

# Baseline Report on Community Benefit and Shared Revenue from Onshore Wind Projects to Communities in the South of Scotland

## **Final Report**



October 2023



## Contents

Executive Summary		1
1.	Introduction	2
2.	Existing Capacity	4
3.	Community Benefits	8
4.	Future Potential	14
5.	Adherence to Good Practice	21
6.	Evolving Good Practice	30
7.	Conclusions	35



## **Executive Summary**

Over the next 35 years the total value of community benefit funding across the South of Scotland could amount to nearly £900 million, nearly 30 times as much as has been generated to 2023.

Since 1996 onshore wind farms have generated around £30.9 million in community benefit funding for communities in the south of Scotland.

In 2022, the Scottish Government set a target for Scotland to have at least 20 GW of installed onshore wind capacity by 2030<sup>1</sup>, more than double the 2022 capacity. Based on what is known about operational and planned wind farms in the South of Scotland, it is estimated that around 4.6 GW of this could be generated in the area.

Improvements in turbine technology mean that this increase in generating capacity would not be replicated in the number of turbines.

It is estimated that by 2033 wind farms in the South of Scotland could be generating £12 million per year in community benefit funding. By 2058 this could increase to nearly £70 million per year. The cumulative value of this over the next 35 years could be nearly £900 million, 30 times as much as the total value of community benefit funding received up to 2023.

An opportunity of this magnitude could be transformative for the region, equivalent to more than six Borderlands Deals. However, it is not guaranteed. The scale of future funding available will depend on the extent to which developers offer at least the £5,000 per MW per year recommended by the Scottish Government.

In 2022 the average value of community benefit funds associated with operational wind farms was £2,537 while the equivalent figure for planned wind farms was £3,986. While adherence to the Government's £5,000 per MW per year recommendation is not yet universal, performance is improving. There is also evidence to suggest that wide-spread acceptance of more general good practice principles (although there is room for improvement, particularly on generating a lasting legacy and community planning).

The next phase of Scotland's onshore wind journey could be transformative for the South of Scotland. Recent experience provides valuable learning opportunities that could help to maximise the impact of anticipated funding. This report highlights some of the important questions that will need to be addressed to do this.

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<sup>&</sup>lt;sup>1</sup> Scottish Government (December 2022), Onshore Wind: Policy Statement 2022

Baseline Report on Community Benefit and Shared Revenue from Onshore Wind Projects to Communities in the South of Scotland



1.

## Introduction

BiGGAR Economics was commissioned by South of Scotland Enterprise (SOSE) to construct a baseline of community benefit and shared revenue arrangements for onshore wind projects in the South of Scotland. This report presents the findings.

On-shore wind will make an important contribution to Scotland's energy transition over the coming decades. It also has the potential to play a major role in driving social and economic change. In parts of Scotland blessed with a substantial wind resource, the impact of this could be transformative.

The South of Scotland currently accounts for a little more than a fifth (21%) of Scotland's total installed onshore wind capacity. These projects are an important driver of economic value across the region because of the economic activity stimulated during construction and operation and the direct financial contributions many developers make to their host communities.

A 2022 policy statement<sup>2</sup> by the Scottish Government set a new ambition for Scotland to achieve a minimum of 20 GW of installed onshore wind generating capacity by 2030. If the pattern of future deployment reflects historic trends this would equate to approximately 4 GW in the South of Scotland, more than double the current level. This is a major economic opportunity for the region.

## 1.1 Study Scope and Objectives

The purpose of this study is to provide SOSE with an evidence base for understanding the scale and nature of community benefit and shared revenue arrangements in the South of Scotland, now and in the future. While the wider economic benefits generated by the sector are recognised, they are outwith the scope of this exercise and not explicitly considered within the report.

It is envisaged that this initial baseline exercise could be used to inform a subsequent phase of work to explore how the scale and efficacy of community benefit and shared revenue agreements could be enhanced to deliver a lasting, positive socio-economic and environmental legacy for the region.

An evidence data set has also been produced to accompany this report. It is intended that the data set will help support the development of appropriate interventions to maximise the economic and social benefits of this funding.

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<sup>2</sup> Scottish Government (2022), Onshore Wind Policy Statement



### **1.2 Approach**

The starting point for the analysis was the database on community funds held by Local Energy Scotland (LES), a consortium of public bodies responsible for administering the Scottish Government's Community and Renewable Energy Scheme (CARES). CARES supports communities to engage with, participate in, and benefit from the transition to net zero emissions.

Additional research was undertaken by BiGGAR Economics to check some of the details in the LES database and fill some of the gaps. This included checking the information held on wind farms against DESNZ's REPD and drawing on publicly available information about wind farm sites in the South of Scotland. This was informed by BiGGAR Economics knowledge of the sector in the South of Scotland gained from previous experience of working on wind farm projects in the area.

Further desk-based analysis was then undertaken to test this information and fill the remaining gaps. This drew on a wide-ranging review of publicly available information from websites associated with individual developments.

The analysis was supplemented by a limited consultation programme involving wind farm developers, community groups, public agencies, and community intermediaries. BiGGAR Economics is very grateful to the individuals who participated in this exercise for the invaluable insight they provided.

The remainder of this report is structured as follows...

- section 2 describes the development of the onshore wind sector in the South of Scotland and quantifies the current level of installed capacity;
- section 3 quantifies the scale of community benefit funding currently available to communities in the South of Scotland and analyses how it is distributed;
- section 4 quantifies the future expected value of community benefit funding associated with planned wind farm development across the region and the potential opportunities arising from any future site repowering;
- section 5 considers the extent to which the wind farm developers operating (and hoping to operate) in the South of Scotland are adhering to good practice principles in the application of community benefit arrangements;
- section 6 reflects on Scotland's evolving approach to community benefit from on-shore wind and highlights some exemplars of innovative good practice that could provide useful learning opportunities; and
- section 7 presents the conclusions of the analysis and highlights some important questions that will need to be addressed if future benefits to communities are to be maximised.



# **Existing Capacity**

In 2022, there were 850 installed wind turbines in the South of Scotland with a total installed capacity of 1,891 MW, a little over a fifth of the Scottish total.

## 2.1 Onshore Wind in Scotland

The first onshore wind farms in Scotland date from the mid-1990s. There was steady growth in the early 2000s and then that growth accelerated in the 2010s. Between 2009 and 2019, the total installed capacity in Scotland increased from 1,753 megawatts (MW) to 7,969 MW, an almost 5-fold increase (Figure 2-1).

