been developed on the initiative of the developers, but also in response to community demands. We identified several projects in the UK that provide studentships and apprenticeships.

Educational programmes: There are also wider educational programmes which typically include the involvement of local schools to address and learn about issues of climate change, sustainability and renewable energy. This may also include connections between the developer with particular schools or invited workshops at different schools. These initiatives aim to raise children's and

young people's awareness of climate change, environment and renewable energy, and to increase understandings of offshore renewables through presentations and workshops. Evidence for educational programmes comes from both offshore wind and tidal energy. Similar to apprenticeships and studentships, community benefits schemes through educational programmes do not bring immediate benefits to a local community, but are rather aimed at future generations by supporting the development of skills locally and by providing local jobs (see figure 4).

Electricity discounts: While offering local electricity discounts or rebates to adjacent communities has become an increasingly meaningful approach to reward communities for hosting onshore renewables, the only evidence we found for electricity discounts as an example of community benefits from offshore renewables is the proposed Tidal Lagoon Swansea Bay project. This project proposes a cheaper electricity scheme of local lagoon electricity tariffs through a partnership with Good Energy plc. This concept is based on a 20% cheaper tariff for households within a 2km radius of the substation, but it remains unclear how such a scheme will be practically implemented for this tidal project. Discount schemes cannot simply be arranged by developers, but have to be negotiated with the energy utility instead. Electricity discount schemes usually do not take the form of actual discounts for a household, but rebates and discounts of annual energy bills that are covered by payments of the developer to the energy supplier which are then deducted from the bill.

Community benefit agreements (CBA): Community benefit agreements have widely been adopted in other areas, and represent a contract between communities and developers that requires the developer to offer specific benefits or amenities to a local community. Such agreements formalise the relationship between a specific community and a developer, and set out what and how benefits are delivered. The terms of the agreement should be developed in consultation with the relevant communities. This benefit model can either be grounded on an interpretation of communities as being rewarded for hosting development or as being affected by particular developments (see figures 3 and 4). We identified two benefit schemes from offshore renewables that make use of community benefit agreements: The first scheme was introduced by the Highland Council in conjunction with their community benefit policy and includes a concordat setting out the relationship between developers and the council. The second example refers to the state of Massachusetts in the US, for which obligatory community benefit agreements have been introduced only recently.

Indirect benefits from the supply chain: We found that indirect benefits, not necessarily related to pro-active behaviour of goodwill of the developer, are also often referred to as community benefits. In particular, developers explicitly regard indirect benefits emerging from the wider supply chain for the construction of offshore renewables as a sort of community benefit. We found evidence for this conceptualisation of community benefits from UK and international case studies. However, a key difference between most case studies in the UK and international case studies, is that supply chain benefits are usually stressed in addition to voluntary benefit schemes in the UK, whereas indirect benefits have often been the only indication of benefits for many international

case studies. Indirect supply chain benefits usually take the form of job creation, regeneration of communities and the increased and lasting use of harbours for operation and maintenance purposes.

Indirect benefits through tourist facilities: Our research identified two different mechanisms of how offshore renewables can be associated with benefits from tourism. First, earlier offshore wind farms that are located comparatively close to the shore have often been declared as tourist hubs in their own right which are meant to attract visitors (e.g. Scroby Sands, Sheringham Shoal). Accordingly such projects have included visitor centres and there are also a number of companies who provide boat trips to offshore wind farms from the Port of Ramsgate. However, with increasing numbers of offshore wind farms their appeal as a novel technology has begun to wear off and as such their role as tourist attractions may be diminishing. Furthermore, the greater distance from the shore of more recent projects make offshore wind farms appear less prominent and may abate the need for presenting them as a tourist attraction. However, this understanding remains more significant for tidal projects that still represent a novel technology in many places. Evidence for planned and existing visitor centres for tidal energy projects to attract tourists comes from the Wyre Tidal Energy, Tidal Lagoon Swansea Bay (UK) and Sihwa Tidal Energy (South Korea) projects.

The second understanding that is particularly relevant for tidal projects is the use of the development itself as a tourist facility. The physical structure of tidal barrage arrays offers new and innovative places that can be used for various recreational purposes. Therefore, wider benefits of the Tidal Lagoon Swansea Bay project are supposed to emerge from its use as a “unique venue for opportunities in the arts, culture, education, recreation and conservation” and “a foundation venue for local and national sports use”. Other smaller tidal projects are also presented as an opportunity to promote further recreational activities such as angling, cycling and walking. The Sihwa project in South Korea was paralleled with the development of tourist resorts and business parks in the vicinity of the tidal scheme, even if the direct engagement of the developer in these projects remains rather unclear. However, while offshore renewables are often represented as a local economic driver because of the anticipated attraction to visitors, local stakeholders may also conceive industrial offshore developments as being intrusive and deterrent, and therefore detrimental to tourism (Rudolph 2014)¹⁵.

As noted above, an extended discussion of the different forms of community benefit identified through our research is provided in an addendum to this report.

¹⁵ Rudolph, D. (2014): ‘The resurgent conflict between offshore wind farms and tourism: Underlying Storylines, *Scottish Geographical Journal*, 130, 3, pp. 168-187.

Table: 1 Overview of benefit models:

Benefit model	Description of mechanism	Assets	Limitations	Examples
Community Funds	<ul style="list-style-type: none"> • Developers pay in to a particular fund arranged for an offshore development • There are different models of community funds that are either administered by developers, authorities or communities • Contributions are made on voluntary basis and provide constant flow of revenues • Mechanisms of funds are usually established in consultation with affected and benefiting communities • Usually annual payments corresponding with capacity of offshore wind farm • Most common in the UK for offshore wind farms • Funds for affected communities and regions or funds for communities in which developers operate • Access to fund can be regulated • Communities and community organisations can usually apply for project-funding from the fund 	<ul style="list-style-type: none"> • Easy for developer to arrange, only need to make payments • Possibility of administration of funds through community groups • Community can decide how and when funds are spent • Criteria can be set in consultation with communities • Democratic vote on how funds are spent possible 	<ul style="list-style-type: none"> • Access to funds can be restricted to particular groups • Usually individuals do not have access 	<ul style="list-style-type: none"> • Rhyl Flats Community Fund • North Hoyle Wind Farm Fund • Burbo Bank Extension Community Benefit Fund • Robin Rigg West Cumbria Fund • Teeside Offshore Community Benefit Fund • Sheringham Shoal Community Fund • Gwynt Y Mor Community Benefit Fund • Gwynt Y Mor Tourism Fund • London Array Community Benefit Fund • Dudgeon Community Support Fund • Triton Knoll Community Benefit Fund • Hornsea Community Fund • Eneco Lochterduinen Fonds, NL
Pre-existing funds	<ul style="list-style-type: none"> • Developers can also pay into existing funds that were not set up specifically for funds from offshore renewables • Such funds comprise regional development funds, nature preservation funds, wildlife trusts 	<ul style="list-style-type: none"> • Fund already operates with particular purposes • Developer only provides additional payments 	<ul style="list-style-type: none"> • Purpose can be limited 	<ul style="list-style-type: none"> • Leiston and Sizewell Community Benefit Fund (Greater Gabbard) • Kent Wildlife Trust (London Array)
Community Ownership	<ul style="list-style-type: none"> • Co-ownership through coastal communities, co-operatives or non-local energy utilities is very rare 	<ul style="list-style-type: none"> • Individual benefits for investors • No wider community 	<ul style="list-style-type: none"> • Local investors require up-front equity • No immediate benefits, 	<ul style="list-style-type: none"> • Denmark: Middelgrunden, Samso, (non-voluntarily) • Germany: Global Tech 1, Windreich • Netherlands: Westermeerwind

	<ul style="list-style-type: none"> • Benefits are generated through revenues from partial ownership of wind farm • Legal obligation of 20% ownership for nearshore wind farms in Denmark • Revenues generated through ownership are also administered by funds and trusts • Municipal utilities ownership and citizen participation possible in Germany (community buy-in) • Developer of Dutch Westermeerwind Offshore Windpark grants the possibility of community buy-in • 	<p>benefits, unless ownership by community organisation or co-op</p>	<p>revenues only generated during operation</p> <ul style="list-style-type: none"> • Costly for public investors 	
Equal Distribution of revenues	<ul style="list-style-type: none"> • Equal distribution of revenues generated from offshore renewables • Distribution is usually centrally managed by one authority • In place where offshore renewables generate non-specific revenues through charges by the state or communities • These revenues can be applied to benefit the wider society or specific communities • Tax income from offshore wind levied by federal states in Germany, as offshore area is not municipalised 	<ul style="list-style-type: none"> • Distribution does not necessarily involve much developer engagement • Whole area can benefit from revenues and payments 	<ul style="list-style-type: none"> • Management through local or regional authorities needed • Danger of affected communities missing out on benefits • Potential discrepancy between benefitting and affected communities • Requires systematic approach to how benefits are distributed 	<ul style="list-style-type: none"> • Highland Council, UK • Coastal Community Fund, UK • Germany
Direct Investments & Project Funding	<ul style="list-style-type: none"> • Developers can also make direct investments in or donations for local projects and sponsor local initiatives • Such one-off investments are usually made in addition to establishments of funds in order to boost particular branches of the local economy, e.g. 	<ul style="list-style-type: none"> • Tangible and immediate effects • Presence and trust-building of developer • Local involvement of developer is visible • Investments can be 	<ul style="list-style-type: none"> • Beneficial effects might be only temporary through one-off payments 	<ul style="list-style-type: none"> • Lynn and Inner Downsing • Lincs • Ormonde • Thanet • Scroby Sands • Sheringham Shoal • London Array

