

Title: Community right to buy into renewable electricity developments	Impact Assessment (IA)
IA No: DECC0158	Date: 12/02/2014
Lead department or agency: The Department of Energy and Climate Change	Stage: Final
Other departments or agencies: N/A	Source of intervention: Domestic
	Type of measure: Primary legislation
	Contact for enquiries: Brais.louolarino@decc.gsi.gov.uk

Summary: Intervention and Options	RPC: GREEN
--	------------

Cost of Preferred (or more likely) Option – Scenario analysis				
Total Net Present Value, 2012 prices	Business Net Present Value, 2012 prices	Net cost to business per year (EANCB in 2009 prices)	In scope of One-In, Two-Out?	Measure qualifies as
-£1.826m	-£2.319m	£0.299m	Yes	IN

What is the problem under consideration? Why is government intervention necessary?

- 1) Local opposition to renewable electricity developments appears to be higher than at the national level. This discrepancy may be exacerbated by the lack of an institutional framework that facilitates engagement with relevant local communities. There are examples of shared-ownership of onshore wind developments and engagement through the planning process and design of community benefits; however, the current level of engagement with and by communities may be perceived to be sub-optimal.
- 2) Government intervention would seek to reduce the discrepancy between local and national opposition to renewable electricity developments by opening up opportunities for local communities to:
- a) Engage with developers early on, outside of the planning process, and through operation; and
 - b) Share in the benefits from these investments for a lasting positive impact in the locality.

What are the policy objectives and the intended effects?

The powers will enable the government to introduce a legal framework in which individuals in the community are guaranteed the opportunity to purchase a stake in a renewable electricity development. More co-ownership may lead to increased awareness, transparency and community empowerment, and a wider distribution of benefits arising from the productive use of local natural resources. This may also contribute to increasing local support for renewable electricity developments.

What policy options have been considered, including any alternatives to regulation? Please justify preferred option (further details in Evidence Base)

The impact assessment (IA) explores primarily the costs and benefits associated with primary powers against a “Do nothing” scenario. The IA considers two options:

- 1) Do nothing – The Department of Energy and Climate Change (DECC) has been working closely with industry to develop a voluntary framework to increase community co-ownership. The successful implementation of this voluntary framework is the main alternative to regulation.
- 2) Take powers – Enabling powers to introduce a statutory framework. These powers would allow for a rapid response by the government in the event that the voluntary framework fails to achieve a satisfactory level of interaction with and ownership by local communities across Great Britain (GB).

Will the policy be reviewed? The powers will be reviewed. If applicable, set review date: 03 / 2020

Does implementation go beyond minimum EU requirements?	N/A			
Are any of these organisations in scope? If Micros not exempted set out reason in Evidence Base.	Micro No	< 20 No	Small No	Medium Yes
What is the CO2 equivalent change in greenhouse gas emissions? (Million tonnes CO2 equivalent)	Traded: N/A			Non-traded: N/A

I have read the Impact Assessment and I am satisfied that, given the available evidence, it represents a reasonable view of the likely costs, benefits and impact of the leading options.

Signed by the responsible Minister:

Date: 09/06/2014

Summary: Analysis & Evidence

Policy Option 1

Description:

Primary powers to introduce a statutory framework in which communities have the right to buy a stake in renewable electricity developments in their geographical proximity.

FULL ECONOMIC ASSESSMENT

Price Base 2012	PV Base 2014	Time Period 7	Net Benefit (Present Value (PV)) (£m)		
			Low: - 0.002	High: 1.028	Central: - 1.826

COSTS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low scenario			0.002
High scenario			3.509
Central scenario			2.508

Description and scale of key monetised costs by 'main affected groups'

This IA uses a scenario analysis to quantify a set of direct costs that may arise from taking primary powers when compared to the "Do nothing" scenario. These include 1) loss of financial return, as an opportunity cost to businesses from the risk that community members may pull out from investment; 2) administrative burden and transactional costs, shared by developers and local communities; and 3) administrative burden associated with a review of the voluntary schemes, shared by developers and the government.

Other key non-monetised costs by 'main affected groups'

The impact that increased net costs to businesses may have on wholesale electricity prices is not monetised at this stage. The analysis assumes that developers and local community investors will absorb the incremental costs associated with the voluntary schemes. These would be considered in more detail in a full IA for secondary legislation. None of the indirect costs are quantified at this stage, given uncertainties. The risks and sensitivities section considers some of the limitations in more detail.

BENEFITS (£m)	Total Transition (Constant Price) Years	Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low scenario			0.000
High scenario			4.537
Central scenario			0.682

Description and scale of key monetised benefits by 'main affected groups'

The IA also monetises benefits that may arise from taking primary powers. These include the increased financial return from investment by local communities.

Other key non-monetised benefits by 'main affected groups'

This IA does not quantify some of the direct or any indirect benefits that could result from taking powers and any associated increase in the prevalence of co-ownership schemes. These include 1) extension of developments/improved economies of scale, which would impact businesses, local community members, the government and the wider public; 2) social cohesion; 3) social capital and knowledge and skills, which would largely impact businesses and local communities; and 4) public involvement in the planning process.

Key assumptions/sensitivities/risks

Discount rate (%)

3.5%

The quantitative scenario analysis in this IA makes some assumptions concerning the impacts of the voluntary agreement, and therefore, how the "Do nothing" scenario is likely to evolve across time. Other key assumptions are outlined in the relevant sections of this document.

There is a risk that following consultation prior to secondary legislation, new information is available that supports intervention that may not be compatible with the powers. However, this is mitigated by primary powers that are sufficiently broad to accommodate a range of possibilities.

BUSINESS ASSESSMENT (Option 1)

Direct impact on business (Equivalent Annual, GBP 2009) £m: Costs: 0.299 Benefits: 0.000 Net: 0.299			In scope of OILO?	Measure qualifies as
			Yes	IN

Evidence Base

1. **This IA explores and evaluates the arguments for and against the government taking primary powers for the community right to buy into renewable electricity developments.** If made, subsequent secondary legislation would require developers of commercial renewable electricity projects to offer for sale a stake in their project after planning consent has been achieved (but before operation). The impacts of intervention through secondary legislation will only be highlighted qualitatively in this IA. These will be examined separately in more detail, alongside a formal consultation on secondary legislation, if the powers are eventually exercised.
2. The remainder of the document sets out the background, problem under consideration, rationale for intervention, policy objectives, policy options, justification for the level of analysis, cost and benefit analysis, direct costs and benefits to businesses, risks and sensitivities, wider impacts and a set of annexes, including a summary of the informal consultation, a detailed summary of the sensitivity analysis, and a plan for post-implementation review.

Background

3. **One of this government's objectives is to empower communities.** This was clear in an announcement by the UK government in 2010 on *Building the Big Society*, stating: "We want to give citizens, communities and local government the power and information they need to come together, solve the problems they face and build the Britain they want. We want society – the families, networks, neighbourhoods and communities that form the fabric of so much of our everyday lives – to be bigger and stronger than ever before. Only when people and communities are given more power and take more responsibility can we achieve fairness and opportunity for all."¹
4. **After the planning phase, there is a lack of an open institutional framework that facilitates engagement with and by communities in renewable electricity developments through to and during operation.** Energy developers interact with local communities² and authorities during the pre-planning and planning phase. Recently, the Department of Communities and Local Government (DCLG) has introduced legislation making it compulsory for developers to consult local communities before submitting planning applications, although this is limited to onshore wind developments in England.³ Even though this adds a framework for engagement with the communities early on, there continues to be a lack of a framework that facilitates engagement with and by the communities for all renewable electricity developments through to and during operation.

¹ Cabinet Office, May 2010; URL:

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/78979/building-big-society_0.pdf

² Individuals or groups of individuals

³ URL: www.parliament.uk/briefing-papers/sn04370.pdf; additional information can be found on the onshore wind call for evidence – government response, URL:

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/205423/onshore_wind_call_for_evidence_response.pdf

5. **The renewables sector is already voluntarily pursuing a wider distribution of benefits to communities through community benefit packages. These are an important redistributive tool; however, there is only limited evidence suggesting that benefit packages on their own are linked with increased community engagement and “active acceptability”⁴.** Communities in the UK that are located in the proximity of a renewable electricity development may be offered benefit packages outside of the planning process, financial or in kind. This has become an established practice, specifically from onshore wind farm developers in England, Scotland and Northern Ireland.^{5,6,7} Cass et al (2011)⁸ consider that research suggests that community benefit packages may not necessarily lead to increased acceptability of new renewable electricity developments, and Aitken (2010)⁹, for example, points out that the timing of the engagement with communities is particularly important.
6. **There is lack of information for communities particularly, which may translate into an asymmetry when they engage with developers. The government is working with them to mitigate these.** The onshore wind call for evidence¹⁰ provided anecdotal evidence that engagement between communities and developers is not always good practice or constructive, and suggested that there may be a lack of transparency in the sector. In addition, “a key theme in the response was that local people felt ‘disempowered’ and ‘unqualified’ to respond to planning proposals for onshore wind farm”. DECC plans to introduce a community benefits register in 2014¹¹, similar to the register already implemented by the Scottish government¹², and provide “best practice guidance” on engagement between local communities and developers. DECC also plans to facilitate information to support local decision makers and community representatives in the planning decisions.¹³ This guidance will cover renewable electricity developments, including onshore wind.¹⁴
7. **The government also continues to look for ways to empower communities. DECC has therefore worked with the onshore renewables industry to secure their commitment to facilitate an increase in shared-ownership of new, commercial onshore renewable electricity developments.**¹⁵ DECC expects that by 2015, this commitment will translate into a common practice by project developers to offer some level of ownership of new, commercially developed projects.¹⁶

⁴ URL: http://www.4biomass.eu/document/file/2_10-degel-berlin.pdf

⁵ DECC, and URL: <http://www.renewableuk.com/en/renewable-energy/communities-and-energy/community-benefits-protocol/index.cfm>

⁶ URL: <http://www.scottishrenewables.com/news/fresh-commitment-onshore-wind-industry-community/>

⁷ URL: <http://www.ni-rig.org/wp-content/uploads/2013/01/NIRIG-Community-Commitment-FINAL.pdf>

⁸ Cass, N.; Walker, Gordon; Devine-Wright, Patrick; *Good neighbours, public relations and bribes: The politics and perceptions of community benefit provision in renewable energy development in the UK*; Journal of Environmental Policy and Planning, Vol. 12: 3, 2010; URL: <http://www.tandfonline.com/doi/abs/10.1080/1523908X.2010.509558>

⁹ Aitken, M.; *Wind power and community benefits – challenges and opportunities*. Energy Policy, Vol. 38, 6066-6075, 2010

¹⁰ Onshore wind call for evidence – government response, URL: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/205423/onshore_wind_call_for_evidence_response.pdf

¹¹ Community benefits are not considered during the planning application process directly. URL: www.parliament.uk/briefing-papers/sn04370.pdf; <http://www.scotland.gov.uk/Publications/2009/03/20155542/9>

¹² URL: <http://www.localenergyscotland.org/register>

¹³ Onshore wind call for evidence response, URL:

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/205423/onshore_wind_call_for_evidence_response.pdf

¹⁴ Onshore wind call for evidence response, URL:

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/205423/onshore_wind_call_for_evidence_response.pdf

¹⁵ DECC is also working with other energy sectors, such as renewable heat, as part of this process.