Whilst the sector continued to grow, the rate of growth slowed at the turn of the decade, as the consequences of the 2015 UK Government policy change that excluded onshore wind from the Renewables Obligation system fed through to fewer projects implemented a few years later.



### Figure 2-1: Onshore Wind Capacity in Scotland

Source: BiGGAR Economic Analysis of Data from Department for Energy Security and Net Zero Renewable Energy (DESNZ) Renewable Energy Planning Database (REPD) and Scottish Renewables

By the end of 2022, the installed capacity in Scotland had increased to 8,845 MW (or 8.8 Gigawatts, GW).



More recently the sector has shown signs of renewed growth with an increase in projects being scoped and in the consenting process. The drivers of this growth include:

- UK Government policy support, including indications that onshore wind projects will be eligible to apply for future Contracts for Difference auctions (the mechanism for sharing future energy market price risks);
- Scottish Government policy support, including a stated aspiration for growth in onshore wind capacity and increased planning support in the Fourth National Planning Framework (NPF4);
- the developing market for renewable energy including opportunities for a route to market using Power Purchase Agreements (a mechanism for direct sale of electricity produced, often to a single user);
- increased investor interest in renewable energy projects, following Russia's invasion of Ukraine and the consequences for global oil and gas prices; and
- technology developments, including the availability of wind turbines with greater generating capacity, allowing for generation costs that can compete with other forms of electricity generation.

### 2.2 Onshore Wind in the South of Scotland

One of the first onshore wind farms in Scotland is located in Dumfries and Galloway. Windy Standard (also known as Brochloch Rig), a 36 turbine, 21.6 MW wind farm started generating electricity in 1996.

The installed capacity in the sector has grown substantially since then, particularly during the 2010s. By the end of 2022, there were 52 operational wind farms in the South of Scotland listed in DESNZ's REPD. (These include some extensions to wind farms and so there are fewer than 52 wind farm sites.) Some smaller wind turbines, such as those supplying residential premises, farms and small commercial users will also be excluded from this number.

At the end of 2022, there were 850 installed wind turbines in the South of Scotland (Figure 2-2) with a total installed capacity of 1,891 MW<sup>3</sup> (Figure 2-3). Dumfries and Galloway accounted for 1,081 MW of this capacity, 57% of the total for the South of Scotland.

<sup>&</sup>lt;sup>3</sup> This figure describes the total installed capacity of wind farms in the South of Scotland and does not include sites outwith the area (such as Glen App and Clyde wind farms)

Baseline Report on Community Benefit and Shared Revenue from Onshore Wind Projects to Communities in the South of Scotland







Source: BiGGAR Economic Analysis of Data from DESNZ REPD

### Figure 2-3: Onshore Installed Capacity in South of Scotland (MW)



Source: BiGGAR Economic Analysis of Data from DESNZ REPD



The South of Scotland accounts for more than a fifth (21%) of Scotland's total installed onshore wind capacity (Figure 2-4).

To put this in some context, the South of Scotland has a total population of 264,370 (5% of Scotland's total) and covers an area of 11,158 km<sup>2</sup> (14% of Scotland's total land mass)4.

That the South of Scotland would have a greater proportion of Scotland's onshore wind than its population or land mass share is as would be expected, given that it has both the wind resource in the upland areas (as does the Highlands and Islands) and opportunities for good grid connections, given its location between the population centres of the Scottish central belt and the cities of the North of England.

The question that arises is whether the South of Scotland is benefiting to the full extent that it could, including from community benefit and shared revenue opportunities.



#### Figure 2-4: Installed Capacity Onshore Wind, Scotland, 2022

Source: BiGGAR Economic Analysis of Data from DESNZ REPD and Scottish Renewables

<sup>&</sup>lt;sup>4</sup> South of Scotland Regional Economic Strategy (July 2021), Technical Paper: Regional Economic Strategy - Inclusive Growth Evidence Base

Baseline Report on Community Benefit and Shared Revenue from Onshore Wind Projects to Communities in the South of Scotland



# **Community Benefits**

In 2022 onshore wind farms provided £4.3 million in community benefit funding to communities in the South of Scotland. The total value of funding provided since 1996 was over £30.9 million.

Community benefit funds are voluntary arrangements offered by renewable energy developers to communities located near developments. They typically provide a fixed sum related to the scale of the wind farm and paid as a fixed rate per MW per year<sup>5</sup>. The analysis in this chapter quantifies the value of community benefit associated with the 52 wind farms operating in the South of Scotland in 2022.

The starting point for the analysis was the database on community funds held by Local Energy Scotland (LES), a consortium of public bodies responsible for administering the Scottish Government's Community and Renewable Energy Scheme (CARES). This information was then cross-checked with information from the Department for Energy Security and Net Zero's (DESNZ) Renewable Energy Planning Database. Remaining data gaps were filled using desk-based research and publicly available information known to BiGGAR Economics based on our previous experience working with developers in the South of Scotland.

## **3.1 Value of Community Benefit Funding**

Analysis of the community benefit funds associated with wind farms in the South of Scotland found that in 2022, the total annual funding available was £4.1 million based on 1,621 MW<sup>6</sup> of installed capacity.

The value of Community benefit funding available in the South of Scotland has increased substantially in recent years, particularly since 2016 when the annual funding provided was £1.8 million (Figure 3-1).

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 <sup>&</sup>lt;sup>5</sup> For example if a 10 MW wind farm commits £5,000 per MW per year for the 25 year lifetime of the wind farm, that would be a commitment to provide £50,000 per year, £1.25 million over 25 years.
<sup>6</sup> This figure refers to the total installed capacity of all the wind farms within the South of Scotland that offer funds and does not include funding from Glen App or Clyde wind farms, which are outwith the area.





#### Figure 3-1: Annual Community Benefit Funding Available

Source: BiGGAR Economic Analysis

#### 3.1.1 Accounting for Cross Border Flows

Some of the wind farms considered in this analysis are close to or straddle the boundaries between the two south of Scotland local authorities and adjacent authorities and provide community benefit funding to communities in both areas<sup>7</sup>. This means that some funding from wind farms in the south of Scotland goes to communities outside the area. For those developments where this is known to be the case appropriate adjustments have been made to account for cross-border funding flows based on publicly available information on the funding distribution associated with individual developments. These adjustments are reflected in the figures above.

In addition to the funding available from wind farms located either fully or partly in the South of Scotland, there are some further projects just outside of the region that provide Community benefit funding to South of Scotland communities. These include the Clyde Wind Farm in South Lanarkshire and Glen App Wind Farm in South Ayrshire, which together contribute c.£0.3 million per year to South of Scotland community benefit funding alongside the funding available from community benefit funds for wind farms located in the South of Scotland brings the total annual amount of funding available to communities to £4.3 million, as at 2022.