	<p>tourism</p> <ul style="list-style-type: none"> • Some developers (e.g. Centrica) also decided to invest in local projects instead of creating specific funds • Funding from offshore developers has gone into exhibitions, community & visitor centres, wildlife reserves, local education programmes, 	<p>negotiated with communities</p> <ul style="list-style-type: none"> • Investments can be made according to the local needs 		
Apprenticeships & Studentships	<ul style="list-style-type: none"> • There are a few benefit schemes that focus on education as well as skills and training by providing funding • Bursary schemes and studentships are regarded as a particular component of the community benefit fund 	<ul style="list-style-type: none"> • Skills and training to keep knowledge in local area 	<ul style="list-style-type: none"> • Fewer immediate local effects for communities • Benefits only for a few selected people • Needs to be organised in cooperation with education institutions 	<ul style="list-style-type: none"> • University Bursary Scheme (London Array) • Sheringham Shoal Bursary Scheme • AREVA pre-apprenticeship programme • East Anglia ONE Skills Strategy • RWE Gwynt y Mor Apprenticeships • Rampian (considered)
Educational Programmes	<ul style="list-style-type: none"> • Presentations and workshops in schools and colleges • Raising awareness of climate change, sustainability, environment and renewables • Encouraging and providing specific skills and knowledge for careers in the renewable energy sector 	<ul style="list-style-type: none"> • Useful for continuing dialogue with local communities • Awareness raising • Comparatively easy to establish and implement 	<ul style="list-style-type: none"> • Fewer immediate and tangible effects for communities 	<ul style="list-style-type: none"> • Sheringham Shoal • Hornsea • Tidal Lagoon Swansea Bay • Navitus Bay Offshore Wind Farm
Electricity Discounts	<ul style="list-style-type: none"> • There have been no electricity discount schemes from offshore renewables put in place so far • Only in place for onshore wind • Idea exists and was raised in context of the Walney Offshore Wind Farm, Tidal Lagoon Swansea Bay and a social acceptance study in Germany 	<ul style="list-style-type: none"> • Immediate, visible and tangible benefits for individuals • Can be annual one-off rebate or discount on a percentage basis • 	<ul style="list-style-type: none"> • Difficult to determine the area eligible for discounts • Needs to be coordinated with energy supplier which can be complicated for developer when dealing with more utilities • Complicated zoning of discounts may be required 	<ul style="list-style-type: none"> • Tidal Lagoon Swansea Bay (proposed)
Community benefit agreements	<ul style="list-style-type: none"> • Binding agreements between developers and local authorities or communities to deliver benefits • Can be non-binding policy from council 	<ul style="list-style-type: none"> • Requires early community engagement • Mutually beneficial • Can create a long-term 	<ul style="list-style-type: none"> • Could be seen as too restrictive • May limit the flexibility 	<ul style="list-style-type: none"> • Highland Council • Massachusetts, USA

	(Highland Council) <ul style="list-style-type: none"> • Can be material consideration of planning application (Massachusetts) 	dialogue between community and developer		
Indirect benefits from supply chain	<ul style="list-style-type: none"> • Community benefit-style compensation payments and indirect non-monetary benefits • Not necessarily community benefits, but some developers and authorities interpret them as such • Creation of jobs through regional supply chain involving local businesses and using local infrastructures • Some developers highlight the significance of indirect benefits in addition to community benefit arrangements while others only emphasise the role of indirect benefits 	<ul style="list-style-type: none"> • Developers can steer and prioritise the engagement of local businesses • Benefits are spread more widely 	<ul style="list-style-type: none"> • Less visible and noticeable at the local level • Benefits might only occur in the short-term and temporarily 	<ul style="list-style-type: none"> • Germany • UK
Indirect benefits through tourism	<ul style="list-style-type: none"> • Offshore renewables are regarded as a novel and innovative technology and as tourist attractions in their own right • Facilities as an attraction for tourists and also use for tourist activities (tidal barrages) 	<ul style="list-style-type: none"> • Can attract visitors and contribute to local economic development • Tangible effects 	<ul style="list-style-type: none"> • Understanding of offshore facilities as a tourist attraction can be questionable and become obsolete with a growing offshore industry 	<ul style="list-style-type: none"> • Tidal Lagoon Swansea Bay • Sheringham Shoal • Scroby Sands • La Rance Tidal Project, France • Sihwa Tidal Project, S. Korea • Wyre Tidal Energy

8. Community benefits from non-renewables

Given the novelty of community benefits from offshore renewables we also explored current practice relating to community benefits from non-renewables projects. However, there is little evidence of community benefits stemming from existing and established non-renewables offshore industries. The available evidence mostly relates to offshore oil and gas. The debates about benefits from offshore oil and gas industries revolve around benefits from the supply chain and compensatory measures of particular stakeholders. While supply chain benefits for coastal regions have become the key focus in many countries, compensation for particular groups, such as fishing communities, cannot be regarded as benefit sharing.

Rather than offering local benefits through direct payments and investments in a community, benefits from the offshore oil and gas industry flow into the regional economy through job creation, increased revenues for local businesses and community services. Indirect benefits for local communities emerge in the form of local purchases and services, employment and wages and tax revenues. Employment is considered as the biggest contribution of the offshore oil and gas industry to the local and regional economies, even if not all jobs are sourced locally. The consideration of community benefits around offshore oil and gas ranges from minimising social disruptions through the project deployment¹⁶ to social investments of the developer in areas they operate in, such as the support of programmes and initiatives that enhance the quality of life¹⁷. As a rare case, Shell offers grants to communities and individuals to benefit social services, community development and cohesion for communities related to their projects in Alaska.

A special mechanism for the provision of benefits has emerged from the North Sea oil and gas industry in Scotland. The arrival of the offshore industry sector in the early 1970s brought economic opportunities but also risks to the environment and way of life of communities on the Shetland Islands. Recognising these circumstances, Shetland Council asked the national government for special powers to negotiate the developments with the developers in order to protect traditional industries, preserve land and sea, and to share income from the oil industry. So the Shetland Council and the harbours gained control of the land and the sea to retain the revenues for the good of the Shetlands¹⁸. Statutory marine stewardship powers of the local authority allowed them lease the land to the developers and to impose conditions on how a development is operated. This model was later applied to the Orkneys as well. However,

¹⁶ Storey, K. & P. Jones (2003): Social impact assessment, impact management and follow-up: a case study of the construction of the Hibernia offshore platform. – *Impact Assessment and Project Appraisal*, 21 (2), pp. 99-107.

¹⁷ Shell (2011): Comprehensive Guide to Offshore Oil and Gas Development. Chapter 8 Offshore Development Benefits. (<http://s08.static-shell.com/content/dam/shell-new/local/country/usa/downloads/alaska/os101-ch8.pdf>)

¹⁸ Johnson, K., Kerr, S. & J. Side (2012): Accommodating wave and tidal energy – Control and decision in Scotland. – *Ocean and Coastal Management*, 65, pp. 26-33.

although this model enables the community to retain a share of profits and benefits, it cannot be regarded as voluntary benefit-sharing in the strictest sense. Furthermore, even if the justification of implementing such a policy may be similar for offshore renewables as they may also intervene with traditional industries, temporarily disrupt the local labour market and change the way of life, it cannot be easily translated to the present. There are technological and political differences between the offshore oil and renewables industries which make such a policy intervention less viable. Strong concerns about climate change, the need for subsidies, the increasing involvement of commercial private companies in the energy market, as compared to the oil industry in the 1970s, and market-based incentives and neoliberal agendas impede political interventions to regulate new offshore developments with regard to statutory conditions to retain control of community benefits¹⁹.

In addition, the large-scale development of emerging offshore technologies other than offshore wind is less advanced, which makes a reliable identification of community benefit arrangements from pioneering wave and tidal projects even more difficult. For example, there is also very little consideration of community benefits from emerging non-renewable offshore technologies, such as the transport and storage component of Carbon Capture and Storage (CCS). The evolving elaboration of research of not only the sub-seabed storage component of CCS seems to follow the same routes as the ones already taken for the wider examination of offshore wind farms, looking at various variables shaping public perceptions and social acceptance of CCS. Benefits discussed in this context have only included potential local economic effects for communities in terms of jobs and tax revenues, wider societal benefits regarding climate change mitigation²⁰ and host community compensations,^{21,22,23} but have not yet explicitly addressed potential community benefit arrangements.

¹⁹ Johnson, K., Kerr, S. J. Side (2013): Marine renewables and coastal communities – Experiences from the offshore oil industry in the 1970s and their relevance to marine renewables in the 2010s. – *Marine Policy* 38, pp. 491-499.

²⁰ Ashworth, P., Bradbury, J., Wade, S., Ynke Feenstra, C.F.J., Greenberg, S., Hund, G. & T. Mikunda (2012): What's in store. Lessons from implementing CCS, *Journal of Greenhouse Gas Control*, 9, pp. 402-409.

²¹ Ter Mors, E., Terwel, B.W., D.D.L. Daamen (2012): The potential of host community compensation in facility siting. *International Journal of Greenhouse Gas Control*, 11 (Supplement), pp. S130-S138.

²² Terwel, B.W., Koudenburg, F.A. & E. ter Mors (2014): Public Responses to Community Compensation. The Importance of Prior Consultations with Local Residents, *Journal of Community Compensation & Applied Social Psychology*, (DOI: 10.1002/casp.2186).

²³ Zaal, M.P., Terwel, B.W., ter Mors, E. & D.D.L. Daamen (2014): Monetary compensation can increase public support for the siting of hazardous facilities, *Journal of Environmental Psychology*, 37, pp. 21-30.

9. Challenges of providing offshore benefits

So far we have considered the ways in which communities and benefits are defined, and the different ways in which benefits are currently being delivered. In this section, we address some of the challenges and difficulties of providing benefits to communities.