¹⁶ Community Energy Strategy, URL: <https://www.gov.uk/government/publications/community-energy-strategy>

8. **Research suggests that facilitating shared-ownership of renewable electricity developments may empower communities, contribute to distributing financial benefits to local communities, and increase support for deployment.** Toke (2005), Warren and McFayden (2010) and other researchers argue in favour of local ownership as a means of increasing public support, among other things. Even if the financial contribution by local community members is limited, Agterbosch et al (2004) argue that community bodies may be “important catalyst actors”, given their promotion and lobbying for onshore (wind) developments.¹⁷
9. Rogers et al (2008) find in a study of the Lake District in England that support for community energy is more widespread than the desire to participate. Research on potential renewable energy projects in the UK does indicate a preference for “low-level forms” of participation.¹⁸ This however is interpreted as more support for partnership models in which the community shares the ownership with a commercial developer, rather than models in which the community has full ownership.¹⁹ This research therefore supports the idea that local community members may be interested in the opportunity to purchase a stake in local renewable electricity developments. Nevertheless, there appears to be no estimate for the likely demand at this stage.
10. **There are currently a limited number of voluntary shared-ownership schemes between developers and community bodies in the UK.** These are mainly located in Scotland, which may be partly caused by the promotion of shared-ownership schemes on national forest land by the Forestry Commission. The shared-ownership agreements take different forms, and involve co-operatives with an average membership of over 600 people.²⁰
11. **These schemes appear to have increased the sense of ownership of and support for renewable energy infrastructure, and as a result, affect the way in which communities interact in the planning process.**²¹ A few examples of shared-ownership schemes in the UK include:

¹⁷ Schreuer and Weismeir-Sammer (2010)

¹⁸ Schreuer and Weismeir-Sammer (2010) – Devine-Wright (2005) and Rogers et al. (2008)

¹⁹ Schreuer and Weismeir-Sammer (2010) – Devine-Wright (2005) and Rogers et al. (2008)

²⁰ Secondary research suggests that over 250 MW of installed capacity of onshore wind in Scotland has some level of local community co-ownership. This is equivalent to around 13% of the two gigawatts (GW) of onshore wind installed capacity in Scotland. From a limited sample of five projects, the weighted average local community stake is equivalent to over 13% of the estimated project costs.

A paper by Willis and Willis points out that 1.22 GW of installed capacity in the UK has a co-ownership component. Willis, Rebecca, and Willis, Jenny; *Co-operative renewable energy in the UK: A guide to this growing sector*; Co-operative UK, 2012; URL: http://www.uk.coop/sites/storage/public/downloads/renewableenergy_0_0.pdf

²¹ This has been identified through an informal consultation to some stakeholders involved in shared-ownership structures of onshore wind developments.

Examples of equivalent schemes in other sectors also seek to encourage involvement by individuals in the relevant “communities”, and align objectives by linking the individuals to the performance of the company (or organisation) – e.g. in football, the supporters, in employee share schemes, the employees – URL:

<http://www.york.ac.uk/media/tyms/documents/research/workingpaper/wp44Pendleton2009.pdf>; URL: http://www.supporters-direct.org/wp-content/uploads/2013/11/Supporter_Share_Ownership.pdf.

- a. Royalty instrument agreements, in which communities purchase a share of the income²² generated by a commercial renewable electricity development at the pre-operation stage, although communities are informed during pre-planning. For example, the Kilbraur Energy co-operative was set up in 2008 to “provide an opportunity for all who are concerned with the effects of climate change to become involved in the ownership and operation of a wind farm. It was especially, but not exclusively, aimed at groups and individuals local to the wind farm” near Golspie.²³ It entered into a royalty instrument agreement with a subsidiary of Falck Renewables Wind Limited, raising over £1m to purchase the equivalent rights to income generated by the Kilbraur wind farm;²⁴
 - b. Virtual turbine ownership, in which a community body owns the right to a turbine-equivalent of the net revenues. For example, Fintry Development Trust, via the subsidiary Fintry Renewable Energy Enterprise, owns the rights to “a turbine’s worth of income”,²⁵ and
 - c. Turbine ownership, in which a community body owns a number of turbines and contracts out to the developer or someone else the operation and maintenance. For example, the Fenland Green Power Co-operative owns two of the eight two-MW turbines of the Deeping St Nicholas wind farm.²⁶
12. **There are also precedents for these and other shared-ownership schemes abroad, particularly in Denmark, The Netherlands, Germany and Austria.** In 2008, the Danish government also introduced legislation to promote, among other things, “the expansion of wind turbines”.²⁷ This included a framework within which agents erecting one or more turbines would be required to “offer for sale at least 20 per cent of the ownership shares” to individuals near the development.²⁸ The legislation was evaluated in 2011, and some weaknesses were identified²⁹, including:
- a. Early stage investment and limited information availability created barriers to entry for smaller investors;
 - b. This was exacerbated by the fact that investors tended to disclose only the minimum information required;
 - c. Short-time scale provided a limited window of opportunity for community investors to make a decision on whether or not to invest, particularly over holiday periods; and
 - d. Take-up of shares was primarily driven by a small number of well-informed and large investors.

As a result, the legislation has been amended slightly in 2013; nevertheless, the core aspects of the legislation remain to facilitate shared-ownership of wind developments by local members of the communities in their proximity.

²² Gross revenues minus operation and maintenance expenses

²³ URL: http://www.kilbraur.coop/kilbraur_aboutus.asp?ID=ABT0

²⁴ URL: http://filesdown.esecure.co.uk/energy4all/E4A_Brochure.pdf_18112010-1304-14.pdf

²⁵ URL: <http://www.fintrydt.org.uk/the-wind-turbine/>

²⁶ URL: http://www.fens.coop/fenland_home.asp; <http://www.energy4all.co.uk/community.asp?id=ENPR3>

²⁷ URL: <http://www.ens.dk/sites/ens.dk/files/supply/renewable-energy/wind-power/onshore-wind-power/Promotion%20of%20Renewable%20Energy%20Act%20-%20extract.pdf>

²⁸ URL: <http://www.ens.dk/sites/ens.dk/files/supply/renewable-energy/wind-power/onshore-wind-power/Promotion%20of%20Renewable%20Energy%20Act%20-%20extract.pdf>

²⁹ Informal consultation with the Danish Government.

Problem under consideration

13. **There may be a conflict^{30,31,32,33} between national and local interests, which the market may not be able to solve in the medium to longer term.** Renewable energy generates positive externalities at the national level. For example, a higher proportion of renewable electricity supply means that the energy needs can be met with lower Greenhouse Gas (GHG) emissions. These benefits are shared nationally.³⁴ There are some sectors, such as onshore wind, in which the provision of community benefit packages is common practice. These therefore provide additional benefits to the local communities. Any external costs that may be associated with these developments may be however, largely felt locally;^{35,36} even though research on the nature and level of these costs is mixed.
14. There could therefore be a discrepancy between benefits and costs perceived at the local and national level, although research is not yet conclusive. For example, Upreti and van der Horst (2004) note that “the environmental justification of biomass energy at the national level is not always sufficient to convince the local residents”. They quote Owens (2004)³⁷ to summarise that “the problem of finding sites (for biomass plants) is frequently construed as meeting some national need whilst ensuring justice for local communities who bear the brunt of environmental hazards and costs”.
15. This discrepancy could contribute to the national-local conflict. Generally, 80% or more respondents in a range of surveys in the UK are in favour of wind energy³⁸, which appears to be higher than support for developments by local communities in their proximity.³⁹ In 2005, Bell et al (2005) asked that “if approximately 80% of the public in the UK support wind energy, why is only a (half) of contracted wind energy capacity actually commissioned?”^{40,41}, and coined the gap between the national and local levels of support

³⁰ Danson, Mike; *Community Ownership and Renewable Energy in Scotland*; Heriot Watt University; CRED Seminar 2013.

³¹ Devine-Wright, Patrick; *Reconsidering public attitudes and public acceptance of renewable energy technologies: a critical review*; Manchester Architecture Research Centre, University of Manchester Working Paper 1.4, 2007 – URL: http://geography.exeter.ac.uk/beyond_nimbyism/deliverables/bn_wp1_4.pdf;

³² Barry, Martin and Chapman, Ralph; *Distributed small-scale wind in New Zealand: Advantages, barriers and policy support instruments*; Energy Policy Vol. 37, 2009; URL: http://martinot.info/ENVI529-2013/Readings_3_resource/Barry_NZ_DG_2009.pdf

³³ Upreti, Bishnu Raj and van der Horst, Dan; *National renewable energy policy and local opposition in the UK: the failed development of a biomass electricity plant*; Biomass and energy vol. 26, 2004, URL:

http://cleanairrevival.org/pdfs/ccr_biomass%20%26%20UK.pdf

³⁴ Note: It could be argued that these benefits may even be shared internationally.

³⁵ Devine-Wright (2007)

³⁶ Upreti and van der Horst (2004)

³⁷ Owens, Susan; *Siting, sustainable development and social priorities*; Journal of Risk Research Vol. 7: 2, 2004; URL: <http://www.tandfonline.com/doi/abs/10.1080/1366987042000158686>

³⁸ Bell et al (2013), quoting to a number of national level surveys between 2003 and 2011.

³⁹ For example, Bell et al (2013) refer to the Eurobarometer 75.1 2011 to suggest that more than 90% of the UK would be in favour of wind energy sources; however, the support for developments in their area may be lower. National polls suggest that individuals’ support for wind development in their area may be between 60% (2012) and 73% (2010), however, these figures may differ from actual levels of support or lack thereof from communities near specific developments.