The cumulative Community benefit funding from South of Scotland onshore wind farms, as at the end of 2022, totalled £29.4 million (Figure 3-2). Including the funding associated with Clyde and Glenn App Wind Farms brings this to £30.9 million.

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<sup>&</sup>lt;sup>7</sup> Including Carcant Wind Farm, Glenkerie wind farm, Kilgallioch wind farm, the various phases of Crystal Rig and Aikengall wind farms and the extension to the Dun Law wind farm.





### Figure 3-2: Cumulative Community Benefit Funding Available

Source: BiGGAR Economic Analysis

### 3.2 Distribution of Funding Availability

The availability of community benefit funding reflects the distribution of wind farms and is therefore more concentrated in some parts of the region than others.

### 3.2.1 Dumfries and Galloway

In Dumfries and Galloway community benefit funding is available within 86 community council areas. Figure 3-1 provides a breakdown of the number of funds available to residents of each community council area. It is however important to note that eligibility will not necessarily correlate with the amount of funding communities actually receive, which will be a function of the quality of project ideas coming forward and community's capacity to implement them.



### Table 3-1 Eligibility for Community Benefit Funding, Dumfries and Galloway

Funds	Eligible Community Councils
8	Old Luce
7	New Luce
5	Kirkcowan
4	Canonbie and District; Eskdalemuir; Glencairn; Johnstone; Kirkpatrick Fleming and District; Lockerbie and District
3	Cairnryan; Closeburn; Dunscore; Gretna and Rigg; Keir; Kirkcolm; Kirkconnel and Kelloholm; Kirkpatrick Juxta; Kirtle and Eaglesfield; Royal Burgh of Sanquhar and District; Springfield and Gretna Green; Stoneykirk; Templand; Thornhill; Wamphray
2	Ae; Auldgirth and District; Brydekirk and District; Carronbridge; Castle Kennedy; Cree Valley; Dalton and Carrutherstown; Durisdeer; Eastriggs, Dornock and Creca; Hoddom and Ecclefechan; Holywood and Newbridge; Kirkmahoe; Kirkmichael; Leswalt; Lochans; Locharbriggs; Moffat and District; Penpont; Port William; Portpatrick; Royal Burgh of Lochmaben and District; Royal Four Towns; Stranraer, Ochtrelure and Belmont
1	Balmaclellan; Balmaghie; Corberry and Laurieknowe; Corsock and Kirkpatrick Durham; Crossmichael and District; Cummertrees and Cummertrees West; Dalry; Garlieston; Georgetown; Heathhall; Irongray; Isle of Whithorn; Kingholm Quay; Kirkmabreak; Kirkmaiden; Lincluden; Lochside and Woodlands; Loreburn; Mouswald; Parton; Royal Burgh of Annan; Royal Burgh of New Galloway and Kells Parish; Royal Burgh of Whithorn and District; Royal Burgh of Wigtown and District; Ruthwell and Clarencefield; Ryedale; Sorbie; St Michaels; Summerville and Stakeford; Terregles; Tinwald Parish; Torthorwald; Troqueer; Tynron; Wanlockhead

Source: BiGGAR Economics analysis and data provided by SoSE

Grouping these areas into electoral wards shows that the wards with the greatest access to community benefit funding are Mid and Upper Nithsdale; Mid Galloway and Wigtown West; and Annandale East & Eskdale (Table 3-2). As the table shows these areas are predominantly rural. In contrast, the more densely populated wards around Dumfries benefit from very few funds.

Table 3-2 also shows the level of deprivation of wards in Dumfries and Galloway, as measured by the Scottish Index of Multiple Deprivation (SIMD). The SIMD is a relative measure of deprivation that ranks small areas of Scotland across seven dimensions of deprivation. These areas can be ranked based on which decile (tenth of the distribution) they belong to, with a small area in the first decile being in the 10% most deprived areas in Scotland.

Baseline Report on Community Benefit and Shared Revenue from Onshore Wind Projects to Communities in the South of Scotland 11



The data shows that the wind farms providing community benefit funding in Dumfries and Galloway are concentrated towards toward the centre of the deprivation distribution.

D&G wards	SIMD Decile	Funds	Population Density
Stranraer & the Rhins	3	9	44.3/km²
North West Dumfries	4	2	1,601/km²
Mid Galloway & Wigtown West	5	21	9.4/km²
Mid & Upper Nithsdale	5	23	12.1/km²
Annandale South	5	2	71.9/km²
Annandale North	6	14	19.7/km²
Castle Douglas and Crocketford	6	5	21.1/km²
Abbey	6	-	50.2/km <sup>2</sup>
Dee and Glenkens	6	7	8.4/km²
Nith	6	2	275.9/km²
Annandale East & Eskdale	7	21	14.3/km <sup>2</sup>
Lochar	7	9	67.7/km²

### Table 3-2 Dumfries and Galloway Wards that Receive Community Benefit Funding

Source: Scottish Index of Multiple Deprivation; Local Energy Scotland; and City Population (https://www.citypopulation.de/)

### **3.2.2 The Scottish Borders**

In the Scottish Borders community benefit funding is available within 20 community council areas. Table 3-3Figure 3-1 provides a breakdown of the number of funds available to residents of each community council area. It is however important to note that eligibility will not necessarily correlate with the amount of funding communities secure, which will be a function of the quality of project ideas coming forward and the community's capacity to implement them.

### Table 3-3 Eligibility for Community Benefit Funding, Scottish Borders

Funds	Eligible Community Councils
9	Cockburnspath and Cove
7	Abbey St Bathans, Bonkyl and Preston
5	Lammermuir
3	Heriot
2	Coldingham; Oxton and Channelkirk; Reston and Auchencrow; Skirling; Stow and Fountainhall; Tweedsmuir; Upper Tweed



1	Denholm and District; Duns; Ettrick and Yarrow; Gavinton, Fogo and
	Polwarth; Hawick; Lilliesleaf; Manor, Stobo and Lyne; Upper Teviotdale
	and Borthwick Water

Source: BiGGAR Economics analysis

Looking at the distribution of funding across electoral wards in the Scottish Borders shows that funding is heavily concentrated in Berwickshire, which benefits from funding from 28 wind farms (Table 3-4).

The distribution of funding across the Borders differs somewhat from Dumfries and Galloway in being weighted more in favour of more densely populated areas. As Table 3-4 shows, Galashiels and District (the most densely populated ward) receives funding from five wind farms and Berwickshire (the second most populated area) receives funding form 28 wind farms. In comparison, less densely populated wards like Selkirkshire receive funding from only two wind farms and Hawick and Hermitage that do not receive any funding.