9.1 Defining a community

In section 6 we considered various different definitions of communities; the most common of which is a geographical proximate community. However, the notion of a host community of an offshore wind farm cannot easily be determined in spatial terms. Our respondents stated that it is very difficult to define a beneficiary community, which can include nearest coastal communities, an adjacent region, the whole country, or affected marine users and stakeholders; and using an ‘equal distribution of national resources’ approach may lead to perceptions of an unfair balance of impact and benefit. Potential affectedness of communities and their eligibility for benefits cannot solely be explained through spatial determinants, and requires alternative and more innovative criteria for definition. This does not only provide some leeway for offshore developers for defining and demarcating beneficiaries, but also regarding the mechanisms of how benefit streams are established and distributed, and is also one of the reasons why most developers oppose a more standardised approach to community benefit. One respondent suggested that more general principles for community engagement are required when defining relevant communities, before being able to look at the more focused area of community benefits. This again indicates the underlying interconnection between the definition of community and the role of benefits.

9.2 Other forms of ‘benefit’

An issue about the appropriateness of community benefit schemes as a way to distribute the positive impacts of offshore renewables arose in our research. We found evidence of a conceptual division between indirect benefits and direct community benefit schemes that is employed to challenge the idea of the necessity of additional community benefits as opposed to inherent benefits of an emerging offshore renewables industry. For example, one developer challenged the idea of beneficiary communities by stating that the whole of Scotland can be seen as a profiteer of a growing offshore renewables industry benefitting from indirect mechanisms, such as job creation, supply chain benefits and tax revenues. Indeed, the use of certain harbours to maintain an offshore wind farm may be seen as a local benefit *per se* which brings jobs and other positive economic side-effects, and may therefore not necessarily entail direct community benefit streams.²⁴ Some developers were cautious about supporting community benefits because of the nascent state of the offshore industry (see below).

²⁴ This leads to the question to what extent indirect benefits may exclude direct community benefit streams.

9.3 Offshore renewables as a developing industry

The development of offshore renewables is still ongoing and any positive and negative consequences for communities are not fully understood; neither are economic opportunities through indirect ‘trickle down’ effects²⁵. Many respondents further pointed to the uncertain and risky financial circumstances of developing offshore renewables. The fundamental condition for the provision of benefits is that developers are able to finance them in addition to the costs related to material development of a project, which are significantly higher than for onshore wind farms. One respondent stressed that “how much is available for a community fund is very uncertain for some developers”. A key reason for this is the changing institutional framework for funding the development of offshore wind farms. Existing offshore wind farms could draw on two different regimes of funding, subsidies and electricity bills. The previous Renewables Obligations Certificates (ROC) system through which existing on- and offshore wind farms have been funded provided some certainty as to how much money is generated per unit of energy, how much income from the wind farm would be generated and how much could be spent on community benefits. This system was replaced and new offshore projects will require a ‘contract of difference’ for which companies compete to build a project at the lowest cost, whereby the UK government provides support for the cheapest project. As one developer commented during this research, such efforts by the UK Government to have wind farms built as cheap as possible to provide cheaper energy for consumers is feared to undermine the encouragement of community benefits. In turn, community benefits could also be regarded as being an impediment to a successful planning application. However, such a bidding scheme was also claimed by some respondents to prioritise bigger and financially more potent players that can afford to offer community benefits in addition to the uncertain project costs.

9.4 Wave and tidal energy

Tidal and wave projects are less advanced than offshore wind and not yet commercially viable in the UK. Some developers therefore argue that tidal projects need to be considered separately from offshore wind. Tidal projects that explicitly take community benefits into account comprise the Wyre Tidal Energy, West Islay, Sound of Islay, Swansea Bay, Solway Energy Gateway in the UK and Sihwa Tidal project in South Korea. However, since most tidal energy projects are still in the very early planning stages in the UK, current considerations of community benefits mostly include the exploration of appropriate approaches to enable community benefits from tidal energy projects, without any preferences towards particular models. One developer stressed that it might be more useful to focus on employment and the development of skills as a benefit at this stage, rather than enforcing monetary benefits that may financially harm projects and the development of a tidal energy industry.

²⁵ Kerr, S., Watts, L., Colton, J., Conway, F., Hull, A., Johnson, K., Jude, S., Kannen, A., MacDougall, S., McLachlan, C., Potts, T. & J. Vergunst (2014): Establishing an agenda for social studies research in marine renewable energy. – *Energy Policy* 67, pp. 694-702.

Recommendations for good practice

On the basis of our research, we make the following recommendations for good practice for the delivery of community benefits from offshore renewables:

- ***The current framework of non-restrictive guidance should be maintained to retain a high degree of flexibility for developers and communities:*** The willingness and the freedom of developers to provide benefits at their own discretion is the fundamental prerequisite for community benefits. This premise has been highlighted by all the developers to whom we have spoken in the UK. It is widely felt that developers should have the flexibility to develop community benefits in ways which are most appropriate for particular projects and local contexts. This is particularly salient given the uncertain and risky nature of offshore wind farms. However, more guidance on the available options is nevertheless desired.
- ***Developers and local authorities should clarify the meaning and limitations of community benefits when entering negotiations with relevant communities:*** This includes clarifying that community benefits are separate from compensation or mitigation measures and is essential in order to ensure fair expectations and to communicate what is possible to achieve and how it can be achieved. A reflection upon the interrelationship between all three dimensions (community, benefit, impacts) can provide a robust approach in developing community benefit models.
- ***Consideration should be given to the emerging state of the industry:*** The delivery of benefits may be highly dependent on the financial means of the developer. Financial security in terms of revenues from the offshore development is a vital condition for the provision of benefits. As discussed above, there is some concern that the new and competitive 'Contract for Difference' scheme may hamper the opportunity to provide voluntary community benefits and discourage developers to do so since competitive bidding leads to a focus on lowering costs and community benefits may not therefore be included unless they are required as part of the bidding scheme. However such a requirement would contravene the idea of voluntary distribution of community benefits and is not desired by most developers. Moreover, the Levy Control Framework, setting out the annual total subsidies for low-carbon technologies, may limit the number of successful offshore projects and the mere consideration of community benefits. Developers should therefore be urged to consider, reveal and discuss openly what is achievable in terms of community benefits, or justify what community demands are not possible when engaging local communities.
- ***The preparation of particular benefit models should be undertaken at the earliest possible stage:*** We found evidence of benefit models being prepared during planning stages and before final investment decisions have been made. Moreover, community funds can be set up and operationalised as soon as planning consent has been granted in order to provide evidence of the goodwill of the developer. As good practice, some

developers also arranged direct community investments at the planning and construction stages to create immediate gains for communities.

- ***The determination of potential beneficiary communities should be carried out in a joint process with local stakeholders:*** An initial assessment could either be grounded on the location of relevant onshore developments, such as the site of the substation, cable routes and operation and maintenance basis, or on the nearest coastal community. It is essential to avoid any discrepancies between potentially affected and benefitting communities, as this could be counter-productive to the merits of voluntary benefit sharing and the goodwill of the developers. Schemes for the equal distribution of benefits through funds provided to local and regional authorities or representatives of an area can be a useful option where the definition of adequate and relevant communities remains difficult. However, there is no single best way to identify beneficiary communities, as this is highly dependent on the local context, individual offshore projects and relevant onshore developments. Therefore, further guidance from the Scottish Government on identifying and engaging with communities around offshore renewables would be useful.
- ***Early community consultation should be undertaken regarding how community funds should be delivered and managed:*** This remains relevant even if the developer may not be involved in the operation of the fund. Setting up a community fund should be undertaken in collaboration with the relevant communities in order to determine appropriate mechanisms for managing and accessing the fund locally. Good practice demonstrates that the allocation and distribution of funds can be handled through applications from community groups or based on democratic votes of community members.
- ***Early and thorough engagement with local communities should be a first step for assessing the needs and concerns of communities, but also for discussing appropriate and desired benefit models:*** A crucial pre-condition for demarcating beneficiary communities is the assessment of interests, concerns and needs of communities. The consideration and negotiation of community benefit models could become a useful add-on of the compulsory community consultation process. However, this should still be considered separately from material considerations and detached from material assessments of the fulfilment of minimum community engagement obligations.
- ***Local authorities can play a useful role in linking the needs of communities with the willingness of developers to provide benefits:*** The involvement of local authorities should not be too restrictive by imposing benefit requirements. However, local authorities can play a role in building capacities by installing a point of contact for local communities and developers to provide some guidance on the delivery of community benefits.
- ***Communities should be supported to build capacity needed for maximising benefits:*** A prerequisite for both communities and developers to effectively make use of community benefits is to build capacities. While this refers to the financial capability

and willingness of developers, communities also require skills and knowledge about the possibilities available through different community benefits models. Some community groups therefore may require support to be made aware of local opportunities presented by offshore projects and to fully contribute to mutually fruitful debates about potential community benefits. Otherwise, the distribution of community benefits may become more accessible to those community groups that are more capable of and more experienced in dealing with developers.

- ***The choice of benefit models should remain open and flexible to achieve greater effectiveness in providing benefits:*** Keeping the process simple and being flexible and responsive to varying local interests is regarded to be key to a successful and effective delivery of benefits. There is no single approach that fits all projects, and community benefit schemes need to be tailored to the local context instead of being determined by standardised methods. The provision of benefits should therefore remain flexible and be based on the needs of the community and characteristics of the site and project, rather than prioritising one form of benefits from the beginning.
- ***Indirect benefits should be pursued as well as establishing direct community benefits:*** Developers should actively seek information on the availability of local resources and companies that can be employed in the supply chain for developing offshore renewables, as has been done by some developers that are open to be approached by interested local contractors. Emphasising and quantifying indirect benefits may also help embed the developer as a good neighbour within a community and area. Likewise, soft benefits without immediately tangible community effects, such as education-related programmes, can also help the developer to maintain a dialogue with communities beyond the construction stage and to leave a legacy, even if direct monetary streams are absent.