Eurobarometer (as in Bell et al, 2013) asks: “To what extent are you in favour or opposed to the following sources of energy in the UK?”; ICM poll asked: “To what extent would you support or oppose the following developments in your area?” – URL: <http://www.theguardian.com/environment/2012/mar/01/local-opposition-onshore-windfarms-tripled>

⁴⁰ Bell, Derek; Gray, Tim; Haggett, Claire; and Swaffield, Joanne; *Re-visiting the ‘social gap’: public opinion and relations of power in the local politics of wind energy*; Environmental Politics, Vol 22: 1, 115-135, 2013; URL: <http://www.tandfonline.com/doi/full/10.1080/09644016.2013.755793#preview>

This refers to a quote from Bell et al (2005) and corrected in Bell et al (2013) – over 50% of the applications decided from 2004 to 2010 were approved, which is higher than the original claim of 25%. The number of wind electricity developments built during that period was however, closer to the 25% mark.

⁴¹ Research highlights a number of factors; however, this is generally qualitative and more research may be required for a more detailed and conclusive understanding. Jones and Eiser (2009) note that “if long delays in the

the “social gap”.^{42,43,44,45} This gap has become more visible as ambitious emission targets are set for the future⁴⁶ and deployment of renewable technologies increases. An ICM poll for the Guardian also suggests that local opposition to onshore wind developments may have increased from 16% in 2010 to 27% in 2012.⁴⁷ These figures are estimates and could differ from actual levels of opposition from communities near specific developments. They also appear to differ from levels of opposition at the national level, given the information available. For example, the DECC public attitudes tracking survey suggests that opposition “to the use of” onshore wind was around 12% in 2012.⁴⁸ In parallel, as onshore wind deployment increased between 2007/2008 and 2012/2013, planning approvals decreased from 70 per cent to 35 per cent, respectively.⁴⁹

16. **This potential conflict also raises equity concerns.** If there is a gap between the level and nature of costs and benefits perceived at the local and national levels, there is room for concerns about how these should be distributed, and what should be done to redistribute them, if necessary. Bell et al (2013) consider that distributive and procedural fairness may be a concern, particularly as they try to understand how it may contribute to local opposition.

- a. For example, on the costs side, Wolsink (2007) suggest that a key driver of support or lack thereof by communities is their perception of distributive fairness, driven by how “residents consider (that) others, or the decision makers, shift the burden to them”.⁵⁰ On the benefits side, Bell et al (2013) summarise that the distribution of benefits may be perceived as unfair at the local level if communities “receive little or no benefit while developers and energy companies make large profits, landowners are paid rent for the use of their land for siting wind turbines, and consumers elsewhere in the country use more energy than the communities hosting developments”. In addition, Upreti and van der Horst (2004) state that one of the concerns by local communities opposing a biomass development included “low benefits to local community compared to associated social and environmental costs”. There is however, inconclusive evidence about the level and nature of some of these perceived costs.

planning process are to be avoided and a greater proportion of the proposed wind capacity commissioned, then research into the precise reasons as to why members of host communities engage in active opposition (or active support) of proposal is of fundamental importance”.

⁴² Bell, Derek, Gray, Tim, and Haggett, Claire; *The ‘social gap’ in Wind Farm siting decisions: Explanations and policy responses*; Environmental Politics Vol. 14: 4, 2005

⁴³ Jones, Christopher R. and Eiser, J. Richard; *Identifying predictors of attitudes towards local onshore wind development with reference to an English case study*; Energy Policy Vol. 37, 2009; URL: http://www.sheffield.ac.uk/polopoly_fs/1.88118!/file/Attitudes-to-wind-farms--Dr-Chris-Jones-PDF-434K-.pdf
Jones and Eiser (2009) present a review of a number of factors that may contribute to this social gap in support for renewable energy deployment.

⁴⁴ Upreti and van der Horst (2004)

⁴⁵ Jones and Eiser (2009) explore a hypothesis by Bell et al (2005) that “democratic deficit” in planning as well as “qualified (or conditional) support” could also contribute to the “social gap”.

Bell et al (2013)

⁴⁶ URL: <https://www.gov.uk/government/policies/reducing-the-uk-s-greenhouse-gas-emissions-by-80-by-2050/supporting-pages/carbon-budgets>

⁴⁷ ICM/Guardian poll suggests that opposition to onshore wind farms may have increased from 2010 to 2012; URL: <http://www.theguardian.com/environment/2012/mar/01/local-opposition-onshore-windfarms-tripled>

⁴⁸ The DECC public attitudes tracking survey began in March 2012. URL: <https://www.gov.uk/government/collections/public-attitudes-tracking-survey>; An earlier survey by Eurobarometer in 2006 suggested that 5% of UK respondents were opposed to the use of wind energy in the UK in that year; URL: http://ec.europa.eu/public_opinion/archives/ebs/ebs_262_en.pdf

⁴⁹ URL: <https://www.gov.uk/government/news/onshore-wind-communities-to-have-a-greater-say-and-increased-benefits>

⁵⁰ Low local support may therefore be correlated with perceived unfairness.

Wolsink, Maarten; *Wind power implementation: The nature of public attitudes: Equity and fairness instead of ‘backyard motives’*; Renewable and Sustainable Energy Reviews; Vol 11, 1188-1207, 2007

- b. On procedural fairness, Bell et al (2013) draw on the wider literature to set out that communities may perceive a process to be unfair, particularly when there is a lack of early-stage engagement with communities. In addition, Devine-Wright (2007) refers to research in Germany that finds “procedural justice (i.e. the subjectively perceived fairness of a distribution process)...significant in explaining people’s negative attitudes towards wind energy”⁵¹.
17. This research therefore suggests that potential social gap may be fuelled by, among other things:
- a. Failure to involve local communities effectively; and/or
 - b. Perception that there is an unfair distribution of benefits and costs from the exploitation of natural resources.
- If these issues were mitigated, it is possible that local opposition would decrease and converge towards national levels. Other factors that may contribute to levels of local opposition above the national levels may include a lack of trust in and transparency of the decision-making process and institutions at the local level. For example, Jones and Eiser (2009) from the University of Sheffield also state that "the problem for developers is that research tends to show that the public generally do not trust them. Indeed some observers suggest that local opposition might stem not from an objection to local development per se, but rather in response to having the wishes of outside developers impose on them".
18. **The institutional framework governing the energy sector may not facilitate equal opportunities for all agents to engage in the market.**⁵² For example, Breukers and Wolsink (2007), in a cross-country comparison, argue that “facilitating local ownership and institutionalising participation in project planning can be beneficial for the implementation process and conclude that this has worked better in the [German state of] North Rhine Westphalia than the Netherlands and England”.⁵³ One of the reasons for this, they note, may be linked to “early policy focus on large-scale applications” in the Netherlands and England, potentially suggesting a lack of openness.
19. **The government hopes that the voluntary commitment to facilitate shared-ownership succeeds in delivering widespread community engagement in the onshore renewables sector, and sets more precedent for the wider renewables industry. This could solve some of the issues identified in this section. It is uncertain at this stage however, whether the current voluntary efforts will be sufficient.**

⁵¹ Devine-Wright (2007)

⁵² Schreuer and Weismer-Sammer (2010) – highlighting Agterbosch et al. (2004) and Markard and Petersen (2009). In addition, in the onshore wind call for evidence response, it was suggested that the government could tackle the “barriers to wider uptake of community energy in the UK by introducing a community right to big/buy...for example through the promotion of a community/commercial developer partnership model”. URL:

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/205423/onshore_wind_call_for_evidence_response.pdf

⁵³ Schreuer and Weismer-Sammer (2010)

20. **Information asymmetries about the benefits and costs associated with renewable energy developments may also contribute to the failure of markets in allocating resources efficiently.** The lack of information appears to be largely community-sided. The Onshore Wind Call for Evidence⁵⁴ found that “lack of awareness...capability and capacity of communities” to be barriers to increased community ownership. Bolinger (2001, 2005) finds that familiarity with the sector and cooperative structures and an open institutional framework to be important drivers of higher levels of community full or part-ownership of wind electricity developments. DECC is already planning to improve information availability and may consider providing guidance more directly, particularly to local communities.

Rationale for intervention

21. **Government intervention is needed to mitigate these issues by:**
- Promoting opportunities for communities, such as local shared-ownership schemes, to get involved effectively throughout the development and operation of renewable energy infrastructure projects; and**
 - Increase the financial benefits received by local communities from the exploitation of local natural resources.**
22. **The government believes that it may be required to step in if the voluntary commitment to facilitate shared-ownership does not deliver what is expected of it.** Onshore renewable energy players are committed to facilitate an increase in local shared-ownership.⁵⁵ This is expected to deliver progress, particularly as it will be complemented by more transparent and consistent community benefit packages. The government already provides support with information dissemination and guidance, and has recently introduced pre-application consultation requirements for onshore wind developers to reach out to communities early on in the development of their projects. These and other measures introduced by the UK government and Devolved Authorities are aimed at mitigating some of the issues identified earlier. The government expects that the primary powers will show its clear commitment to local communities and encourage industry to deliver.
23. **Local shared-ownership is considered a⁵⁶ tool that may potentially mitigate the “social gap” and other issues:**

⁵⁴ URL:

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/205423/onshore_wind_call_for_evidence_response.pdf

⁵⁵ Community Energy Strategy, URL: <https://www.gov.uk/government/publications/community-energy-strategy>

⁵⁶ This is not necessarily the only tool available, although one that is building on voluntary effort by the industry. Shared-ownership could mitigate a number of the issues highlighted in research such as Jones and Eiser (2009). For example, the hypothesis by Bell et al (2005) suggests that other contributing factors may include a “democratic deficit” in planning and “qualified (or conditional) support” to onshore wind. Therefore, solutions that could mitigate these potential issues may also be expected reduce the “social gap”.

1) Shared-ownership may lead to increased support. Analysis by Jones and Eiser (2009) highlights that “the more attractive” that economic benefits, including through investment opportunities, “were perceived to be, the more favourable people were to local development(s)”. More broadly, Jones and Eiser (2009) also note that developers may also be able to increase support by getting involved with the community, and using this “opportunity to identify and deal with the specific concerns held by those communities; concerns that policies based upon the provision of national/global pro-wind argument or a misguided belief that all opposition is grounded in concern for personal utility might inadequately address”. Devine-Wright (2007) notes that there is “some empirical evidence...for example, in Denmark...people who own shares in a turbine indicate significantly more positive attitudes towards wind energy than people with no economic interest”. He also point out that more research is required to understand these dynamics in more detail. Anecdotal evidence from the UK supports that local co-ownership may contribute to increased local support for onshore wind developments and any project extensions (see Annex 1).