However, in contrast to Dumfries and Galloway, the distribution of funding across the Scottish Borders is weighted more in favour of wards toward the upper end of the deprivation distribution, implying that those living in more affluent areas are eligible for more funds than those living in more deprived wards.

Scottish Borders Wards	SIMD Decile	Community benefit Funds	Population Density
Hawick and Denholm	4	0	38.1/km²
Galashiels and District	5	5	70.6/km²
Hawick and Hermitage	5	0	13.5/km²
Berwickshire*	6	28	67.8/km²
Selkirkshire	6	2	14.1/km²
Kelso and District	6	-	29.4/km <sup>2</sup>
Jedburgh and District	6	-	24.2/km <sup>2</sup>
Tweeddale*	7	9	22.1/km <sup>2</sup>
Leaderdale and Melrose	8	3	31.8/km²

### Table 3-4 Wards in the Scottish Borders that Receive Funding from Wind Farms

Sources: Scottish Index of Multiple Deprivation; Local Energy Scotland; and City Population (<u>https://www.citypopulation.de/</u>) \*the wards of 'East Berwickshire' and 'Mid Berwickshire'; and 'Tweeddale East' and 'Tweeddale West' were grouped in Berwickshire and Tweeddale respectively due to data availability.



4.

## **Future Potential**

Over the next 35 years the total value of community benefit funding across the South of Scotland could amount to nearly £900 million, almost 30 times as much as has been generated up to 2023.

In late 2022, the Scottish Government set a target for Scotland to have at least 20 GW of installed onshore wind capacity by 2030<sup>8</sup>. This represents more than double the 2022 capacity of 8.8 GW, a major opportunity for the South of Scotland region.

To estimate the scale of this opportunity the analysis considered three sources of future funding:

- the future value of funding from existing community benefit funds associated with wind farms that were operating in the South of Scotland in 2022;
- the expected value of funding from wind farms currently being planned; and
- the potential value of funding associated with any additional capacity likely to be installed to help meet the national target for 20 GW by 2030.

This section considers each of these sources in turn.

## 4.1 Operational Sites

The previous chapter found that the 52 wind farms operating in the South of Scotland area in 2022 (together with two outwith the area that provide funding in the South of Scotland) contributed around £4.3 million per year to communities across the South of Scotland area. Assuming these funds continue to contribute at the established level then this contribution can be expected to continue.

Based on an operational life of 30 years the value of these funds is expected to peak in 2027 before gradually declining as wind farms reach the end of their operational life. By the time all the wind farms that were operating in 2022 have reached the end of their life, the funds associated with them will have contributed more than £131.9 million to communities across the South of Scotland. This includes the £30.9 million contributed up to 2022 and a further £101 million that is expected to be contributed between 2023 and the end of each wind farm's operational life.

The profile of this expenditure is provided in Figure 4-1.

<sup>&</sup>lt;sup>8</sup> Scottish Government (December 2022), Onshore Wind: Policy Statement 2022





### Figure 4-1: Profile of Community Benefit Funding from Sites Operational in 2022

### **4.2 Required Capacity**

The Scottish Government's target for at least 20 GW of onshore wind capacity by 2030<sup>9</sup> represents more than double the 2022 capacity of 8.8 GW.

In 2022 the South of Scotland accounts for 21% of Scotland existing capacity. If it were to account for the same proportion of the 2030 target capacity, that would mean an increase from 1.88 GW to 4.25 GW, so an additional 2.37 GW of onshore wind capacity in the region (Figure 4-2).

<sup>9</sup> Scottish Government (December 2022), Onshore Wind: Policy Statement 2022





### Figure 4-2: Current MW Capacity and Policy Aspiration (MW)

This additional capacity could be delivered either by developing new wind farm sites or by repowering existing sites. Given the time required to take new wind farm developments through the consenting process it is likely that any new capacity that could realistically be expected to be operational by 2030 would already be at some stage of the planning process in 2023. To estimate the future potential funding associated with new sites this analysis therefore focuses only on developments that were already in the planning system at the time of writing.

While new developments will be necessary to achieve the national target of 20GW by 2030 they will not be sufficient. It is therefore likely that further capacity will be secured through the repowering of existing sites once they reach the end of their intended operational life.

Taken together planned and repowered sites should be sufficient to achieve a level of installed capacity across the South of Scotland consistent with the national target.

This is possible because improvements in turbine technology mean that individual turbines can have a capacity of up to 6-7 MW. This is at least a ten-fold increase in the capacity when compared to the 0.6 MW turbines installed in the region in 1996.

This implies that capacity across the region could be more than doubled with an increase of 40% in the number of turbines and potentially a lot less than this if some existing sites are re-powered with larger capacity turbines. It also implies that this increase in capacity would not be replicated in terms of the number of turbines.

Source: BiGGAR Economic Analysis

Baseline Report on Community Benefit and Shared Revenue from Onshore Wind Projects to Communities in the South of Scotland 16



### 4.3 Planned Capacity

At the time of writing 50 new wind farms (or extensions) were at some stage of the planning process in the South of Scotland. These sites include sites that were still in the initial scoping phase and sites that had recently received planning consent.

Some of the consented projects are unlikely to be constructed based on their existing consents because the detail of the consents relates to turbines that are no longer on the market and/or would not be commercially feasible. It was therefore necessary to exclude these sites from the analysis. This was done based on BiGGAR Economics knowledge of the sector, which is based on 20 years experience working on hundreds of wind farms across the UK, including several in the South of Scotland.

After excluding sites that are unlikely to proceed, it was estimated that 21 sites with a combined potential installed capacity of 2,748MW remained. These sites included 12 for which it was possible to identify an explicit commitment or proposals to establish a community benefit fund, with an average value of £3,986.

If these sites are brought forward as planned then by 2030 the total installed capacity in the South of Scotland would be around 4.6 GW, more than double the current installed capacity across the region and somewhat higher than the level implied by maintaining the region's current share of national capacity (see 4.3).

Based on publicly available information about the timescales and expected operational life of these developments, it was estimated that at the peak of operations these sites will be generating a total of £7.4 million per year for communities across the South of Scotland. Over the course of their operational life the cumulative value of this funding is expected to amount to £230 million.

The profile of this expenditure is provided in Figure 4-3.