Addendum: Overview of benefit models and further case studies

1. Community Funds

The most common method for private sector renewable energy developers to provide benefits for communities are monetary payments to be paid into a fund for the use of a community. There are different ways of connecting an offshore project to monetary resources offered to a community, which mostly correlate with the size and scope of a development. Community funds can be linked to certain developments through payments in correlation with the capacity of the project, a larger lump sum payment when the project commences operation, or through a certain amount of money related to the revenues of the project. However, the amount of payments into a fund is always constrained by the sum that a project developer can afford to pay to local communities, which cannot be simply derived from the numbers referring to onshore renewables, as many developers emphasised. Therefore, good practice includes the early negotiations with local communities of what is possible in contrast to what is expected. This can be achieved with the help of a community liaison group. Community funds can differ in the way that they are managed, operated and distributed, however this is most commonly handled by community groups.

Payments usually start as soon as the project commences operation, but there are also schemes that earmark payments into funds during the planning and constructions stages. These early payments are often referred to as a good neighbour strategy related to preliminary assessments and capacity-building plans and can be seen as a specific way of engaging and building trust with local communities. Payments may either be made into a pre-existing community development fund or a fund that has been set up for the purpose of handling income from a particular offshore project.

Another question refers to the access to the community fund and, associated with this, the purpose of the fund. Although community funds are aimed to benefit a nominated community, there can be restrictions on the applicants, as well as the purpose of the fund. Theoretically, since the fund is for the benefit of the community as a whole, it is up to the community to determine the purpose of the fund and therefore to decide on what it regards as a benefit for the community. But this proves to be rather difficult due to the heterogeneity of views, attitudes and interests within a community. In order to fulfil the responsibility of supporting a whole community, rather than enriching individuals or particular groups, the purpose and access to a fund are often negotiated with representatives of a community, such as a board or trust established for the purpose of managing the fund, and the developer. We found evidence for both, a democratic decision-making process on what funds are spend as well as the determination of particular funding streams controlled by trustees.

Nevertheless, the terms, conditions and areas of a fund should be specified at the outset and before any money streams are launched, which simplifies the work of those who are entrusted with the management of the fund. As a good practice, the terms and agreements of a fund can be formalised

as a contract between the developer and a community group, which provides certainty for both parties.

Since community funds are the most common model for the provision of community benefits, there are a lot of different examples to draw on when outlining particularities of the delivery of benefits through community funds. But even if the provision of funds seems to be a welcome and straightforward approach that does not require much involvement of the developer, some developers also acknowledge that monetary funds are not always the most appropriate way to deliver community benefits. The following examples of good practice in delivering community funds are also combined with other benefit schemes.

The £300.000 London Array fund is administered by an independent trust, the Graveney & Goodnestone Trust, which was specifically formed to hold assets provided the London Array as part of its preparations for the construction of the sub-station. The trust is linked to the parish council of the same name and consults the council and other community organisations, but operates independently. The fund was set up under consultation of the local community and the parish council, and it was at their discretion to decide on how the money should be spent and allocated. The developer is no longer involved beyond paying into the fund, which creates more influence for the community on how funds are spent. The aim of the Trust is “to promote the benefit of the inhabitants of the parishes of Graveney with Goodnestone in the county of Kent [...] by associating the local authorities, voluntary organisations and inhabitants in a common effort to advance education and to provide facilities in the interest of social welfare, recreation and other leisure time occupation with the object of improving the conditions of life for the said inhabitants”. The community fund can be used for “projects and works that bring cultural, sporting, recreational, health, environmental, heritage, community safety, crime reduction, economic development or regeneration, or educational benefits to the local community”²⁶. Money from the fund is made available to accepted applicants who have to apply by using an application form, whereas private applicants are excluded in favour of community groups, organisations, clubs and charities. The geographical area within which funding can be used is the parish council area of Graveney and Goodnestone, but applicants do not have to be based in the council area as long as the application benefits the residents in the parish council. The trust also monitors how the funds are spent by the successful applicant.

The developer of the Sheringham Shoal offshore wind farm also highlighted that the wind farm should not be operated in isolation, and that developers should become an “integrated and valued member of the local community” and that the wind farm “would bring benefits beyond the general business activity”. In order to fulfil this ambition, a community fund was set up at an early project stage to facilitate the implementation of relevant projects and initiatives that will benefit stakeholders in Wells-next-the-Sea and surrounding villages. The fund is coordinated by the pre-existing Norfolk Community Foundation and provides grants to charities, community groups, parish

²⁶ The Graveney and Goodnestone Trust. Community Fund Grant Awards. Guidance Notes for Applicants. (<http://www.londonarray.com/downloads/grant-award-guidance-notes-Feb-2010.pdf>)

and town councils and educational institutions. Projects eligible for financial assistance from the fund should contribute to the wider sustainability of the area and meet prescribed criteria aimed at sustainable development. Application proposals are assessed and considered twice a year by the grant panel²⁷. So far the Sheringham Shoal Community Fund has invested around £280,000 in more than 30 projects²⁸. These included the refurbishment of a Coastwatch Institution, the funding of a lifesaving training programme of the North Norfolk Surf Life Saving Club, and the restoration, regeneration and transformation of a former malthouse into a new Heritage Centre.

Similar to this fund, the Leiston and Sizewell Community Benefit Fund donated by the Greater Gabbard developers is controlled by the independent Suffolk Community Foundations. This fund was established as “a thank you from the developers to the local community” for using the substation in Sizewell and is limited to six years²⁹. The fund is spatially confined to non-profit organisations, community groups and charities operating within the Town Council boundary or operating in favour of inhabitants of the council area. Moreover, maximum amounts and fixed criteria have been created to guide the scope of potential applications for funding³⁰. The same developer also established the North Hoyle and Rhyl Flats Offshore Wind Farm Funds. Both Funds are administered by the Denbighshire Coastal Partnership, but all applications made to the fund are considered locally by two community partnerships (Rhyl / Prestatyn and Melidan Community Partnership) operating in nearby community areas. Each community partnership consists of volunteers representing different local groups. The North Hoyle Fund is equally divided between the two community partnerships, whereas the Rhyl Flats Fund is fully allocated to and considered by the Rhyl community partnership. The Rhyl Flats Fund has also been beneficial to nearby wards in North Wales for match funding due to a partnership with the Community Cohesion Fund, funded by the Welsh Government, both of which use the same application form. Both funds provide a predefined amount of money for local communities throughout the lifetime of the wind farms, which is released through a larger number of smaller project grants^{31,32}. Other existing and proposed community funds related to the development of offshore wind farms in the UK that are similarly operated and confined to particular areas include Burbo Bank Extension Community Benefit Fund, Robin Rigg West Cumbria Fund Dudgeon Community Support Fund, Teeside Offshore Community Benefit Fund, Hornsea Community Fund, Triton Knoll Community Benefit Fund, Gwynt Y Mor Community Benefit Fund.

²⁷ Sheringham Shoal (2013): Funds for the Community. January 2013

(http://www.scira.co.uk/newsdownloads/Downloads/Community_fund_Fact_Sheet_12-12.pdf)

²⁸ Sheringham Shoal Community Fund (<http://scira.co.uk/community/content.php?ln=Community%20Fund>)

²⁹ East Anglian Daily Times (2013): Leiston/Sizewell: Community groups to get £150,000 from Greater Gabbard wind farm development, 12/07/2013

(http://www.eadt.co.uk/news/leiston_sizewell_community_groups_to_get_150_000_from_greater_gabbard_wind_farm_development_1_2274429)

³⁰ Suffolk Community Foundation. Leiston and Sizewell Community Benefit Fund. (<http://suffolkcf.org.uk/grants/leiston-and-sizewell-community-benefit-fund/>)

³¹ RWE Innogy. North Hoyle Community Fund. (<http://www.rwe.com/web/cms/en/311624/rwe-innogy/sites/wind-offshore/in-operation/north-hoyle/local-community/>)

³² RWE Innogy. Rhyl Flats Offshore Wind Farm Fund. (<http://www.rwe.com/web/cms/en/478728/rwe-innogy/sites/wind-offshore/in-operation/rhyl-flats/local-community/>)

A rare, but interesting international case study is the Luchterduinen offshore wind farm currently under construction off the Dutch coast. The developer Eneco created a Luchterduinen Fond in consultation with nearby municipalities, which will provide an annual payment of 45.000€. The objectives of the fund are the preservation and strengthening of the coastal experience in the nearby municipalities and the financial support of energy saving and renewable energy projects in the municipalities. Project support is limited to 30.000€ and the projects should be implemented within 2 years and 2 months after the grant has been given. Moreover, eligible projects are confined to the area of the pre-defined municipalities. In contrast to the governance of community funds in the UK, the distribution of the fund is regulated in a democratic process consisting of two steps. The fund is managed by the developer which creates a jury consisting of representatives of the developers Eneco and Mitsubishi. In the first stage the jury nominates and preselects proposed projects based on pre-defined fund criteria, originality and feasibility. The second phase includes a voting process by inhabitants of the four municipalities which results to a ranking of favourable proposals which will then be finally decided by the jury. The voting process will be undertaken through the project website which implies that anyone can vote, but residents of the four relevant municipalities will be explicitly encouraged to vote on the proposals through the local media. The fund will be paid out every two years with the first round of projects to be decided in early 2015³³. So, this case study stands out as the supported projects are selected by a democratic voting process, even if the final decision is made by the developer which regulates the whole process rather than the community.

2. Other funds

A similar but less common model is for the developer to pay into funds related to other purposes which benefit communities indirectly. These funds usually have a clearly defined purpose and are governed differently from community funds, as it is mostly not possible to apply for these funds. Funds are rather allocated to certain projects by a board of trustees or local authorities. So, providing such funds can also have immediate and tangible effects on the local community.