2) Shared-ownership may become an additional source of income for local communities.⁵⁷ The income generated from the investment by local communities would complement community benefit packages, potentially reducing local community concerns, and ultimately, narrowing the “social gap”.⁵⁸ The majority of the research highlighted in this document has also identified a link between the perception of fairness and local support for renewable electricity developments, such as biomass and onshore wind. Increased income may therefore not only lead to increased support directly as noted above, but also indirectly, through a change in local perceptions about distributive fairness.

3) Shared-ownership may yield a more trustworthy platform under which the community can engage effectively from the development phase through to and during operation. Jones and Eiser (2009) state that “for developers seeking to reduce the potential of disruptive local opposition, building trust with potential host communities should be considered a priority. Importantly...research suggests that one of the key ways in which a climate of trust can be fostered is through responsive and fair engagement with host communities and through encouraging local, co-operative ownership of projects”.

⁵⁷ The DECC public attitudes tracking survey considers whether respondents believe that “renewable energy developments should provide direct benefit to the communities in which they are located”. The majority of respondents are in agreement, 78% in 2012 and 81% in 2013; URL: <https://www.gov.uk/government/collections/public-attitudes-tracking-survey>

⁵⁸ This is also considered by Degel, Melanie and Rupp, Johannes in the presentation *Shared ownership as a success factor for local and regional renewable energy projects*, 2012, who consider shared-ownership as a tool to “provide benefits for affected actors on the ground”. URL: http://www.4biomass.eu/document/file/2_10-degel-berlin.pdf

This also draws on qualitative research by Bell et al (2013).

24. **Research also indicates that local shared-ownership of (wind energy) projects could become the norm rather than the exception in the UK.**⁵⁹ The UK does not have an extensive record of community ownership in the energy sectors, such as for example, when compared to Denmark. However, Walker (2008) argues that despite the “lack of tradition of co-operative organisation in the UK...community co-ownership with commercial developers could become widespread practice in the UK”⁶⁰. Even in countries where grassroots involvement has a strong record, such as Denmark, there appears to be an “increasing entry of large commercial actors where previously cooperative-like initiatives and small private investors dominated”⁶¹. However, “durable processes of institutional alignment and adaptation...occurred in response of the emergence and diffusion of cooperative-like renewable energy initiatives”⁶² which guarantee a framework for engagement with and by the community. The Danish legislation is an example of this.^{63,64}

Policy objective

25. **The government believes that industry may be able to encourage voluntary shared-ownership schemes** and other forms of community engagement that would empower local citizens, increase local engagement and support, and increase the financial benefits to the local community members who invest in these projects.

26. **The government expects that the primary powers demonstrate the government's commitment to:**

- a. **Empower communities; and**
- b. **Encourage industry to pursue a framework in which the offer of a stake into renewable electricity developments increases substantially.**

If voluntary efforts fail to deliver what is expected of them, however, the government may exercise the powers to introduce a statutory framework that guarantees communities the opportunity to purchase a stake in new, commercial renewable electricity developments in GB.

27. The powers will therefore aim to

- a. Promote the shared-ownership of renewable electricity developments by local community members;
- b. Increase local involvement in renewable electricity developments⁶⁵; and
- c. Increase the financial benefits received by local communities from the exploitation of local natural resources.

28. The government is intervening to mitigate potential conflicts between national and local interests, and as a result, improve the following:

⁵⁹ Devine-Wright (2007)

Energy4All outlines the key benefits from shared-ownership agreements, including the redistribution of the benefits to local communities. URL: <http://www.energy4all.co.uk/community.asp>

Schreuer and Weismer-Sammer (2010), highlighting Toke (2005)

⁶⁰ Schreuer and Weismer-Sammer (2010)

⁶¹ Schreuer and Weismer-Sammer (2010)

⁶² Schreuer and Weismer-Sammer (2010)

⁶³ URL: http://www.ens.dk/sites/ens.dk/files/supply/renewable-energy/wind-power/offshore-wind-power/new-nearshore-wind-tenders/citizens_option_to_purchase_wind_turbine_shares_loss_of_value_to_residential_properties_and_the_incentives_scheme_for_more_local_ownership.pdf

⁶⁴ URL:

<http://www.unrisd.org/80256B3C005BE6B5/search/FFACF446C9CEE717C1257B2800527248?OpenDocument>

⁶⁵ Schreuer and Weismer-Sammer (2010) – Wolsink (2000) also advocates a “more open and collaborative approach to planning”.

- a. Level of interaction with and by local actors from planning through the operation of energy infrastructure developments;
- b. Transparency;
- c. Local support for energy project developments⁶⁶;
- d. Siting and size of energy infrastructure projects⁶⁷; and
- e. Distribution of benefits arising from exploitation of local natural resources within the community.

Policy options

29. We have considered the following options:

- a. **Option 1: “Do nothing” – a voluntary agreement to facilitate shared-ownership schemes is pursued and the government does not take primary powers** to establish a compulsory community right to purchase a stake in renewable electricity developments.
- b. **Option 2: “Take powers” – the government takes powers to encourage industry to facilitate shared-ownership schemes** and consider making secondary legislation. This therefore builds on the “Do nothing” option. If made, secondary legislation would guarantee community members living in the proximity of an energy infrastructure project the opportunity to purchase a stake of the development and share its benefits and costs.

“Do nothing”

30. The government has observed a gradual increase in community full or part ownership of renewable electricity developments. Research in the area suggests that communities in the UK favour “low-level forms of participation”, that is, that there is higher support for co-ownership of renewable energy projects rather than full community ownership.⁶⁸

31. **The government has worked closely with onshore renewable energy developers to secure their commitment to facilitate an increase in shared-ownership of new, commercial onshore renewable electricity developments.**⁶⁹ It established a Shared Ownership Taskforce as part of Community Energy Strategy, which will report to the Secretary of State by summer 2014. This report would be expected to include a framework and timetable for implementation, and a level of ambition for community ownership of new renewable development, which the government will then evaluate.⁷⁰ DECC expects that by 2015, this commitment will translate the offer of some level of ownership in new, commercially developed projects into a common practice by project developers.⁷¹

“Take powers”

32. The government is pursuing primary legislation for enabling powers to introduce a statutory framework that would guarantee local communities the opportunity to buy a stake in renewable electricity developments.

⁶⁶ “Local citizen ownership...is also seen as having a positive effect on the acceptance of wind farms.” – Schreuer, Anna; *Energy cooperatives and local ownership of renewable energy: Country cases Austria and Germany*; RiCC 2012; URL: http://www.wu.ac.at/ricc/en/forschung/researchreports/researchreport2012_2

⁶⁷ URL: <http://www.nrel.gov/docs/fy12osti/54570.pdf>

⁶⁸ Schreuer and Weismeir-Sammer (2010), highlighting Devine-Wright (2005) and Rogers et al. (2008)

⁶⁹ URL: <https://www.gov.uk/government/publications/community-energy-strategy>

⁷⁰ URL: <https://www.gov.uk/government/publications/community-energy-strategy>

⁷¹ URL: <https://www.gov.uk/government/publications/community-energy-strategy>

33. **The government prefers that the voluntary commitment succeeds in delivering an increase in local participation and ownership of new, commercial developments. The government however, would like to be ready to intervene if this is not the case.**
The powers are designed to build upon the voluntary agreement that is currently being pursued.
34. The voluntary agreement has a progress review scheduled for 2015, at which point the government will consider “requiring all developers to offer the opportunity of a shared ownership element to communities”.⁷² The powers will be reviewed once they have been in force for 5 years (see Annex 3). This is in accordance with the Government’s Better Regulation guidance.

“Secondary legislation parameters”

35. The community right to buy into renewable electricity developments is defined, at this stage, as a right by individuals and/or groups of individuals in a community to purchase a stake in a new renewable electricity development.
36. The detailed statutory framework would be developed at a later stage, if the government wishes to pursue secondary legislation. A number of key policy aspects that are currently being considered are outlined in the following paragraphs.
37. Community – The community may be defined as individuals and groups of individuals in the area of eligibility.
38. Energy infrastructure development – Any new energy project planned after secondary legislation, and within the technologies under scope, would be eligible. This is expected to be initially focussed on onshore wind, solar and hydro developments of at least over 5 MW of installed capacity.
39. Process – The community is expected to be engaged during pre-planning, although the official agreement would be expected after planning consent has been achieved (the exact timing to be determined in secondary legislation, if the powers are exercised).
40. Share – The minimum stake of the energy infrastructure development offered for sale will be determined prior to secondary legislation.
41. Types of ownership – This share may include equity ownership, the ownership of a number of assets within the project, e.g. a turbine within an onshore wind farm, and/or a right to a share of gross revenues minus operating and maintenance expenditure arising from the exploitation of local natural resources, e.g. a royalty instrument agreement, and/or a loan. The choice of economic structures and legal forms has a number of implications, including liability, tax considerations, administrative burden, risk management and flexibility.
42. Enforcement – A number of options for enforcement of the potential statutory framework have been considered, including the use of licensing. The objective will be to ensure that commercial developers follow legislated practice.

Justification for the level of analysis

43. This IA explores the costs and benefits associated with taking primary powers. It also identifies qualitatively the main costs and benefits associated with the option to exercise those powers. In the case that the government chooses to exercise the powers however, a full IA, alongside a formal consultation, would still be required to evaluate the impacts of a specific regulatory proposal.

⁷² Community Energy Strategy – URL:

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/275163/20140126Community_Energy_Strategy.pdf

44. The impact of the voluntary agreement and how this may be affected by the enabling powers is at this stage uncertain. This will depend on the behavioural response of developers and the interest of communities to participate. The IA therefore considers a number of illustrative scenarios to explore the potential direct impacts of the two options.
45. These scenarios have a number of assumptions based on research undertaken by academics and other commentators on the impacts of increased local participation in renewable electricity developments. This was complemented by information collected through an informal consultation with industry players and community bodies on the impacts associated with co-ownership (see Annex 1).
46. Findings are referenced throughout the IA, and were used to evaluate the direct impacts associated with taking primary powers across a number of scenarios, and highlight qualitatively the indirect and other impacts that could emerge from the powers.
47. The main characteristics of secondary legislation, as envisaged at this stage, were outlined earlier. The impacts that may arise from exercising the powers are highlighted qualitatively in the following sections. These are however only indicative, as a formal public consultation seeking input and evidence on secondary legislation has not been carried out at this stage.