### Figure 4-3: Expected Community benefit Funding from Sites Planned in 2022

### 4.4 Repowering Existing Sites

To estimate the amount of funding that could be available if existing and planned sites are repowered at the end of their operational life it was assumed that:

- all sites would offer at least £5,000 per MW per year after re-powering;
- all planned and operational sites would be re-powered after 30-years; and
- the installed capacity of each repowered site would be at least three times what it was in 2022 (this is likely to be a conservative assumption<sup>10</sup>).

This analysis suggests the first re-powered site will become operational in 2027 and the last site to be re-powered will become operational in 2058. By 2058 the total amount of funding available per year from re-powered sites was estimated at over  $\pounds 68$  million (Figure 4-4).

<sup>&</sup>lt;sup>10</sup> This assumption is based on BiGGAR Economics experience working on repowering projects at the feasibility stage and reflects a conservative estimate of the average increase in capacity at these sites.

Baseline Report on Community Benefit and Shared Revenue from Onshore Wind Projects to Communities in the South of Scotland 18





### Figure 4-4 Estimated funding available over time from re-powered Wind Farms

Source: BiGGAR Economic Analysis

### 4.5 Total Potential Future Funding

Taken together, the combined value of funding available from operational, planned and repowered wind farms in the South of Scotland could reach nearly £13 million by 2033 and over £66 million per year by 2058. As Figure 4-5 shows, the peak years of funding will be from 2058 to 2061.

This implies that the total amount of funding that could be available over the next 35 years could amount to £897 million. This is nearly 30 times as much as the total value of community benefit funding received up to 2023.

To help put this in context, the value of the Scottish elements of the Borderlands Deal<sup>11</sup> agreed in March 2021 amount to around £150 million and the final cost of the Waverley Line, connecting Edinburgh to the Scottish Borders was estimated at between £235 and £295 million<sup>12</sup>.

<sup>&</sup>lt;sup>11</sup> Scottish Government (March 2021), Borderlands Inclusive Growth Deal <sup>12</sup> Railway Technology (April 6<sup>th</sup> 2010), Scottish Borders Railway Waverley Project

Baseline Report on Community Benefit and Shared Revenue from Onshore Wind Projects to Communities 19 in the South of Scotland





#### Figure 4-5 Total Potential Funding from Operational, Planned and Repowered Sites

Source: BiGGAR Economics Analysis

### 4.6 Caveats to the Analysis

The scale of future community benefit funding will depend on the extent to which developers offer at least the £5,000 per MW per year that the Scottish Government has encouraged.

To some extent this might be considered to be a challenging target for wind farms that have no subsidy or public sector support mechanism, since margins are tighter than they once were. In this context, there is a danger that an insistence of Community benefit of £5,000 per MW per year could tip some projects from being commercially feasible to being unviable. If this were to be the case, this could undermine efforts to meet renewable energy targets and wider Net Zero legal obligations.

On the other hand, the South of Scotland already has an example of a subsidy free development that has offered Community benefit funding based on £7,000 per MW per year, substantially more than the benchmark set by the Scottish Government (see case study of Crossdykes Wind farm in section 5).



## **Adherence to Good Practice**

Adherence to good practice is not yet universal, there is scope for improvement. However, performance is improving in some areas, and acceptance of good practice principles is widespread.

## 5.1 What Does Good Look Like?

Community benefit funds first began to emerge in Scotland in the early 2000s and became increasingly common over the next decade. Over this period an approach to good practice gradually emerged. This approach consists of two main elements:

- the financial value of support provided; and
- how funds are negotiated, administered, and used.

In terms of the financial value of funds, active encouragement from government ministers helped to ensure that £5,000 per MW per year emerged as common practice. This figure was eventually formalised in official guidance published in 2014, and updated in 2019 to confirm that the Scottish Government would:

"...continue at a national level to promote community benefits of the value equivalent to £5,000 per installed megawatt per annum, index linked for the operational lifetime of the project."

The guidance also outlines six general principles the Government expects developers to apply to help guide the negotiation, administration, and use of funds. These are summarised in Figure 5-1



### Figure 5-1: Scottish Government Principles of Community benefit

Source: Scottish Government



While this guidance is and has always been voluntary, it is widely recognised across industry and amongst community groups as the accepted standard of good practice.

This chapter considers the extent to which it is being adhered to by operational and planned wind farms in the South of Scotland area.

### 5.2 Fund Value

In 2022, the **total annual community benefit funding associated with wind farms located in the South of Scotland was £4.1 million.** This estimate was based on 1,621 MW of installed capacity<sup>13</sup> implying an average of **£2,537 per MW per year**.

On this basis it looks like the South of Scotland's communities have been receiving less than is considered good practice in terms of community benefit funding from onshore wind farms.

However, a wind farm project can take several years in the development stage and perhaps two years in construction so it is not uncommon for a gap of ten years or more between an offer of community benefit being made and funding becoming available. This means many of the funds associated with existing installed capacity relate to projects constructed, planned or approved before the £5,000 per MW per year benchmark was established.

### 5.2.1 Operational Wind Farms

Closer analysis of the data confirms that the scale of funding offered by new capacity has been increasing over time (Figure 5-2).

Of the 52 operational wind farms in the South of Scotland, nearly three quarters were associated with a community benefit fund. Around 60% of these funds were found to be index linked.

While only 14 of the active funds identified was found to be contributing £5,000 per MW per year or more, all but one of these became operational after 2014, when this value was officially adopted as good practice.

It is also instructive to note that this group of projects includes Crossdykes wind farm in Dumfries and Galloway where the community benefit offer is substantially higher than recommended:

Of the 13 projects that were found not to offer any community benefit funding, at least two thirds became operational before the guidance was adopted.

<sup>&</sup>lt;sup>13</sup> The figures in this chapter relate only to wind farms located in the South of Scotland area.

Baseline Report on Community Benefit and Shared Revenue from Onshore Wind Projects to Communities in the South of Scotland 22





### Figure 5-2: Average £ per MW per Year Community Benefit Funding (New Capacity)

Source: BiGGAR Economic Analysis

Overall, of the 26 operational wind farm projects that began operating in the South of Scotland since 2014, nearly two thirds have committed to a community benefit fund while half have committed to package of at least £5,000 per MW per year.

This shows that, even when no formal good practice guidance was in place many developers were willing to reach voluntary agreements, indicating a high level of acceptance of the community benefit principle within the development community.

#### 5.2.2 Planned Sites

At the time of writing proposals existed for 52 new wind farm developments across the South of Scotland, however more than half of these related to historic proposals that are now unlikely to proceed. Of the remaining 21 sites that were considered likely to proceed, it was possible to identify commitments to community benefit funding for all but four. The average value of these funds was estimated at £3,986 per MW per year.