For example, the developer of London Array established £200.000 for nature conservation purposes related to the siting of the substation, which is implemented by the Kent Wildlife Trust. Furthermore, Gwynt y Mor created a tourism fund in addition to its community fund. Whilst the monetary streams to the community fund are coupled to the operation of the wind farm, the tourism fund has already been delivered as an additional contribution during the construction stage when the project has exhibited a high level of activity in the area. The tourism fund was governed in partnership with two local authorities and was not open to applications. Funds were rather made available for tourism projects which would not have been achievable without additional funding. So this fund was used to access match funding of £690.000 for five regionally significant tourism projects, including repairs at Llandudno Pier, a new ramp for disabled people to access Rhyl beach, improvements of the Rhyl

³³ Eneco Luchterduinen Fonds Website (<http://projecten.eneco.nl/eneco-luchterduinen-fonds/>)

harbour, linking tourist attractions in the region and building work to support the Llandudno Sailing Club to host National Championships.

3. Community Ownership

The community ownership model may not be fully understood as community benefits in a strict sense, as they are not necessarily based on the idea of voluntary community benefit arrangements. However, benefits through revenues from voluntary community investments are considered as such by the Scottish Government³⁴ and are therefore included in this study. In that model benefits are generated through revenues for shareholders in correlation to the shares they hold. So beneficiaries can include individual investors or co-operatives (see for details Aitken et al. 2014)³⁵. For example, in 2009 Denmark imposed an obligation for commercial developers to offer at least 20% ownership to local communities. This also applies to nearshore wind farms, and priority is given to individuals in a 4.5km radius around the wind turbines, hence employing spatial criteria for definition of beneficiary communities. Otherwise, people living in the wider municipality should be given the opportunity to buy the remainder of the 20% (Mendonca et al. 2009)³⁶. These regulations also determine how and when ownership shares should be offered. A particular green fund is available to support communities to cover up-front costs when participating in the ownership scheme. However, this model cannot be fully compared to voluntary community benefits, as commercial developers are legally obliged to offer community ownership shares.

In comparison to onshore wind, community ownership of offshore wind farms is less common in Germany. An early offshore project, the so-called citizen wind farm Butendieck, started by trying to replicate the success story of co-operative wind farms onshore (Byzio et al. 2005)³⁷, but was later sold to a commercial consortium of shareholders. Another particularity of the German offshore wind energy sector is the increasing share of municipal energy utilities in the development and ownership of offshore wind farms (Richter 2013)³⁸, which are not located in coastal areas. Interestingly, some of them justify their involvement in the offshore industry by supplying renewable energy to their communities and “to demonstrate ecological responsibility and innovative engagement” (Richter 2013:38).

In contrast to these examples, the provision of community ownership opportunities can also be arranged voluntarily by developers as a goodwill to involve local residents in sharing revenues from

³⁴The Scottish Government (2014): Good Practice Principles for Community Benefits from Offshore Renewables. Draft for Consultation, June 2014. (<http://www.scotland.gov.uk/Resource/0045/00454325.pdf>)

³⁵ Aitken, M., Hagget, C., Harnmeijer, J., Merkantoni, M., Rudolph, D. & B. van Veelen (2014): Supporting Community Investment in Commercial Renewable Energy Schemes.

³⁶ Mendonca, M., Lacey, S. & F. Hvelplund (2009): Stability, participation and transparency in renewable energy policy: Lesson from Denmark and the United States. – *Policy and Society* 27, pp. 379-398.

³⁷ Byzio, A., Mautz, R. & W. Rosenbaum (2005): *Energiewende in schwerer See? Konflikte um die Offshore-Windkraftnutzung*. Oekom. München.

³⁸ Richter, M. (2013): Business model innovation for sustainable energy: how German municipal utilities invest in offshore wind energy. – *International Journal of Technology Management*, 63 (1/2), pp. 24-50.

offshore renewables. This has become an increasingly common procedure for onshore wind farms in the UK, but there is also some evidence from offshore renewables. The 144MW Westermeerwind offshore wind farm in the Netherlands, which is the near-shore sub-project of the larger Noordoostpolder wind farm project that is currently being developed in the IJsselmeer, offers residents and farmers of nearby municipalities to financially participate in the project. These include the municipalities of Noordoostpolder, Lemsterland and Urk within whose borders the wind farm will be located. This intention originated from earlier plans of 32 inhabitants to develop a smaller community wind. In consultation and agreement with the municipality, these inhabitants are offered equity participation with a share of up to one megawatt per person^{39,40}. Interestingly, community buy in will be available in 2017, one year after it will have commenced operation. This strategy is meant to close the time gap between up-front investments and the flow of returns.

Moreover, the co-development of and investment in small-scale tidal projects through co-ops and local individuals in Nova Scotia, Canada, has been facilitated by a regional community feed-in-tariff scheme (COMFIT), which allows local stakeholders to financially participate in revenues from the projects.

A few developers, like Scottish Power Renewables, also explore the possibility of community ownership schemes for some of their projects. Likewise, the developer of the proposed Tidal Lagoon Swansea Bay project considers to offer a community ownership model for this project.

4. Equal distribution of revenues

In contrast to community benefits schemes that are directed to a particular group of stakeholders, community or individuals, we also found evidence for an equal distribution of benefits among a community or within a specific area. This approach is strongly linked to a particular understanding of beneficiary community which is not bound to a particular place that is somehow related to or affected by a particular offshore renewables development. So there is not necessarily a direct relationship between the offshore development and the beneficiary community. In this case, a beneficiary community is usually based on greater areas or a larger amount of communities within particular administrative boundaries that should all receive equal shares of benefit supplies, or in more practical terms, equal access to benefit funds.

We found three examples that make use of mechanisms based on a more or less equal distribution of benefits, which have also been outlined above. Firstly, there is the dissemination of tax revenues from offshore renewables companies in Germany. The business tax income from wind farms in Germany is usually split between the community within whose borders the wind farm is located (70%) and the community where the headquarters of the developer is situated (30%), which leaves

³⁹ Westermeerwind. Participate. (<http://www.westermeerwind.nl/participatie/>)

⁴⁰ Windpark Noordoostpolder. (<http://www.windkoepelnop.nl/wind-farm>)

some legal ambiguities to the taxation of offshore wind farms. This is because the offshore space of the EEZ (Exclusive Economic Zone) is not municipalised which constrains the legal activities of coastal communities in this area, and negates their right to levy business taxes. Since the federal constitution in Germany does not make any arrangements for the allocation of income from business trade taxes from the EEZ to particular communities, the coastal federal countries of Lower Saxony, Schleswig-Holstein and Mecklenburg-Vorpommern determine how taxes from offshore renewables are raised and distributed within their jurisdictions. Therefore, the allocation of tax revenues is at the discretion of the three coastal federal countries, which issued decrees as to how tax revenues are levied and handled⁴¹. In one scenario the small island community of Helgoland would be allocated the biggest deal of the tax revenues from the offshore wind industry in the North Sea, as the island is located closest to many wind farm sites in the EEZ⁴², and also accommodates operation and maintenance hubs. However, the authority of levying taxes from offshore renewables in the EEZ have not yet been fully settled and requires a legislative decision which takes the constitutional order of allocating business taxes to communities into account.

Secondly, the Highland Council in Scotland developed a non-binding policy on community benefits, which includes guidance on how benefits are distributed in order to consider coastal communities and the Highland Council area alike. With regard to offshore developments, 80% are supposed to accrue to a Pan Highland Level and 20% are supposed to accrue to a local coastal community level. While the Highland Council steers the allocation of benefits, communities can decide on how they would like to receive the benefits. However, the allocation criteria are determined by the council based on proximity to the development site, visual impact and number of residents in a council area in order to create equal conditions. Coastal communities are considered as communities that are situated in proximity zones around the offshore development. The benefits from the developer are distributed through the Highland Trust Fund and Local Coastal Community Funds, whereas the latter ones are arranged in consultation with local communities. So the funds are governed by local community organisations, such as trusts or agencies, in collaboration with the Highland Council in order to determine eligibility criteria, strategic directions and financeable community projects. Moreover, the council appoints a Gain Negotiator with whom the developer is expected to liaise⁴³. For developments in inshore waters, the Council aims to accrue benefits to coastal communities that are closely affected by developments, rationalising benefits with impacts again⁴⁴. While this policy provides an innovative approach to conceptualise the tricky distribution of benefits from offshore renewables, it must be kept in mind that it is non-binding and still subject to the willingness of the developer to provide benefits. Therefore, the rigorousness of the policy has also been criticised by some developers as it eradicates some flexibility of engaging with the local context, and thus

⁴¹ Markus, T. & A. Maurer (2012): Windenergie und Gewerbesteuer. Zur Lückenhaftigkeit des Rechts der Offshore-Windenergie-Besteuerung. – *Neue Zeitschrift für Verwaltungsrecht – Extra*, 10, pp. 1-10.

⁴² Die Zeit-Blog. Grüne Geschäfte. (23/07/2012) (<http://blog.zeit.de/gruenegeschaefte/2012/07/23/offshore-windparks-gerangel-um-die-gewerbesteuer/>)

⁴³ The Highland Council (2013): Guidance on the application of the Highland Council Community Benefit Policy for Communities and Developers of onshore and offshore renewable energy development. February 2013.

⁴⁴ The Highland Council (2014): Community benefit policy. 26/07/2014

hampering a dialogue with local communities and most of all because of commanding a fixed payment per MW⁴⁵.