Cost and benefit analysis

48. **This section sets out in more detail a range of options of what may happen in the “Do nothing” scenario, explores the costs and benefits of the option to “Take powers” relative to “Do nothing”, and identifies the key costs and benefits of exercising the powers.** The cost-benefit scenario analysis covers the direct impacts of taking powers, and considers a range of indirect impact scenarios on the “Do nothing” environment. These are the costs and benefits that may be associated with the introduction of primary legislation alone. This is expanded to highlight the impacts of secondary legislation, based on secondary research and the informal consultation. This section also identifies key assumptions embedded in the analysis.

Option 1: Do nothing

49. See paragraphs 30 and 31.
50. **This voluntary commitment is expected to deliver an increase in the offer of stakes in new commercial onshore renewable electricity developments to local community members by 2015.⁷³** This is an important qualitative feature of the “Do nothing” option. An illustration of what this may mean in practice in terms of level of offer and take-up of the stake by community members is pursued in the scenario analysis, and set out in the following paragraphs. In addition, the base case environment is described by the installed capacity of renewable electricity that is expected to enter the pre-development phase from 2015 to 2022, based on inputs to DECC’s internal Dynamic Dispatch Model (DDM). In particular, the analysis focussed on the power sector, and within that, three key onshore renewable technologies were considered: Onshore wind, hydro and solar.
51. Onshore wind, hydro and solar developments above 5MW of installed capacity were selected for two main reasons:
 - a. These industries are more established, with some prevalence of community engagement in the form of part or full ownership, and have signed up voluntarily to the commitment to facilitate shared-ownership;
 - b. If secondary legislation is pursued, the regulation is likely to focus on these more established technologies first; and

⁷³ Community Energy Strategy; URL:
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/275163/20140126Community_Energy_Strategy.pdf

- c. Any commitment or legislation is expected to have exemptions based on project size, and at this stage, this threshold is expected to be at or above 5MW.
52. **Pre-development, capital and operational and maintenance costs associated with expected deployment were estimated using input data from DECC's DDM.** These inputs were then used to generate a dataset of expected additional installed capacity across time that could potentially be impacted by government intervention in the form of enabling powers (i.e. Take powers option), associated costs in GBP 2012 per year, and electricity generation in Megawatt-hours (MWh) per year. In essence, these characterise all new onshore wind, solar and hydro projects that would be expected to go through pre-development between 2015 and 2022, that is, for a seven year period from the expected enactment of primary powers.⁷⁴
53. **Three main illustrative scenarios of the level of offer and take-up of a stake in the development are considered**, given that there is limited information at this stage as to what these may be. The level of offer of a stake in new developments is assumed to increase across time, as the voluntary efforts to facilitate shared-ownership schemes increase in 2015 and offering stakes in developments become the “norm”. The take-up (i.e. the proportion of the stake offered that is taken up by the community) is assumed to range upwards of 65%, based on informal evidence from a consultation with the Danish government about their experience after legislation.⁷⁵ This estimate interacts with the three illustrative “offer” scenarios considered in the table below for the “Do nothing” scenario (see Annex 2 for more detail on the sensitivity of outputs to these assumptions).
54. Table 1: Illustrative % of new renewable electricity developments above 5MW of installed capacity that may offer a shared-ownership stake

Case/Year	2015	2016	2017	2018	2019	2020	2021
Base case 1	50%	60%	75%	75%	75%	75%	75%
Base case 2	70%	80%	95%	95%	95%	95%	95%
Base case 3	80%	95%	100%	100%	100%	100%	100%

55. Based on these assumptions, the following table sets out the share of new developments that would be therefore offered and taken-up by the community, and against which the incremental impacts of enabling powers are evaluated.
56. Table 2: Illustrative % of new renewable electricity developments above 5MW of installed capacity that may offer a shared-ownership stake that is taken up by the community

Case/Year	2015	2016	2017	2018	2019	2020	2021
Base case 1	33%	39%	49%	49%	49%	49%	49%
Base case 2	46%	52%	62%	62%	62%	62%	62%
Base case 3	52%	62%	65%	65%	65%	65%	65%

⁷⁴ The Government is expected to consider the powers once the review is carried out after 5 years, and make a decision on whether or not to exercise them within at most 2 years after the review. For the purposes of this IA, it has been assumed that if the powers are not exercised within this period, the Government would be likely to remove them from the statute book.

⁷⁵ Additional scenarios are considered in the sensitivity analysis.

57. A simplifying assumption is also used to model consumer investment behaviour. In particular, it is assumed that community members who may enter into an agreement with commercial developers to share the ownership of an energy infrastructure development near their community will make use of their savings, held in cash with a nominal return around 2% per annum.⁷⁶

Option 2: Take powers

58. See paragraphs 32 and 33.
59. **The government is determined to ensure that the commitment by the onshore renewable energy industry to facilitate the shared ownership of onshore renewable electricity projects delivers increases in engagement with and by the community, and the shared-ownership of new, commercial renewable electricity developments.** The government believes however, that it is important to ensure that the institutional framework provides a level playing field for all agents, including local communities. The government also believes that a sense of ownership is essential to empower citizens in the delivery of renewable energy infrastructure, thus playing a role in the UK's path to decarbonisation. In this context, if industry does not show signs of progress through a voluntary process, the government would be ready to intervene through secondary legislation.
60. The government expects that the onshore energy industry will develop an implementation plan by summer 2014, and pursue shared ownership options.⁷⁷ As a result, the government expects that co-ownership schemes with local communities will be offered increasingly from 2015 across GB, and that these efforts may translate into an increase in engagement by local communities and shared-ownership of new onshore renewable electricity developments.
61. **The government believes that taking these powers may encourage industry to pursue these schemes with more urgency, and therefore, the analysis considers the incremental impacts of the powers on the effort input by industry to devise and implement their voluntary agreements.** This belief is quantified in terms of a new expected level of offers of shared-ownership options by commercial developers as a percentage of all new developments expected (see the table below and compare against the three base case scenarios in paragraph 54). The community take-up of the offered stake is also assumed to be upwards of 65%,⁷⁸ in line with the "Do nothing" option.
62. Table 3: Illustrative % of new renewable electricity developments above 5MW of installed capacity that may offer a shared-ownership stake

Case/Year	2015	2016	2017	2018	2019	2020	2021
Scenario	80%	95%	100%	100%	100%	100%	100%

The incremental impacts of primary powers, which will be assumed to deliver the above, are evaluated against the three base cases identified in paragraph 54, yielding the low, high and central cost and benefit estimates in this IA. The sensitivity analysis is summarised in more detail in the Risks and Sensitivities section and Annex 2.

⁷⁶ Stylised assumption based on market data. For example, URL: <http://www.money.co.uk/savings-accounts/cash-isas.htm>

⁷⁷ Community Energy Strategy; URL: <https://www.gov.uk/government/publications/community-energy-strategy>

⁷⁸ This is based on informal evidence from the Danish government. A geography-based analysis may be considered at a later stage to estimate the likely take-up more precisely, by evaluating areas where renewable electricity infrastructure is likely to be developed, the size and the fund-raising ability by community members in the proximity.

63. The level of offer and take-up is presented in the table below. If this level of offer and take-up is achieved, it is unlikely that the government would pursue secondary legislation.
64. Table 4: Illustrative % of new renewable electricity developments above 5MW of installed capacity that may offer a shared-ownership stake that is taken up by the community

Case/Year	2015	2016	2017	2018	2019	2020	2021
Scenario	52%	62%	65%	65%	65%	65%	65%

65. The quantitative analysis (the “analysis”) calculates the incremental impact of powers by comparing the level of offer and take-up of stakes in renewable electricity developments by local community members in the different scenarios. For example, this would be the difference between 50% offer in base case 1 (multiplied by 65% take-up) and 80% offer as a result of powers (multiplied by 65% take-up by community members) in 2015. The result is an estimate of the incremental projects (using installed capacity as a proxy) that would be entering into a shared-ownership scheme with local community members.
66. The analysis then considers the financial requirements to deliver these incremental projects, that is, the additional projects that will offer a stake⁷⁹ to local communities only as a result of the primary powers. The assumptions are that a medium risk project is generally financed by some equity (20%) and debt, which will be 80% minus the community stake, which is assumed at 10% of the project costs at this stage.⁸⁰ The real interest rate of debt is assumed at 5%⁸¹, and the amortisation period at 15 years⁸².
67. **Costs and benefits that are quantified are summarised in the table below**, and explored further in the following paragraphs.
68. Table 5: Costs and benefits by group

Group	Quantified costs	Quantified benefits
Businesses	Loss of financial return; administrative burden (incl. employment); monitoring and evaluation	None quantified in this IA (although a range of benefits are listed in paragraph 100)
Community	Administrative burden (incl. employment)	Gain of financial return (e.g. income generated)
Government	Monitoring and evaluation	None quantified

No impact on cost of capital

⁷⁹ The stake is modelled as a right to a share of gross revenues minus operating and maintenance expenditure.

⁸⁰ Department of Trade and Industry; *Financing renewable energy projects: A guide for developers*; DTI New and Renewable Energy Programme; 1993 and revised in 2000; URL: <http://www.peoples-home.org/wordpress/wp-content/uploads/Docs/Finance%20guide.pdf>

⁸¹ Stylised real swap rate of 2.5%, and a margin of around 2.5%; around the median from URL:

<https://www.taylorwessing.com/fileadmin/files/docs/BridgingTheFundingGap.pdf>

⁸² DTI (2000)

69. It is important to highlight the assumption that primary powers will have no impact on the cost of capital at the construction stage. Based on anecdotal evidence, voluntary agreements are generally made such that the risk to community members as well as for private developers is mitigated. This is done by engaging with the local community in two stages: 1) The community is informed about the opportunity to invest in the pre-planning phase, which may tend to generate increased support for the development; and 2) Local ownership is only pursued officially at post-construction and pre-operation. This also means that whilst developers raise funds commercially in advance of the community investing in a stake, the form of this stake will be known at this stage.