It was not possible to ascertain whether these funds would be index linked.

While this figure remains somewhat below the value recommended by the Scottish Government, it is higher than the current average of £2,537 per MW per year. This suggests that while good practice may not yet be universal, progress is being made.



### **5.3 Other Good Practice Criteria**

Beyond the financial value of funding provided the Government's good practice guidance also specifies six general principles that it expects to underpin community benefit arrangements. These criteria are largely subjective so it is not possible to assess adherence objectively, but it is possible to provide a general sense of current practice based on the experience of those involved.

### 5.3.1 Flexibility

Those consulted believed strongly that flexibility is very important for securing effective and appropriate arrangements. There was also some evidence to suggest that there has been a gradual move toward greater flexibility over time as developers and communities have learned from experience and developed new approaches.

Community consultees were for example able to point to examples of existing funds being modified to reflect changing requirements while developers noted there has been a general shift away from standardised approaches to community benefit in favour of more bespoke solutions. This trend is reflected in BiGGAR Economics' wider project experience, in which bespoke benefit packages tailored to the individual needs of communities appear to be becoming increasingly common.

Overall, this suggests that adherence to this principle is high and that performance is likely to improve as developers and communities gain experience and confidence.

### 5.3.2 Transparency

While some of the good practice criteria in the guidance are difficult to assess objectively, transparency is something that can, to some extent, be observed. Three indicators are particularly helpful in this regard:

- whether details about community benefits are provided on the Scottish Register of Community benefits from Renewables;
- whether it is clear from the information provided (on the Register and elsewhere) what the funding can be used for; and
- whether clear and accessible information about the governance arrangements used to guide the distribution of funding is available.

The good practice guidance published by the Scottish Government places a joint onus on developers and communities to register information about community benefit arrangements<sup>14</sup> in the Register of Community benefits. Despite this the Register currently contains information on fewer than half (25) of the 52 operational wind farms in the South of Scotland. Moreover, the proportion of new sites registered does not seem to be increasing with time.

Closer inspection of site-specific information confirms this pattern. An online search identified clear information about how funding could be used for 12 operational

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<sup>&</sup>lt;sup>14</sup> Scottish Government (2019), Good Practice Principles for Community benefits from Onshore Renewable Energy Developments, page 11

Baseline Report on Community Benefit and Shared Revenue from Onshore Wind Projects to Communities in the South of Scotland 24



funds. A similar search identified clear information on the governance arrangements in place for managing ten operational funds.

Consultations undertaken to support this study suggest that transparency and the opportunity to learn from experience elsewhere are regarded as extremely important. This finding may therefore reflect a lack of awareness of this aspect of good practice rather than a lack of support; however, it does provide scope for improvement.

### 5.3.3 Fairness and Trust

Consultees from the renewables industry, the public sector and community groups all agreed that trust was essential to negotiating mutually satisfactory community benefit arrangements. Trust goes hand in hand with fairness: we trust people we believe will treat us fairly and we believe people will treat us fairly if we trust them.

An important factor influencing how developers are perceived by communities appears to be the approach to and timing of community engagement. Community stakeholders expressed a clear preference for open and early engagement. This is consistent with research<sup>15</sup>, which show that early engagement in land-use planning decisions can bring multiple benefits to all involved, including building trust.

Consultation with community representatives suggests there is a high degree of variation in the approach taken to engagement by different developers. While some are highly regarded and trusted by communities, others are regarded as less trustworthy and/or reluctant to engage. To some extent this is likely to reflect an understandable caution from developers about investing time and resource in building relationships to support projects that may ultimately not proceed.

A high-quality relationship is however never one sided. Both developers and community representatives recognised the important role communities can play in securing successful outcomes by engaging proactively with developers to help them understand local aspirations. This kind of engagement can be extremely important for helping build developer confidence that contributions will be well used.

This suggests there is scope for improvement in this area and a clear rationale for focusing on building community and developer capacity for early engagement.

#### 5.3.4 Community Action Plans

One of the main reasons for communities enthusiasm for early engagement is that it can provide a useful stimulus for community planning. Having a plan in place prior to funding becoming available can help ensure funding is well used and can also help support collaborative decision making. Such plans are therefore recognised as valuable by both communities and developers. An example of where such a plan is being used to good effect is in Glenkens and the surrounding District (see below).

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<sup>&</sup>lt;sup>15</sup> Wright N and Tolson N (2020), The Value of Early Engagement in Planning, commissioned research by the Scottish Land Commission.

Baseline Report on Community Benefit and Shared Revenue from Onshore Wind Projects to Communities in the South of Scotland 25





# Glenkens and District Trust

The Blackcraig Wind Farm Community Fund covers ten community council areas. Shared priorities and a clear action plan are vital for effective delivery.

Glenkens and District Trust (GDT) is the decision-making body for the Blackcraig Wind Farm Community Fund, which is worth around £250,000 per year.

The fund covers ten different community council areas so the administrative challenge in agreeing an approach that worked for everyone was considerable. Agreeing a plan everyone could sign up to was vital to achieving this.

In 2020 GDT appointed Community Enterprise to support delivery of the Glenkens and District Community Action Plan. The partners recognised that engaging with as many people in the local community as possible was going to be key to success and set about an extensive programme of engagement.

The plan was published in September 2020. It identifies four key priorities, a range of short, medium and long-term actions and specific options for implementation.

The plan has been a crucial factor in bringing together multiple community interests and is now being actively used to guide investment decisions. The plan has also been instrumental in helping to build developer confidence that the funding provided will be well used, helping to cement a productive and effective working relationship.

The Glenkens Community Action Plan is a significant achievement because it effectively brings together the aspirations of multiple individual communities into a single, easy to read document. This makes it easy for developers operating (and hoping to operate) in the area to understand community priorities and provides a clear point of contact with whom to engage.

While what has been achieved in Glenkens remains the exception rather than the norm, its existence demonstrates what is possible and provides an exemplar for other communities to learn from.



### 5.3.5 Local Decision Making

Of all the good practice principles considered in this chapter, local decision making was the one that appears to be most widely adhered to. While governance structures and decision-making processes varied between funds, the principle that these should be determined by local residents appeared to be universal. This sentiment was shared by community bodies, public agencies, and developers.

This is not to say that local decision making is straight forward. Consultees highlighted several important challenges to making it work effectively. Not least of which was:

- the need to determine areas of benefit based on how the local area works and how local people live their lives rather than arbitrary administrative boundaries;
- a commitment from all concerned to prioritise the needs of the area of benefit (rather than individual localities) and a willingness to "speak with one voice"; and
- the need to establish clear and effective governance arrangements and transparent decision-making processes.