The third example is the Coastal Communities Fund (CCF). The Coastal Community Fund (CCF) is a UK-wide programme that aims at the regeneration and economic development of coastal communities by awarding funding to various organisations, local authorities, social enterprises, cooperatives and community ownership initiatives, and charities. The CCF is delivered by the Big Lottery Fund on behalf of the UK Government, and funded through income from Crown Estate's marine assets. It is therefore also funded by revenues from offshore wind farms, tidal and other marine activities. Coastal communities can then bid for project funding from the CCF in order to develop and regenerate their community in various ways. The terms and conditions of the CCF define an eligible community as "any coastal settlement within a local authority area whose boundaries include UK foreshore, including local authorities whose boundaries only include estuarine foreshore", that comprise "seaside towns, ports and other areas which have a clear connection to the coastal economy" (Big Lottery Fund 2014:3)⁴⁶. So developers directly contribute to this fund for which any coastal communities can apply. Thus, beneficiary communities in this scheme are detached from offshore renewables that yield centrally managed funding. The only criterion in this definition that associates communities with offshore renewables is their coastal location. Even if the CCF is supported by offshore developers, there is no direct relationship between a particular development and a coastal community benefiting from the fund, which reflects key merits of benefit-sharing unrelated to any impacts. But since contributions to the fund are not voluntarily, the CCF cannot be simply considered as a mechanism of benefit sharing based on goodwill. Even more so, developers can even use their contributions to the CCF as an excuse for not being able to provide additional community benefits.

A equal distribution of benefits to a wider area or larger community which are not necessarily related to any particular developments or any affected communities can be regarded as an ultimate approach of benefit-sharing of the exploitation of natural resources grounded on goodwill and social corporate responsibility, especially when considering the problem of an increased detachment of the offshore development from coastal communities. But, in contrast, it might also neglect the consideration of local communities that feel somehow affected by a development, or might even result in a discrepancy between benefitting and affected communities. Moreover, the capability of the developer to engage with local communities would be minimised leading to an insufficient dialogue and lacking responses to local needs from the developer. The discussion of local requirements would only be undertaken between communities and authorities.

⁴⁵ Scottish Renewables' comments on The Highland Council's proposed community benefit policy (2012) 9 (http://www.scottishrenewables.com/media/uploads/120302_scottish_renewables_-_letter_to_highland_council_-_community_benefit_policy.pdf)

⁴⁶ Big Lottery Fund (2014): Coastal Community Fund. Round Three Help Notes.

5. Direct Investments and project funding

As opposed to funds that provide a constant monetary flow to communities upon whose use they can decide, developers also directly invest in local projects and events. This model is usually based on one-off payments for a certain purpose. The key advantage of direct investments is that they can take immediate effect and become noticeable for local stakeholders. But since in-kind benefits are usually related to particular projects, they may only be tangible for a certain group of people, unless investments are directed to improvements of local infrastructures and facilities that benefit a wider community. Depending on what direct investments are made, they can have short or long-term impacts.

But the realisation of in-kind benefits can perhaps also be cheaper and more straightforward for the developer than arranging community funds. Moreover, many communities usually have a list of what they intend to realise in their areas and direct investment can be arranged in line with these needs to achieve a direct impact. Nevertheless, direct investments are often only symbolically associated with a particular offshore project in the nearby area through sponsorship by the developer. Therefore, direct investments should also be made in consultation with local communities in order to explore local needs and desires, and the delivery may then involve a community body overseeing the investments.

Such direct investments and in-kind benefits are often directed to improvements of local facilities and amenities, environmental advancements, but also to the support of charities and local groups through sponsorships. We have discovered several examples where in-kind benefits have been provided by developers and where direct investment made an impact.

London Array has widely engaged with local communities in Kent to pull together several projects. London Array supported and sponsored a performative arts project, a local rugby club, a charity cycling race, public arts festival and a charity picnic. Direct investments during construction were also made to build a car park and new crossings for a primary school. London Array also funds the Heart of Community Awards in partnership with a local newspaper, which acknowledge charities and initiatives that serve the local community and that are nominated by locals. Furthermore, London Array also funded an archaeological research project in response to the necessary clearing of pillboxes during the onshore construction works. The developer of the Lincs Offshore wind farm and the two adjacent offshore wind farms of Lynn and Inner Dowsing, made a substantial financial contribution to the redevelopment of a visitor centre of Gibraltar Point National Nature Reserve, which attracts 180,000 visitors annually and helped to boost tourist numbers in the area. In addition to the redevelopment of the centre, the developer also invested in particular projects of the centre, sponsored several local initiatives in Skegness and funded the installation of the heating and hot water system of the community centre in Winthorpe⁴⁷. Vattenfall, the developer of the Ormonde offshore wind farm, sponsored several projects in the adjacent Barrow and Furness area, including

⁴⁷ Centrica Energy. Lynn and Inner Dowsing wind farm. Project background. (http://www.centrica.com/files/pdf/centrica_energy/lynn_and_inner_dowsing_background.pdf)

teacher training, bike races, golf clubs, charities, education projects which are mostly done in a partnership approach with local initiatives and organisations⁴⁸. The same developer operates the Thanet and Kentish Flats wind farm and is also present in these regions by sponsoring a fundraising bike race including an own cycling team to support the local community⁴⁹. E.on also sponsors the Great Yarmouth Maritime Festival and the annual Caister Lifeboat fireworks display related to the Scroby Sands wind farm. Triton Knoll developers will also consult local communities on community investment possibilities in January 2015, which comprise £500.000 during the construction of the wind farm and £40.000 awarded annually to neighbouring areas of the substation throughout the operational life of the wind farm⁵⁰. While this strategy reflects a good practice, the disproportional distribution of proposed investment again indicates a likely provision of benefits related to onshore impacts during the construction.

6. Apprenticeships & studentships

Another increasingly common model for disseminating benefits comprises the offer of apprenticeships and studentships to local people. Some developers offer particular education schemes for the benefit of younger people in a certain area. Such a scheme has to be coordinated with a particular education institution that delivers the tuition. While apprenticeships often include an additional practical element at one of the developer's projects as part of the training programme, studentships only involve a financial contribution to the training and education. So the developer can provide the funds as well as the training of the educational programme. Most programmes are aimed at fields and subjects that are related to offshore wind farms and renewables, such as engineering, geology, biology or maths, in order to learn and acquire skills required for a career in the renewables industry. Although educational schemes are often regarded as an important part of the community benefits, they do not fully benefit a wider community, but directly support individuals or a selected group of people instead. Wider community benefits can emerge from the long-term support to keep particular knowledge and skills in a region, and to promote employment. These educational programmes have mostly been developed on the initiative of the developers, but also in response to community demands.

We identified several projects in the UK that provide studentships and apprenticeships. RWE Innogy, the developer of Gwynt Y Mor, Rhyl Flats and North Hoyle offshore wind farms off Wales, designed a Wind Turbine Technician Apprenticeship scheme which includes class-based learning as well as hands-on experience alongside engineers. This has been the first wind farm related course of its kind

⁴⁸ Vattenfall (2012): Ormonde Offshore Wind Farm. Media Pack. (http://www.vattenfall.co.uk/en/ormonde-inauguration/file/120919_ormonde_press_pack.pdf_22363140.pdf)

⁴⁹ Kent Online (2013): Thanet Offshore wind farm and Kentish Flat operator Vattenfall is sponsoring the KM Big Bike Ride from Whitstake around Kent coast. (<http://www.kentonline.co.uk/thanet/news/wind-in-the-sails-of-14126/>)

⁵⁰ Skegness Standard (2014): Triton Knoll Offshore Wind Farm launches community consultation process, 17/09/2014 (<http://www.skegnessstandard.co.uk/news/business/business-news/triton-knoll-offshore-wind-farm-launches-community-consultation-process-1-6303576>)

in Wales and has recruited 16 apprentices for RWE and 4 more which were taken on by another Welsh company. Another example is the consented East Anglia ONE wind farm project, whose joint venture developers are about to develop a Skills Strategy model to be agreed with local authorities in 2015. The principles of this strategy are to promote employment, to use local and national education infrastructures, to balance the demand and supply of professional and vocational skills to support the project in the long term and to leave a legacy in the region. SPR also established a turbine technician course at Dumfries and Galloway College that allows students to gain specific industry recognised qualifications and that enables the wind industry to recruit technicians quicker.

Studentships and university bursary schemes are also considered and put in place by some developers. The developers of the Rampion Offshore wind farms considered an education and skills programme in response to consultations with the local community. In partnership with the Crown Estate and following a competition E.on funded students to study for an MSc in energy policy or climate change & development at the University of Sussex. Likewise, Scottish Power also developed an education and skills fund related to the proposed Argyll Array project in conjunction with the local community, which offered educational bursaries. There is also a university bursary fund established by London Array, which aims to award a £3000 bursary to a local student towards their tuition fees each year in a subject related sustainable development, science or engineering. This bursary schemes is planned to run for ten years and eligible students should come from schools of 15 miles around the sub-station⁵¹. Sheringham Shoal also introduced a bursary scheme to support 20 young people from low-income families each year to study engineering at one of the three colleges in Norfolk. The funding covers £500 for 20 students per annum⁵².

7. Educational programmes

There are also educational programmes that are not directed to the development of particular skills of selected people, but focus on a wider educational purpose for the society or a particular group of people. Such programmes usually include the involvement of local schools to address and learn about issues of climate change, sustainability and renewable energy. This may also include connections between the developer and particular schools or invited workshops at different schools. The fundamental idea is to make school children and younger people aware of climate change, environment and renewable energy, and to help students understand the interconnection between offshore renewables and certain branches of knowledge through presentations and workshops. Particular events related to educational programmes are usually funded, organised and held by developers, mostly in cooperation with local primary schools and colleges. Evidence for educational programmes comes from both offshore wind and tidal energy.