Loss of return to businesses

70. The informal consultation identified that commercial developers may not perceive the community investment as an opportunity to free up resources. It is unclear the extent to which co-operative members have flexibility to pull out their investment; however, the anecdotal evidence collected in the informal consultation suggests that the risk may minimise the re-use of the freed up cash in other investments and create the need for additional liquidity to bridge any investment gaps that arise as a result of community investors pulling out unexpectedly.
71. Given this input and the limited information available, the analysis therefore makes the simplifying assumption that, on average, 50% of the funds owed to the community will be held in a savings deposit-equivalent at a nominal return of 2% (or 0% real return).⁸³ That is, originally, 50% of the community investment is held, but as this is repaid each year, the need for businesses to hold funds will decrease accordingly. The remainder of the funds are assumed to be invested in projects with a similar return.
72. The loss of financial return is a direct impact to businesses, and it is driven by the assumption that they will hold some cash at a nominal return of around 2% (approximately equivalent to a 0% real return) as a risk mitigation measure. This “loss” is a transfer from businesses to local community investors, who benefit from the opportunity to invest their savings in this higher-return option.
73. The indirect costs are not considered in the main analysis of this IA.⁸⁴ Any indirect opportunity costs however, would be explored in more detail in an IA prior to secondary legislation, if this is eventually pursued.

Gained financial return by community investors

74. Local communities are assumed to raise funds for their investment from savings, which would have generally been otherwise held in savings deposits at a nominal return of around 2% per annum or approximately 0% real return. Experiences across the UK with the shared-ownership of onshore wind developments generate a nominal return on community investment ranging from 5%-12%⁸⁵ (or approximately 3%-10% real return), generating income to community investors. Currently, investment by co-operative members ranges from £250 to £20,000, with an average of around £2,000.⁸⁶

⁸³ This assumes an inflation rate around 2%, and a real interest rate = $\frac{(1 + n)}{(1 + i)} - 1$, where n is the nominal

interest rate, and i is the inflation rate.

⁸⁴ Allan et al (2008) consider, in their study based on the Shetland Islands, that profits generated by developers are leakages from the local economy. This IA is however an analysis at the UK level, and it is unclear whether dividends would be “leaked” to other parts of the UK or abroad – Allan et al.; *The importance of revenue sharing for the local economic impacts of a renewable energy project: A social accounting matrix approach*; Department of Economics, University of Strathclyde, 2008; URL: URL:

<http://www.strath.ac.uk/media/departments/economics/researchdiscussionpapers/2008/08-11strathecon.pdf>

⁸⁵ URL: <http://www.spiritorflanarkshire.coop/aboutus.asp>

⁸⁶ Informal consultation, Annex 1

75. Local community investors may benefit from a higher financial return from their savings than would otherwise receive from the counterfactual, particularly for those community members who generally hold their savings in low-risk and liquid assets (e.g. savings deposit). The investment will therefore be expected to generate increased income directly.
76. The analysis assumes that on average, community investors on shared-ownership schemes would have otherwise held lower-risk lower-return assets (e.g. savings deposited).⁸⁷ The direct economic benefit may be associated with the increased local expenditure in goods and services associated with the income generated minus the community's contribution to co-operative administration costs.
77. Indirect benefits are not considered in the main analysis. Research and current shared-ownership schemes⁸⁸ consider the potential for increased regional economic activity. Increased expenditure⁸⁹ may likely contribute to increased economic activity locally. It is however, unclear at this stage whether this would contribute to economic activity at a national level.
78. A wider right to invest by local community members may also lead to changes in the long-term saving behaviour of community members. This could have an impact on the steady state rate of local economic growth. These impacts are not considered at this stage however, given the limited availability of information.

Administrative burden on both businesses and community investors

79. Upfront costs associated with shared-ownership agreements currently include the set-up of the community group, generally a co-operative; and preparation and marketing of the investment offer. Anecdotal evidence from the informal consultation suggests that these could range from a total of £100,000 and £140,000 (GBP 2012) per project.⁹⁰ Direct interaction between the co-operatives and project developers is mostly concentrated in the operation phase. Project developers/operators typically meet twice a year to discuss and take questions about performance. A site visit for investors is generally arranged early on in the process. Typical annual operating costs may be around £12,000 (GBP 2012), although these may be higher in the initial years and for new types of agreements, closer to £30,000 (GBP 2012). The operating costs will vary depending on the number of investors.⁹¹
80. These costs are used as a proxy for administrative burden on both businesses and community investors: Upfront costs are assumed at £120,000 (GBP 2012) and £22,000 a year (GBP 2012) for the operation of the development. There are different cost-sharing models. For this assessment, costs are assumed to be shared equally between businesses and community investors (50:50 split) in the case of solar and onshore wind developments. This is based on anecdotal evidence collated in the informal consultation (see Annex 1). Costs are assumed to be fully incurred by developers in the case of hydro developments.⁹²

⁸⁷ URL: <http://www.bristol.ac.uk/geography/research/pfrc/themes/psa/small-savers.html>

⁸⁸ URL: <http://www.energy4all.co.uk/community.asp>

⁸⁹ Marginal propensity to consume is assumed at the 2012 average of over 40%, URL: <http://www.bankofengland.co.uk/publications/Documents/quarterlybulletin/qb120403.pdf>

⁹⁰ See Annex 1

⁹¹ See Annex 1

⁹² Hydro developments are assumed to be of smaller size (using DECC DDM's inputs), and the largely fixed administrative costs based on anecdotal evidence from onshore wind developments are relatively burdensome for communities co-owning hydro developments, given internal modelling. These costs are therefore assumed to borne fully by developers for the co-ownership scheme to work in this analysis. The level and variability of the costs with size will be explored in more detail in an IA prior to secondary legislation, if that is pursued.

81. In order to estimate the aggregate administrative burden, incremental installed capacity is used to estimate the expected number of projects, on average, based on assumptions in DECC's Dynamic Dispatch Model about the size of onshore wind, solar and hydro developments greater than 5 MW of installed capacity.

Employment in local community

82. Any costs to businesses and communities associated with employment are included in the administrative burden highlighted in the earlier paragraphs. Assumptions around the nature of this employment are however important for the analysis. This section presents these in more detail.
83. Increased engagement by the community, and particularly through the set-up of community groups, such as co-operatives, is anticipated to support employment in the local community. Each renewable co-operative generally participates in one shared-ownership agreement. For co-operatives that work with a larger administrative body, such as for example, Energy4All, the renewable energy co-operatives would share resources. This may be just under⁹³ one full-time-equivalent (FTE) professional. Each professional is assumed to have a gross annual salary around the median in the UK in 2012 of £21,500 (GBP 2012).⁹⁴
84. The main analysis assumes that this employment is not additional, given limited information. This assumption is however explored further in the risks and sensitivities.
85. The analysis also assumes that the employment supported by these schemes is required for industry to deliver them and their associated wider benefits and costs. At a national level, however, the shift in employment encouraged by these primary powers may be relatively inefficient in the short-run. As a result, employment costs are used as a proxy for this efficiency costs, and no additional direct benefits to businesses are accounted for, given limited information.⁹⁵
86. The analysis does not quantify any indirect effects of employment, given that there is limited information on displacement and additionality.⁹⁶

Monitoring and evaluation – costs to businesses and government

87. A rough estimate of the resource requirements for the review is carried out. Two FTE professionals for a week in 2020 from government, and half a week from businesses (or trade associations on their behalf). An intermediate review of similar resource costs is modelled for 2017. The gross annual salaries for each FTE are assumed at the 2012 UK median of £21,500 (GBP 2012).⁹⁷ These are not expected to be additional jobs, and therefore, no incremental benefit is associated with direct employment and corresponding income.

Qualitative considerations

88. The incremental net costs to businesses associated with voluntary co-ownership are assumed to be absorbed by the parties involved in the transaction, and thus, to have limited or no impact on wholesale electricity prices.

⁹³ Above 70% of a full-time employee; Please see Annex 1 for more detail.

⁹⁴ URL: <http://www.ons.gov.uk/ons/publications/re-reference-tables.html?edition=tcm%3A77-280149>

⁹⁵ Anecdotal evidence from current shared-ownership schemes in the onshore wind sector suggests that it is also possible that even if firms are encouraged into shared-ownership direction, therefore leading to a shift in employment resources, that this shift may not be fully inefficient. The scenario analysis takes however a conservative approach, given the lack of information at this stage. More thorough analysis would be expected at a later stage, if secondary legislation is pursued.

⁹⁶ Anecdotal evidence from current shared-ownership schemes in the onshore wind sector suggests that there is potential for job creation in the local economy, particularly in the later years of operation.

⁹⁷ URL: <http://www.ons.gov.uk/ons/publications/re-reference-tables.html?edition=tcm%3A77-280149>

89. A potential benefit associated with shared-ownership schemes is that these may lead to a reduction in opposition to developments locally. There is some evidence that an increase in the financial benefits to local communities may translate into increased support⁹⁸, and this could have an effect on how the community contributes to the planning process.⁹⁹
90. A wider list of costs and benefits that may be associated with increased local co-ownership is considered below, in the “Secondary legislation” section. Additional qualitative impacts of primary powers are expected to be in line with those.
91. Risks, potential unintended impacts and sensitivities are considered in “Risks and sensitivities” section below.

Secondary legislation

92. The costs and benefits associated with secondary legislation will be evaluated separately in a full IA against an updated “Do nothing” scenario, if and when the primary powers are exercised. The level of the impacts of legislation will depend on the efforts made by the onshore renewable energy industry to pursue community participation in the ownership of renewable electricity developments.
93. The realised impacts would depend on the detail of the legislation pursued, including for example, the timing and method of the engagement with and by local community members. The impacts that may be associated with secondary legislation seeking to increase local shared ownership of onshore energy infrastructure are considered qualitatively in the following paragraphs.
94. Schreuer and Weismeier-Sammer (2010) summarise the key impacts that have been associated with local participation in and ownership of energy infrastructure projects across the literature.¹⁰⁰ The benefits include:
 - a. Increase in financial benefits to the local community members, which may also “strengthen and diversify local economies”¹⁰¹;
 - b. Tapping an additional source of investment capital;
 - c. Additional human capital from a larger number of shareholders and volunteering;
 - d. Enhanced “democratic legitimacy of...projects” and trust in the system;
 - e. A sense of ownership of energy infrastructure developments by and empowerment of the community;
 - f. Increased support for onshore energy infrastructure developments, and associated political leverage;
 - g. Improved siting and economies of scale (more on this below);
 - h. Reduction of planning risks¹⁰²; and
 - i. Increased awareness about climate change issues, and potential behavioural changes towards alignment with wider climate change mitigation objectives.