While there are several examples of national bodies supporting communities to set up and administer funds, the research found no evidence of funding decisions being unduly influenced by external partners. On this basis adherence to this principle was assessed as high.

#### 5.3.6 A Lasting Legacy

The final principle contained within the Government's good practice guidance is that projects should generate a lasting legacy. A comprehensive evaluation of all the projects supported by community benefit funds in the South of Scotland area over the past 20 years is outwith the scope of this project, but useful insight can be gained by considering the type of projects supported.

Research undertaken to support this study identified 12 operational wind farms in the South of Scotland area where clear information is available about the nature of projects supported. A review of these projects suggests that around two thirds of the funds are largely or exclusively focused on short-term projects designed to support community activity, boost community spirit or enhance local quality of life. While worthwhile, such projects are unlikely to generate significant long-term benefits.

The issue of creating legacy benefits was raised by some of the developers who engaged with this exercise. While keen to respect the right of communities to determine how funding should be spent, these individuals questioned whether a more strategic approach to investment might enable greater benefits to be realised.

Some developers have already taken steps to try and achieve this by introducing innovative benefit models designed to enable longer term benefits. An example of this type of approach is the Whiteside Hill Education and Training Fund, which provides bursaries of up to £1,500 to residents of Kirkconnel, Kellohlm and Sanquhar to help them access training and educational opportunities. A lasting legacy has also been achieved by the Fishermen Three wind farm in the Borders (see panel below).





## **Fishermen Three**

The Fishermen Three will create a legacy for the Scottish Borders by helping to fund the construction of around 500 new homes.

The Fishermen Three opened in 2017. It is a three turbine, 7.5 MW development on the boundary between East Lothian and the Borders that was conceived with the specific intention of generating legacy benefits for the region.

The wind farm was developed as a joint venture between Berwickshire Housing Association (BHA) and Community Energy Scotland. It is expected to generate around £20 million for the BHA over its operational lifetime, creating a revenue stream that will enable an estimated 500 new homes to be built over the period.

In addition, Community Energy Scotland will receive an estimated £10 million in revenue from the site, which it intends to reinvest in other community projects.

Image credit: Community Energy Scotland

### 5.4 Summary

This chapter has presented evidence on the extent to which operational and planned wind farms in the South of Scotland are currently adhering to the Scottish Government's good practice guidance. To summarise this evidence current performance was assessed against each principle within the guidance using a scale of 1 - 5, where one implies no evidence of good practice could be found and five implies that most projects are adhering to good practice. Progress was also assessed by considering whether adherence to each criteria appears to be static, improving, or declining.

Overall the picture is encouraging. The current performance score was 25/40 across all eight principles, three areas showed clear evidence of improvement, and none were found to be declining. The main opportunities for improvement identified related to efforts to ensure funding generates a lasting legacy and the wider adoption of community action plans. A summary of this assessment is provided in Table 5-1.



### Table 5-1 Adherence to Good Practice in Community benefit

Good Practice Criteria	Current Performance	Progress
Fund value	3	Improving
Indexation	3	Not possible to assess
Lasting legacy	2	Improving
Trust and transparency	3	Static
Flexible approach	4	Improving
Community action plan	2	Not possible to assess
Locally led decision making	5	Static
Fair processes	3	Static
Summary	25/40	n/a

Source: BiGGAR Economics analysis



# **Evolving Good Practice**

Scotland's onshore wind journey to date has been characterised by innovation and experimentation. It offers major learning opportunities for the future.

Scotland now has more than two decades experience of onshore wind delivery, so there is now a substantial amount of collective insight into the challenges and opportunities involved. As Scotland moves into the next phase of onshore wind development it will be important to reflect on and learn from this experience.

To help with this, the field work for this report gathered views from practitioners with direct personal experience of wind farm developments in the South of Scotland and elsewhere. This section considers some of the key issues raised and highlights some exemplar projects that can provide useful learning for the future.

## 6.1 Strengths and Weaknesses

There was a strong consensus amongst those who engaged with this project that **flexibility** is an important strength of the existing system. The fact that, to date, Scotland has adopted a voluntary approach was generally welcomed and seen as important to enabling the formation of mature, collaborative relationships between communities and developers. The fact that so much community benefit funding has come forward without recourse to legislation tends to support these views.

One of the benefits of this flexibility is that it has helped encourage innovation in the range of community benefit models available. Whereas traditional community benefit funds remain the dominant model, alternative approaches including shared revenue arrangements, site specific educational trusts and the opportunity for communities to acquire equity in new developments are becoming increasingly common. While shared ownership is not necessarily suitable for every community or every development, the introduction of these kind of arrangements illustrates a **healthy attitude toward innovation**, which bodes well for the future.

In contrast, one of the main weaknesses identified within the current system is a tendency for discussions about community benefit to focus only on direct payments through community benefit funds and shared revenue arrangements. While the wider benefits of wind farm development, including supply chain and labour market opportunities, are widely recognised they are rarely discussed with communities.

Another important strength of the current system is that funds are directly controlled by the communities they are designed to support. Consultees were vocal in their support for **community led decision making**, which was seen as key to community empowerment. However, there was also a feeling that engagement does not always begin early enough to enable communities to prepare for the influx of new funding.



A good example of how **early and consistent engagement** can help build trust and mutual respect between developers and communities and help maximise benefits to communities by incentivising a strategic approach to community planning is the Crossdykes Wind Farm near Lockerbie, which became the first subsidy free wind farm in the UK in 2021 (see panel below).



## Muirhall Energy: An Enduring Partnership

An award-winning approach to community engagement, a novel community ownership offer and up-front investment ensured communities around the Crossdykes Wind Farm started to benefit before turbine blades even started to turn.

In 2014 Muirhall Energy approached local communities about their proposals to develop the Crossdykes wind farm. Engagement continued over the next six years as Muirhall worked with local groups and national community intermediaries to develop a bespoke offer, which included:

- an industry-leading £7,000 per MW per year community benefit fund;
- an Initial Investment Fund of £100,000; and
- a community ownership offer to acquire up to 5% equity in the development.

To help communities make an informed decision about the risks and rewards associated with ownership, Muirhall appointed professional advisors to provide detailed information and answer questions arising. To make it easier for the community to take up the offer, Muirhall also allowed the community to secure their equity stake against part of the community benefit funds and revenue from the shareholding. This meant they would be able to pay back the loan in about seven years so the community would begin to earn income from the investment sooner.

While the community benefit was being negotiated communities in the local area prepared action plans setting out local priorities to guide future investment. The Initial Investment Fund was then used to support 32 community projects during the construction phase, before the wind farm became operational.