Smart Wind, the developer of the planned 4GW Hornsea Offshore Wind Farm, established a schools programme called Smart Futures that involves many schools in the Humber area, and is aimed at 13

⁵¹ London Array, University Bursary Scheme (<http://www.londonarray.com/community-2/bursary-scheme/>)

⁵² Sheringham Shoal. Bursary scheme for budding engineers. (http://www.scira.co.uk/news/news29_06_12.php)

and 14 year old pupils to raise awareness of science, technology, engineering and maths (STEM) subjects as a route for jobs and careers in the offshore renewables industry. The programme is delivered through a series of presentations, technical workshops and competitions in cooperation with the Humber Engineering Training Association. A schools engagement partnership has also been established between the Sheringham Shoal Offshore wind farm and a local high school to provide knowledge about the functionality of wind farms and the development of particular skills through presentations, workshops and practical exercises with engineers. The goal of this programme is also to encourage students to enter careers in the renewables industry and equip them with the skills and awareness that allow them to benefit in future. Furthermore, the Tidal Lagoon Swansea Bay (TLSB) project established a far-reaching educational programme that involves several organisations. A pilot primary school project with Cape Farewell, an artist-led organisation that instigates cultural responses to the climate challenge, delivered a series of workshops to raise awareness about climate change and renewable energy and included debates, trips, questionnaires, dance and art. Due to the success of the pilot project the TLSB was invited to visit further schools and to collaborate with educational initiatives and local authorities to expand the educational programme by including resources for lessons and educational plans on energy, the project, planning process and environmental impacts assessment. However, this also raised questions about the areas of education and subjects that should be prioritised by TLSB, and about the need for employees that facilitate the education programme. Therefore, an education officer was installed to introduce knowledge of climate change and ideas of sustainability and renewable energy in the classroom. But TLSB also seeks to establish partnerships with higher educational institutions to develop skills, training and employment schemes for the construction and operation of the project. Due to the initial success and ongoing commitments towards education, the developer also intends to note the continuing work with the educational sectors as part of the planning application^{53,54}. Also, the developers of the proposed Navitus Bay offshore wind farm created an education programme for pupils. This is run in collaboration with an independent energy education charity and makes use of interactive educational workshops that aim to teach pupils about climate change, energy efficiency and renewables, which have reached 500 pupils even before the project had been considered for planning application. Scottish Power Renewables also considers education programmes and school visits in relation to its projects in order to increase the awareness of real life applications of STEM subjects. London Array also awards £2000 grants to local schools each year, and organises educational events to give pupils some understanding of renewables and offshore wind.

Similar to apprenticeships and studentships, community benefits schemes through educational programmes do not bring immediate benefits to a local community, but are rather aimed at future generations by supporting the development of skills locally and by providing local jobs. Therefore,

pp.⁵³ TLSB (2014): Tidal Lagoon Swansea Bay's Cultural, Sports and Educational Programmes. A presentation and workshop.

(http://tidallagoon.opendebate.co.uk/files/TidalLagoon/20140122_Sport_Art_Education_Final_Summary_Notes.pdf)

⁵⁴ Shorrock, M. (2013): Benefits of Tidal Lagoon Swansea Bay

(http://tidallagoon.opendebate.co.uk/files/TidalLagoon/Benefits_of_Tidal_Lagoon_Swansea_Bay.pdf)

community investments are still made by the developers that engage with and maintain a dialogue with local communities, even if immediate benefits are not material and not as tangible as from other schemes.

8. Electricity discounts

While offering local electricity discounts or rebates to adjacent communities has become an increasingly meaningful approach to reward communities for hosting onshore renewables, we found no evidence of the existence of such schemes for offshore renewables. The electricity discounts model is often grounded on zoning around the renewable energy facility that tiers the degree to which a discount of energy bill of local residents is granted, which is not easily transferable to offshore developments. The only evidence we found for electricity discounts as an example of community benefits from offshore renewables is the proposed Tidal Lagoon Swansea Bay project. This project proposes a cheaper electricity scheme of local lagoon electricity tariffs through a partnership with Good Energy plc., which intends to follow a similar concept to the Delabole Wind Farm of the same energy company. This concept is based on a 20% cheaper tariff for households within a 2km radius of the substation, but it remains unclear how such a scheme will be practically implemented for this tidal project.

However, even if electricity discounts may be a convenient way for rising acceptance among local residents as they are available to and tangible for individuals (as opposed to community funds)⁵⁵, discount schemes cannot simply be arranged by developers, but have to be negotiated with the energy utility instead. The energy supplier is the actor that provides the energy to households near a development and that is affected by discounted electricity prices or rebates from the energy bills. Therefore, electricity discount schemes usually do not take the form of actual discounts for a household, but rebates and discounts of annual energy bills that are covered by payments of the developer to the energy supplier which are then deducted from the bill. Eligible households that wish to participate in an energy discount scheme usually have to register with the developer in order to be considered and benefit from the scheme. A significant example is the RES Local Energy Discount Scheme (LEDS) introduced for RES onshore wind farms of more than 5MW which includes a deduction of at least £100 off the energy bill for properties within an area that is demarcated through a set distance. This scheme is not bound to any particular energy utility. Another onshore example is the Auchrobert Wind Farm developed by Falck Renewables and Coriolis Energy which introduced a Local Resident Electricity Discount Scheme in cooperation with the supplier Green Energy UK, in addition to an energy fund and community ownership opportunities. This scheme is based on spatial zoning of a 10km radius around the wind farm, and included a 10% discount (10km) on the Green Energy UK tariff, a 200£/year rebate (4km) and a 400£/year discount (2km) in addition to the 10% discount. In contrast to the RES scheme, this deal is exclusively negotiated with Green

⁵⁵ “And while I'm at it, if this farm provides energy for so many households, how come people in the Furness peninsula & those impacted aren't receiving huge discounts off our electric bills? It's no good saying it'll be available in a fund for the community if the average person has no access to that fund.” Online comment to a newspaper article on the Walney offshore wind farm.

Energy UK and requires participating households to switch to this provider in order to benefit from the discount scheme. However, electricity discounts can easily be re-interpreted as bribing as the developer basically offsets and pays for discounted energy bills.

9. Community benefit agreements (CBA)

A more institutionalised and formalised approach to the delivery of community benefits involves community benefit agreements (CBA). Community benefit agreements have widely been adopted in other areas, and represent a contract between communities and developers that requires the developer to offer specific benefits or amenities to a local community. Such an agreement formalises the relationship between a specific community and a developer, and sets out what and how benefits are delivered. But the terms of the agreement should be developed in consultation with relevant communities. We identified two benefit schemes from offshore renewables that make use of community benefit agreements.

The first scheme was introduced by the Highland Council in conjunction with their community benefit policy. Firstly, it involves a concordat between the developer and the council through which developers agree to annually pay 5000£ per installed megawatt and the council agrees to provide the framework and infrastructure to receiving, managing and paying community benefits⁵⁶. Secondly, it can also consist of a community benefit agreement between a beneficiary community and a developer which agrees to provide a community fund. The council provides a template for such an agreement. However, even if these agreements may formalise a relationship, it is still the developer's decision to offer any community benefits. But if the developer agrees to commit to provide benefits, the council attempts to channel and direct the delivery of community benefits.

The second example refers to the state of Massachusetts in the U.S., for which obligatory community benefit agreements have been introduced only recently. This case study stands out as it is the only one we have identified that imposes legal conditions for community benefits from offshore wind. A Proposed Sales Notice for the upcoming auction round for the Massachusetts wind energy area released by the Bureau of Ocean Energy Management (BOEM) in June 2014 includes a 5% discount to those developers with a Community Benefit Agreement, which is meant to encourage developers to engage with local communities to negotiate community benefits. The proposed sales notice states that a community benefit agreement is a "legally binding contract between a bidder and one or more community based organizations (CBO) where the bidder has committed to provide specified community benefits and the CBO has committed in specific ways to support the project in the governmental approval process"⁵⁷. So it is a legal contract between an offshore developer and a community agreeing to support offshore developments in return for the developer providing some community benefits. While this agreement is rooted in a mutually beneficial relationship, the

⁵⁶ The Highland Council: Community Planning (http://www.highland.gov.uk/info/198/planning_-_long_term_and_area_policies/369/community_planning/2)

⁵⁷ BOEM (2014): Massachusetts Proposed Sales Notice (<http://www.boem.gov/BOEM-MA-Auction-Seminar-PSN-Overview-Presentation/>)

exchange of support for benefits could also be easily framed as bribing. However, an advantage for developers and bidders emerges from a 5% credit if holding a CBA. This credit “serves to supplement the amount of a cash bid proposal made by a particular bidder in each round”⁵⁸. As previously mentioned these institutional amendments were introduced because of pressure from local communities that have been lobbying for benefits and compensations for likely impacts for several years, among these is the Vineyard Power Co-op that seeks to develop an offshore wind farm off Martha’s Vineyard in collaboration with the developer OffshoreMW⁵⁹. Vineyard Power has signed an agreement with a commercial developer to ensure that jobs and infrastructures associated with the wind farm project stay in the local area⁶⁰. But despite the 5% credit to boost the project, some locals are still concerned that this threshold is not sufficient to make up for the expected impacts, and should therefore be raised to increase the competitiveness of the bid⁶¹.

10. Indirect benefits from the supply chain

Our research also found out that indirect benefits, which are not necessarily related to pro-active behaviour of goodwill of the developer, are also often referred to as community benefits. In particular, developers explicitly regard indirect benefits emerging from the wider supply chain for the construction of offshore renewables as some sort of community benefit. We found evidence for this conceptualisation of community benefits from UK and international case studies. However, a key difference between most case studies in the UK and international case studies is that supply chain benefits are usually stressed in addition to voluntary benefit schemes in the UK, whereas indirect benefits have often been the only indication of benefits for many international case studies.