Costs to businesses, community investors and the government include:

⁹⁸ “When income from land rental flowed to community under local ownership of land, levels of acceptance rose from 28% to 39%, and levels of opposition fell from 55% to 44%” – a 39% and 20% change respectively; URL: http://geography.exeter.ac.uk/beyond_nimbyism/deliverables/bn_wp1_4.pdf. The relationship found in an ICM opinion poll is even stronger. URL: <http://www.icmresearch.com/media-centre/post/community-owned-renewable-energy>

⁹⁹ Warren and McFayden (2010); Annex 1 on information collated in the informal consultation

¹⁰⁰ Many of these impacts have also been raised in an informal consultation with stakeholders involved in shared-ownership schemes in the onshore wind sector in the UK.

¹⁰¹ Schreuer and Weismeier-Sammer (2010)

¹⁰² Also in Warren and McFayden (2010)

- a. Administrative and transaction costs associated with legal, accounting and consulting services, including during community share offer; and the operational administration of the shared-ownership agreement, which may include the provision of information, biannual meetings, site visits and others;
 - b. Operational risk management limitations associated with shared-ownership structures;
 - c. Reduced economies of scale, although this is contested by findings from the informal consultation and some research; and
 - d. Enforcement.
95. Other effects may include benefits on organisational and technological innovation; social cohesion; and a marginal incremental contribution to achieving climate change mitigation objectives and improving air quality. Costs may include additional requirements to provide support with capacity building, although DECC is already pursuing this; impacts on energy prices resulting from increased costs (although these are currently assumed to be absorbed by the parties involved in the agreement); and other potential impacts, for example, on landscape and townscape.
96. These impacts will be evaluated in more detail, and quantitatively where possible, in a second full IA prior to secondary legislation, if this is pursued.

Direct costs and benefits to businesses

97. **This IA primarily explores the incremental costs and benefits associated with taking powers in scenario analysis**, and it considers qualitatively options for secondary legislation and highlights potential costs and benefits. The government believes that primary powers may encourage industry to pursue shared-ownership schemes with more urgency. This encouragement may therefore generate short-run incremental direct costs and benefits across time. Estimates are formed based on scenario analysis around the offer and take-up of shared-ownership schemes, and driven by informed assumptions as a result of lack of information available. In practice, this will mean that the government expects that primary powers will have some impact on effort input by industry to facilitate shared-ownership schemes in the short-term, and a few scenarios are considered to explore this.
98. **The key direct incremental costs and benefits to businesses that are associated with primary powers are:**
- a. **Costs: Loss of financial return; administrative burden (incl. employment); and monitoring and evaluation; and**
 - b. **Benefits: None quantified in this IA** (although a range of benefits are listed in paragraph 100).
99. Direct costs to businesses associated with primary powers may include loss of financial return are highlighted in paragraphs 70 to 73; administrative burden in 79 to 86; and monitoring and evaluation in 87.
100. Although not quantified, direct benefits to businesses may include improved engagement with community members, the mitigation of planning risk and any associated reductions in frictional costs. These may comprise a reduction in costs associated with any consultation with community members, and potentially even in time and resources spent during the planning phase, increased likelihood of project extensions and improved economies of scale, and availability of additional capital – even though this has been contested in the informal consultation.
101. **Relevant quantitative estimates are presented in the table below.**
102. Table 6: Illustrative incremental direct costs and benefits to businesses from the “Take power” option (see sensitivities for other scenarios and averages)

Scenario	Net Present Value – Net Costs to businesses, £m (2012)	Equivalent Annual Net Costs to Businesses (EANCB), £m (2012)
Central	- 2.319	- 0.379
High	- 3.132	- 0.512
Low	- 0.001	0.000

103. These are calculated using internal DECC modelling, and provide a range of estimates for the EANCB that enables us to consider the sensitivity of this estimate to the various input scenarios (see the Risks and Sensitivities section for more detail). The **EANCB** for the central scenario is also calculated using the **Better Regulation Executive Calculator** for cross-government consistency. The resulting estimate for the central scenario is **£0.299m (in GBP 2009)**.

Risks and sensitivities

104. This section identifies a number of procedural and methodical risks, and summarises the results of the sensitivity analysis.
105. **There is a risk that following a formal public consultation, new information emerges that tips the scale towards an option that may not be entirely consistent with the powers that the government is proposing to take.** This may be mitigated by pursuing primary powers that are sufficiently broad, with scope to define the regulation in more detail in secondary legislation if required and following a formal consultation.
106. **There is a risk that the powers will increase regulatory uncertainty and have unintended consequences on the effort input by industry to facilitate voluntarily local participation.** In no way does the government intend to stifle current efforts. The government is seeking these primary powers to have the opportunity to intervene constructively if it believes that the voluntary agreement does not deliver
- Sufficient engagement with and by the community; and
 - An increase in the sense of community ownership.

To mitigate this risk, the government has communicated actively with the members of the Shared Ownership Taskforce about plans to pursue the voluntary agreement as the preferred option.

107. **There is a risk that the uncertainty from taking powers and any regulation introduced through secondary legislation may have a negative impact on energy infrastructure investment in GB.** It is not however possible to quantify this risk at this stage, in advance of knowing whether the powers will be exercised. The risks will be mitigated by, among other things:
- Drafting legislation that promotes behaviour that yields minimal impact on the cost of capital, in line with current voluntary agreements across GB¹⁰³;
 - Considering the viability of local co-ownership in the formal consultation further, and pursuing clear guidelines such that negative impact on weak investment cases is minimal (i.e. administrative burden tips over the scale against project investment as little as possible throughout GB).

108. **The risks arising from regulatory uncertainty may be more pronounced for renewable technologies other than the more established onshore wind, solar and**

¹⁰³ Informal consultation

hydro. Although primary powers are expected to have a broad scope in terms of technologies eligible for secondary legislation, if this is pursued, it is more likely that the government would regulate the more established onshore technologies first. The uncertainty that arises from primary powers in these markets will therefore have limited impact in the short-run, and more medium-term impacts may be evaluated as part of the review of the primary powers. Offshore renewables are not included in the voluntary agreement that will seek to facilitate part-ownership by local communities. Therefore, the impact of primary powers on market behaviour could not be evaluated in the same way.

109. **There is a risk that facilitating shared-ownership schemes may lead to an increase in higher-risk investment from communities across GB.** If a number of investments were to underperform and communities were to lose money, the perception and support of renewable energy investments may deteriorate. This may be mitigated by pursuing primary powers that are sufficiently broad, with scope to define the regulation in more detail in secondary legislation if required and following a formal consultation.
110. **There is a risk that community members have a low interest in shared-ownership schemes, even if these schemes are facilitated by industry.** There is some research mentioned in the document that points out that some communities may be interested in these schemes. Community demand for this has however, not been estimated yet, to the government's knowledge.
111. **It is assumed that a more thorough analysis of the impacts would be in line with and corroborate the findings in this IA.** The government will pursue a formal consultation prior to secondary legislation. The findings that emerge from this consultation will play a key role in shaping the regulation such that its objectives are achievable whilst minimising unintended and negative impacts.
112. The analysis is based on a set of input and methodological assumptions. A sensitivity analysis comprising 10 “cases” of Low, Central and High scenarios to test the impact of a number of assumptions on the outputs. The summary conclusions are presented in the table below: The central scenario is the average of the central scenario in cases 0 (the main “Take powers” option considered in this IA) through 9, which only consider direct costs and benefits of the “Take powers” options against the corresponding “Do nothing” options.

113. Table 7: Summary outputs of sensitivity analysis

Scenario	NPV Total, £m (2012)	NPV costs, £m (2012)	NPV benefits, £m (2012)	EANCB, £m (2012)	Co-owned MW ¹⁰⁴
Central	-1.697	-2.355	0.658	-0.356	18
High	1.166	-3.193	4.359	-0.464	92
Low	-0.002	-0.002	0.000	0.000	0

114. The key driver of the absolute value of the NPV is the level of offer and take-up that is assumed. The more developments that have shared-ownership agreements, the larger the absolute value of the costs and benefits. The administrative burden is expected to be the largest driver of net costs to businesses and therefore, the EANCB. The change in sign of the NPV from central to high scenarios is generally driven by the fact that costs are assumed of largely fixed nature, whereas the benefits are assumed to be more closely related to the size of the investment.

¹⁰⁴ These refer to the incremental installed capacity that has a local ownership component, that is, the difference between the base case (Do nothing) and the scenario (Take powers).

115. The average EANCB across the central scenarios of case 0 through 9 is £0.281m (in GBP 2009).
116. A more detailed table outlining the outputs of each of the cases and scenarios is presented in Annex 2.

Wider impacts

117. The government will be taking primary powers at this stage, and no wider impacts were identified. There is however, a timetable for evaluation of the primary powers (see Annex 3). The government expects that the powers will incentivise industry to facilitate and encourage local co-ownership and participation in the development process.
118. The wider impacts of regulatory intervention through secondary legislation will be evaluated at a later stage, if this is pursued.

Specific impact tests

119. One In, Two Out: This policy has been assessed as an IN. It is not yet a regulatory measure; nevertheless, the government believes that it may drive increased effort by industry in their pursuit to facilitate the shared-ownership of renewable electricity developments. This incremental impact has been quantified and presented in the earlier section “Direct costs and benefits to businesses” using the Better Regulation Executive Calculator. The central scenario estimate for the Equivalent Annual Net Cost to Business (EANCB) is around £299,000 (in GBP 2009). This is however, very uncertain as is highly dependent on how firms will be impacted by powers, if at all. The less firms change their behaviour as a result of these powers, the closer this figure will be to £0.
120. Small firms and micro-business: Primary powers are expected to impact primarily firms that sign up to the onshore renewables voluntary commitment. The government’s intention is to prevent primary powers from impacting smaller players in the market. The legislation will seek to exempt smaller developments from the obligation to offer a stake to communities to limit the administrative burden, given that there are largely fixed costs associated with the administration of shared-ownership schemes that would potentially impact smaller players disproportionately. In view of these costs, it is therefore expected that only medium to large firms will be encouraged to offer these schemes. In addition, a capacity threshold will be set prior to secondary legislation. At this stage, it is expected that at least the developments that are below a minimum of 5 MW of installed capacity would be exempted.
121. Equality impacts: Primary legislation is not expected to have any differential impacts on the basis of protected characteristics.
122. Competition assessment: There is no evidence that the primary powers would limit the ability of suppliers to compete or their number, particularly given that the developments impacted are expected to be above a certain size (> 5 MW of installed capacity, which will be determined at a later stage, if secondary legislation is pursued). This therefore limits the administrative and relatively fixed burden on smaller market players. Research in the area suggests that institutional frameworks may have favoured large players, and therefore, pursuing legislation to facilitate engagement by local actors could level the playing field. The legislation could potentially result in a fairer, more open and just process that may increase support from communities. This could reduce pre-development costs, and may make it more attractive for new entrants and smaller market players. Barry and Chapman (2009) argue that community ownership could be a means to yielding more competition in the electricity generation sector in New Zealand. If secondary legislation is pursued, a more detailed analysis would be carried out in the corresponding IA.
123. Environmental impact – greenhouse gas assessment: Impacts of primary powers on increased deployment as a result of increased support are not quantified in this IA due to limited data available. The informal consultation process highlighted that it is possible that

increase local support associated with co-ownership may result in the expansion of developments and therefore, increased deployment and improved economies of scale. This would have positive greenhouse gas impacts when concerning renewable energy sources, and may be quantified at a later stage, if secondary legislation is pursued.