Sources: various. Image credit: Jeff Holmes.



### **6.2 Challenges and Opportunities**

The main opportunity highlighted by consultees, and throughout this report, is the sheer scale of potential funding available from onshore wind development in the future. Consultees from across the public, private and third sectors recognised the **transformative potential of community benefit funding** to tackle major societal challenges *and* help drive local regeneration. However, they were also alive to the significant challenges and trade-offs this is likely to raise.

One of the most obvious of these is the challenge of ensuring there is a sufficient pipeline of strong, well-developed projects in place to make use of funding as it becomes available. A mismatch between the level of installed capacity and the project pipeline means **underspending of community benefit funds** is already an issue in some areas.

While a comprehensive analysis of the extent to which community benefit funds are utilised was outwith the scope of this exercise, some of the consultations undertaken as part of the study confirmed that underspending has been a challenge for some funds in previous years. This is confirmed by anecdotal evidence from industry sources. As the level of funding available to communities increases in the future these challenges are likely to increase.

This is a serious issue, not just because of the missed opportunity it represents, but because of the effect it can have on developer confidence in the approach. Like any investor, wind farm developers want to feel sure their money is making a difference.

A related issue is the extent to which communities have access to the skills and resources they need to identify, develop, and deliver impactful projects. Much of what has been achieved by communities to date has been driven by volunteers and it is widely recognised that volunteer capacity varies significantly between communities.

That said, it is also important to acknowledge the very **substantial body of expertise and experience that now exists within communities**. This is a valuable human capital asset and finding ways of tapping into it effectively could play an important role in unlocking latent potential within less experienced communities in the future.

Another important challenge raised by consultees is how to **maintain a focus on collective rather than individual wellbeing** within community benefit negotiations. While good practice guidance emphasises the importance of community led decision making, consultees were cognisant that current engagement practices often encourage a focus on individual rather than collective wellbeing. Recent innovations in community benefit models, such as electricity discount schemes (which tend to benefit individuals within a community rather than the community as a whole) reinforce this point.

Baseline Report on Community Benefit and Shared Revenue from Onshore Wind Projects to Communities in the South of Scotland 32



A final related challenge is how to strike a **fair balance between societal objectives and local community empowerment**. The scale of funding likely to become available from onshore wind farms over the coming years has the potential to help address major societal challenges. However, there is no guarantee these challenges will be seen priorities by the communities in closest proximity to wind farms. Balancing community and societal interests is therefore likely to be an important challenge.



# The Hagshaw Cluster

A collaborative, public interest led approach to largescale energy development offers a mechanism for maximising opportunities to local communities.

The Hagshaw cluster is an established group of wind farms near Hagshaw Hill on the border of South Lanarkshire and East Ayrshire, between Coalburn, Douglas and Muirkirk. The combined consented capacity in the area amounts to 584 MW. The community benefits associated with this amount to some £2.7 million per year.

Recognising this opportunity, NatureScot brought together wind farm developers operating in the area to discuss how they could work together in the context of delivering a just transition to net zero. A steering group was established, which decided a Development Framework was needed to guide the project.

In 2021, Land Use Consultants (LUC) working with BiGGAR Economics, RPS Group and Star Development Group, were commissioned to develop the project. The development of the Framework involved a significant programme of engagement to understand the objectives and needs of the communities in the area, and how the design of onshore wind projects, including procurement policies and community benefit funding could be used to achieve these objectives.

The key objective identified by communities was to deliver more effective and larger scale benefits by working together to manage and invest community benefit funds. Energy developers were directly involved in this process, helping ensure there was buy-in from those who would be responsible for designing any new fund.

This has resulted in the creation of the Douglas Valley Advisory Group, which contains representatives from the five community councils operating in the area. This group will collectively act as an advisory body for the project, helping to decide on how the community benefit fund is invested. The group is chaired by representatives from the economic development department of South Lanarkshire Council, which has now appointed a dedicated officer to work on the project.

This chapter has considered some of the strengths, weaknesses, opportunities and challenges associated with Scotland's current approach to community benefits from on-shore wind development. A summary of these is provided in Figure 6-1.

### Figure 6-1 Strengths, Weaknesses, Challenges and Opportunities Highlighted by Practitioners Operating in the South of Scotland

Strengths	Weaknesses	
Flexibility to tailor support to individual communities and give developers confidence they will be able to adapt to changing market conditions.	Too little focus on the wider benefits of wind farm development arising from supply chain and labour market opportunities.	
Gives priority to local decision making, enabling community empowerment.	Lack of early engagement can hinder strategic planning.	
Substantial experience and expertise of community-led delivery.	Underspending of some existing funds.	
Opportunities	Challenges	
Potential to drive transformative local regeneration.	How to strike a fair balance between societal and local priorities.	
Potential help tackle major societal challenges.	How prioritise collective wellbeing over individual benefit.	
Source: BiGGAR Economics		



## 7.

# Conclusions

The continued deployment of onshore wind is a potentially transformative opportunity for the South of Scotland but important questions need to be answered if benefits are to be maximised.

The coming decade is expected to see a substantial increase in the deployment of onshore wind across Scotland as the country works toward a target of 20 GW installed capacity by 2030. If future deployment follows historic pattens then the South of Scotland will play a major role in this.

In 2022, 21% of Scotland's existing onshore wind capacity was in the South of Scotland, a total of 1.88 GW. Based on publicly available information about operational and planned sites in the region it was estimated that this could increase to 4.6 GW by 2030, more than double the current installed capacity.

Providing future developments adhere to established standards of good practice, this level of installed capacity could be expected to generate nearly £70 million per year in community benefit by 2058. Over a 35 year period, this could amount to nearly £900 million - nearly 30 times more than has been received up to 2023.

This is a huge opportunity for the South of Scotland with the potential to drive local regeneration and help tackle major societal challenges.

But realising this opportunity cannot be taken for granted. Many questions will need to be answered to ensure future benefits are maximised. This study has helped to identify some of these:

- How can greater adherence to good practice be encouraged without compromising the underlying flexibility of the current approach?
- How can a more strategic approach to investment be encouraged to help create a legacy for communities?
- What does a fair balance between societal and local priorities look like and how could this be achieved?
- What steps could be taken to encourage the prioritisation of collective wellbeing over individual benefit in community benefit negotiations?
- How can the expertise of communities with experience of negotiating effective benefit agreements be leveraged to support less experienced communities?
- What more could be done to help communities benefit from the wider supply chain and labour market opportunities associated with wind farm developments?



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