Indirect benefits are usually framed by the creation of jobs, regeneration of communities through investments required for developing offshore projects and the increased and lasting use of harbours for operation and maintenance purposes which are all seen as being beneficial to the local economy. These benefits also correspond with the Scottish Government’s understanding of community benefits. Therefore, indirect benefits also comply with the stricter understanding of community benefits as voluntary measures to share wider economic benefits of Scotland’s natural asset in two regards. First, developers may voluntarily prioritise the engagement of local businesses in the supply chain related to the construction and maintenance of the offshore development. Second, indirect benefits of establishing an offshore renewables industry can also contribute to a boost of the national economy. This can also be understood as wider benefits of harnessing resources, even if these benefits may not be clearly visible for local communities, but benefit other communities on a

⁵⁸ Department of the Interior, Bureau of Ocean Energy Management (2014): Atlantic Wind Lease Sale 4 (ATLW4) Commercial Leasing for Wind Power on the Outer Continental Shelf Offshore Massachusetts—Proposed Sale Notice.

⁵⁹ Vineyard Power Co-op: Offshore Wind Power (<http://www.vineyardpower.com/offshore-wind>)

⁶⁰ Vineyard Gazette (2014): At five year mark, Vineyard Power gains foothold in alternative energy race, 04/08/2014 (<http://vineyardgazette.com/news/2014/08/04/five-year-mark-vineyard-power-gains-foothold-alternative-energy-race?k=v546f075b75a5a&r=1>)

⁶¹ MV Times (2014): Islanders question local benefits of offshore wind project leases. 25/06/2014 (<http://www.mvtimes.com/2014/06/25/islanders-question-local-benefits-offshore-wind-project-leases/>)

regional or national scale instead. One respondent also emphasised the significance of indirect economic benefits over the provision of direct payments to communities. However, indirect local benefits may only be noticeable temporarily and in the short term during the construction of an offshore development when supply services are required the most.

A good example that actively considers the development of an offshore wind farm using advantages of the local supply chain is the Neart na Gaoithe wind farm project in Scotland, whose developer provides the opportunity for companies to register as an interested supplier if to be considered as a supplier for the Neart na Gaoithe project. The same approach is taken by the proposed East Anglia ONE and Navitus Bay offshore wind farms. The latter one is particularly committed to a local, regional and UK supply chain for all parts of the lifecycle of the project in form of contracts with local businesses and job creation. Other projects that explicitly point to the possibility of creating long term and sustainable jobs in construction, operation and supply chain, either in addition to or instead of direct community benefit streams, include the Dublin Array, London Array, Thanet Offshore Wind Farm, Tidal Lagoon Swansea Bay and Rampion Offshore Wind Farm. However, existing examples show that the extent to which the local and UK supply chain have been involved varies considerably between different projects. Rampion and London Array off the English coast, and Inch Cape, Statoil Hywind and Moray Offshore Renewables Ltd. in Scotland held and will hold ‘meet the buyer’ events where contracts can be made and to ensure that local suppliers and contractors are made aware of opportunities. For the Rampion project, the developer conducted an in-depth analysis to identify types and services that are needed for the building process and identified hundreds of local businesses that could provide these services. Moreover, they ran several events and workshops to raise awareness of opportunities to improve the chances of businesses for the competitive bids⁶². London Array also sponsored a website where local contractors can look for suppliers themselves.

Another important interpretation of indirect benefits refers to the connection to particular harbours that are used for maintenance and operation purposes and therefore profiting for a longer period over the lifespan of the offshore projects. The use of appropriate harbours presents a key criterion for the developers for a successful and straightforward construction and operation of an offshore renewable development, and reflects an area where developers expect positive effects for communities. The formal relationship between an offshore project and a harbour is usually established through agreements confirming the use of the harbour and setting out criteria of this use. These criteria often include modifications of the harbour that necessary for particular wind farm work vessels and regulations to avoid interferences with daily and established port operations. For example, Sheringham Shoal Wind Farm has an agreement with the Wells-next-the-Sea harbour to use the harbour as a hub for 50 years, which is supposed to ensure “a viable future for the port and provide employment and other economic and social benefits to the area, whilst safeguarding its

⁶² E-on (2013): Rampion Offshore Wind Farm, Newsletter, Issue 3, April 2013. (https://eon-uk.com/downloads/1304_Rampion_Newsletter_%28Final%29_pdf.pdf)

unique character and charm”⁶³. Likewise, the Port of Ramsgate is used as the operational basis for the Thanet and London Array Offshore wind farms, as it provides port related services that are required for supporting the construction and the ongoing operation and maintenance. The port is regarded to be in a position to bring together expertise and knowledge of a diverse team of people that is required for the development of offshore wind farms. And bringing these services to the area also offers “opportunities for jobs, skills, and training helping the local economy”.⁶⁴ SSE Renewable have announced that they will use Wick harbour as a development, operation and maintenance base for the Beatrice offshore wind field, which is anticipated to create hundreds of highly skilled jobs.⁶⁵ The same prospects are anticipated for the harbour used as a hub for the planned Navitus Bay Offshore Wind Farm, which could create hundreds of jobs that would “give a career to lots of young people locally”⁶⁶. But the use of harbours is also contested and may involve competitions between the different options offered to a developer.

One developer to which we have spoken explicitly highlighted local supply chain benefits as an alternative to direct but financially uncertain community benefit streams. Other countries, such as Germany and Sweden, rather highlight the significance of regional and national supply chain benefits for the overall economy, while actual community benefit schemes are not considered. In contrast to those who highlight the indirect economic benefits as a key asset of the developing offshore renewables sector, one community representative questioned this interpretation by emphasising the case that not all necessary support services and required skills may be available locally. Also the lack of adequate infrastructures might make it “difficult for local communities to benefit as much as you hope in terms of employment creation locally.” This understanding rather points to the need to additional measures to make coastal communities benefit from offshore developments or to enhancements and adjustments of local infrastructures to maximise the benefit for the local community.

11. Indirect benefits through tourist facilities

Our research also identified two different mechanism of how offshore renewables can be associated with benefits from tourism. First, earlier offshore wind farms that are located comparatively close to the shore have often been declared as tourist hubs in their own right which are meant to attract visitors (e.g. Scroby Sands, Sheringham Shoal). The practical implementation of this understanding was often accompanied by the building of visitor centres for educational purposes, for people to learn about the particular project and the merits of offshore wind energy in general. A number of companies also provide boat trips to the Thanet and London Array offshore wind farms from the Port

⁶³ Sheringham Shoal. Wells-next-the Sea. (<http://www.scira.co.uk/operations/wells-next-the-sea.php>)

⁶⁴ Port of Ramsgate. Wind Farms (<http://portoframsgate.co.uk/exciting-developments/wind-farms/>)

⁶⁵ The Scotsman (2014): Nerve centre for wind farm project in Highland. 31 July 2014 (<http://www.scotsman.com/news/environment/nerve-centre-for-wind-farm-project-in-highlands-1-3493811>)

⁶⁶ BBC News (2014): Navitus Bay: ‘worth £10m’ to Yarmouth harbour. 9 Sept. 2014 (<http://www.bbc.co.uk/news/uk-england-29123629>)

of Ramsgate, which further contributes to the interpretation of wind farms as a tourist attraction. However, with growing numbers of projects, offshore wind farms have become increasingly established and represent a decreasingly original technology, and the notion of a tourist attraction has also become less meaningful. Furthermore, the greater distance of later projects from the shore make offshore wind farms appear less prominent and abate the need of presenting them as a tourist attraction. However, this understanding remains more significant for tidal projects that still represent a novel technology in many places. Evidence for planned and existing visitor centres for tidal energy projects to attract tourists comes from the Wyre Tidal Energy, Tidal Lagoon Swansea Bay (UK) and Sihwa Tidal Energy (South Korea) projects. The Sihwa Lake Tidal Power Plant, the world largest tidal power station, includes an observation platform, exhibition pavilion and wetland park to attract visitors who can learn about the project and for ecological education⁶⁷. Many of these proposed projects draw on the famous La Rance tidal project in France as a promising example which has attracted 350.000 visitors each year (Hooper & Austen 2013)⁶⁸.

The second understanding that rather applies to tidal projects is the use of the development itself as a tourist facility. The physical structure of tidal barrage arrays offers new and innovative places that can be used for various recreational purposes. Therefore, wider benefits of the Tidal Lagoon Swansea Bay project are supposed to emerge from its use as a “unique venue for opportunities in the arts, culture, education, recreation and conservation” and “a foundation venue for local and national sports use”, which turn the renewable energy project in a cornerstone development of for Swansea Bay stimulating a vibrant waterfront economy. Other smaller tidal projects are also presented as an opportunity to promote further recreational activities such as angling, cycling and walking. In response to local consultations and in order to create new jobs, improve people’s quality of life and to share the burdens of the project, the Sihwa Tidal Plant in South Korea was paralleled with the development of a leisure complex, green spaces, new infrastructures and business parks (green city Songsan) on the reclaimed tidelands and in the vicinity of the tidal scheme⁶⁹, even if the direct engagement of the developer in these projects remains rather blurry.

However, while offshore renewables are often represented as a local economic driver because of the anticipated attraction to visitors, local stakeholders may also conceive industrial offshore developments as being intrusive and deterrent, and therefore detrimental to tourism (Rudolph 2014)⁷⁰

⁶⁷ Local Governments for Sustainability (2014): Greening Korea’s western coast and beyond. 20/04/2014 (<http://eastasia.iclei.org/archivedetails/article/greening-koreas-western-coast-and-beyond.html>)

⁶⁸ Hooper, T. & M. Austen (2013): Tidal barrages in the UK: Ecological and social impacts, potential mitigation, and tools to support barrage planning. – *Renewable and Sustainable Energy Reviews* 23, pp.289-298.

⁶⁹ Sihwa District Sustainable Development Council (2006): Residents conference results (<http://blog.daum.net/n3153690/8668443>)

⁷⁰ Rudolph, D. (2014): ‘The resurgent conflict between offshore wind farms and tourism: Underlying Storylines, *Scottish Geographical Journal*, 130, 3, pp. 168-187.

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