124. Environmental impact – wider environmental issues: Primary powers are not expected to have any significant incremental impact on noise, waste management, water pollution and abstraction, ecosystems, landscape, and other wider environmental issues.
125. Health and wellbeing: Primary powers may potentially contribute, incrementally, to social cohesion and strengthen local social capital. The net impacts are expected to be positive; however, they have not been quantified at this stage. Employment impacts are considered in earlier sections of this document.
126. Human rights: Primary powers are expected to be compatible with the Human Rights Act 1998 and the European Convention on Human Rights.
127. Justice system: Primary powers are expected to have limited impact on cases being brought to court, if any, as no new regulation is being implemented. An increase in shared-ownership schemes between local communities and commercial developers could nevertheless, yield increases in cases brought to court. There is no evidence that this has been the case to date. If secondary legislation is pursued, the impact on the justice system is likely to be more significant, and a closer analysis may be therefore required at that stage.
128. Rural proofing: Primary powers are expected to push efforts by industry to implement a plan to facilitate co-ownership of renewable electricity developments by community members in their proximity. It is very likely that a number of these developments will be located near rural communities. Therefore, the financial and employment benefits associated with the shared ownership of the developments would contribute positively to the local economy. Other social and environmental benefits may also arise. If a geography-based analysis is pursued at a later stage, prior to secondary legislation, these impacts may be considered quantitatively.
129. Sustainable development impact: Primary powers are likely to yield an incremental transfer of particularly financial benefits from commercial developers to local community benefits. This would likely contribute positively to economic diversification of local communities, and therefore, their sustainability and resilience.
130. Monitoring and evaluation: A post-implementation review plan is outlined in Annex 3. A Shared Ownership Taskforce will be established and report by summer 2014. This report would be expected to include a framework and timetable for implementation, and a level of ambition for community ownership of new renewable development, which the government will then evaluate within five years. This review will be carried out to assess whether 1) voluntary efforts have delivered what is expected of them, and 2) further government intervention in the form of secondary legislation is required.

Annex 1: Summary of informal consultation on shared-ownership schemes in the UK

131. Some stakeholders in the energy sector were informally contacted to gather information about market practices relevant to the primary powers evaluated in this IA. In particular, this comprises information from shared-ownership schemes in the onshore wind sector.
132. A formal consultation will be carried out prior to secondary legislation, if this is pursued. The consultation would generate evidence that would be used to inform decision makers about whether to proceed with secondary legislation or not, and determine the details of the policy.
133. An informal consultation was pursued at this stage with community organisations and industry players involved in voluntary shared-ownership schemes in the onshore wind sector. Anecdotal evidence was gathered particularly to understand how the policy would interact with and impact the growing number of voluntary schemes implemented over the last 10 years.
134. The following paragraphs summarise information gathered during this process, which was particularly focussed on experiences by agents involved in voluntary shared-ownership schemes in the onshore wind energy sector.
135. Local ownership in the UK has generally been led by co-operatives headed by local members of the community and self-administered (or supported by organisations such as Energy4All). There appear to be different models of administration for shared-ownership structures. Generally, the commercial developers bear the costs of setting-up the co-operative and cover administration expenses during their engagement in the planning process, financing, operation and delivery. There are cases however, in which co-operatives incur all the costs, and examples in which administrative costs are shared. In cases where local ownership is in the form of physical assets, community bodies tend to outsource the services to the private developer through operation and maintenance contracts.
136. The majority of the schemes are commercial partnerships for a share of the profit and loss account purchased at the post-construction/ pre-operation stage (for example, through a royalty instrument agreement). The community is informed about the opportunity to invest in the pre-planning phase, which tends to generate increased support for the development. This timing of the investment is delayed to post-construction primarily for two reasons: 1) Minimise risk for community members; and 2) minimise risk for private developers and limit impacts on the cost of capital. Planning and construction risk is borne by project developers, and therefore, they will expect to earn a higher return than co-operatives. The agreements are private, but at a high-level, they contain clauses to protect members of the co-operatives and allow for scrutiny of the accounts if required.
137. The share of income to which investors are entitled is generally equivalent to the ratio of the co-operative investment to total capital costs, minus a number of deductibles when applicable.¹⁰⁵ These schemes appear to have moved to structures in which the private developer tends to "guarantee" a minimum annual return and repayment of the initial investment.
138. The opportunity to invest is open to all, although marketing is concentrated in localities near the project (generally within a 30km radius). Total investment from communities generally falls in the range of £0.5m to £1m, and is focused on one project. Recently, however, the Spirit of Lanarkshire co-operative raised £2.7m to invest in two different projects. Investment per co-operative member generally ranges from £250 to £20,000, and on average, each member invests around £2,000 per project.

¹⁰⁵ There are different models in which the agreement varies. For example, in cases in which community co-operatives required a loan from the developer, the capital and interest costs associated with this loan would be deducted.

139. This investment does not appear to be perceived however, as an opportunity to free up resources for the developer. This may be due to flexibility within the arrangement. It is unclear the extent to which co-operative members have flexibility to pull out their investment; however, industry suggests that the risk may minimise the re-use of the freed up cash in other investments and the need for liquidity to bridge any investment gaps that arise as a result of investors pulling out unexpectedly.
140. Co-ownership is not deemed financially viable if the share offer does not raise at or beyond the £250,000-£300,000 mark. In more detail, the upfront costs of setting up the co-operative, coupled with the preparation and marketing of the investment prospectus range from a total of £100,000 and £140,000 per project.
141. Direct interaction between the co-operatives and project developers is mostly concentrated in the operation phase. Project developers/operators typically meet twice a year to discuss and take questions about performance. A site visit for investors is generally arranged early on the process. Typical annual operating costs are around £12,000, although these are expected to be higher, at £30,000, in the initial years and for new and innovative schemes. The operating costs will vary depending on the number of investors.
142. A second set of estimates suggest that set-up costs for volunteer led co-operative projects may be around 4% of the capital raised. Administrative costs may be around 1.5% of capital raised, with an additional cost of 1%-1.5% at the early stages of the project.
143. The co-operatives are administered in different ways. At the community side, there are at least two models, 1) the co-operative forms part of a larger group that administers it, and 2) the co-operative is self-sufficient and independent. Co-operatives that form part of larger bodies, such as for example Energy4All, share the administrative services and support the development of new co-operatives. In this case, Energy4All employs at least seven full-time professionals that provide day-to-day administrative services to at least nine co-operatives. Other more independent community bodies, such as the Fintry Development Trust, have grown and become more active across time. Fintry Development Trust has a staff of four full-time-equivalent professionals who are involved in a range of activities.¹⁰⁶
144. Co-ownership schemes are perceived to be a long-term commitment. Increased community awareness and support resulting from local co-ownership may contribute to their interaction in the planning process, improve the relationship with the community into the long-term, and help secure approvals for project extensions, thus improving economies of scale. In addition, this is also perceived as an opportunity for capacity building, particularly for the community groups. The income generated for the communities may also have a range of positive direct and indirect impacts on the local economy, for example, through investing in schools, reducing energy costs, supporting local entrepreneurial activity, and/or other activities. These may also support and/or create employment in local communities.
145. Some factors were raised as potentially contributing to the limited expansion of shared-ownership of renewable electricity developments, including: Upfront costs associated with scheme; lack of experience with these schemes, particularly for communities, and/or how to negotiate with developers; and uncertainty about them from the side of developers. A point was also raised about the planning process, and the weight of community engagement. Planning is however evolving to introduce opportunities for active community engagement from early on (e.g. pre-application consultation).
146. Project developers generally continue to provide more traditional benefit packages to the wider community.

¹⁰⁶ URL: <http://www.fintrydt.org.uk/staff/>

147. Qualitative evidence on community ownership was also gathered within the onshore wind call for evidence. Community ownership "was seen...as providing greater economic return to communities...Responses from academic organisations reinforced the views that community ownership could also provide many social benefits to communities, including the development of new local knowledge and skills as well as encouraging cooperation and social interaction". On the back of this, respondents suggested that ways to increase community ownership included information dissemination, advice, promoting uptake and "a community right-to-bid/buy into commercial developments".¹⁰⁷

¹⁰⁷ Onshore wind call for evidence; URL:
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/205423/onshore_wind_call_for_evidence_response.pdf

Annex 2: Sensitivity Analysis

148. The sensitivity analysis comprises 10 “cases” of Low, Central and High scenarios, and tests the impact that assumptions have on outputs. The following table describes each of the cases and presents the outputs per scenario. Note that the EANCB estimates presented below are in GBP 2012, and calculated using internal DECC modelling (EANCB<0 for net costs, and EANCB>0 for net benefits). These are only presented to observe the sensitivity of outputs to input assumptions, even though it is not consistent with the IOTO methodology¹⁰⁸ set out by the Better Regulation Executive. The OITO EANCB estimates are presented in earlier sections.

149. Table 8: Output of the sensitivity analysis

Case	Scenario	Description	NPV Total, £m (2012)	NPV costs, £m (2012)	NPV benefits, £m (2012)	EANC B, £m (2012)	Co-owned MW ¹⁰⁹
Case 0	Central	This is the main option explored in the IA. It quantifies direct costs and benefits associated with primary powers, where possible.	-1.8	-2.5	0.7	-0.379	19
Case 0	High		1.0	-3.5	4.5	-0.512	96
Case 0	Low		0.0	0.0	0.0	0.000	0
Case 1	Central	The level of offer and take-up are in the “Do nothing” option is 20% lower.	-2.0	-2.5	0.5	-0.374	15
Case 1	High		0.2	-3.4	3.6	-0.487	77
Case 1	Low		0.0	0.0	0.0	0.000	0
Case 2	Central	The level of community investment held up as a risk mitigation measure is decreased by 20% (to 40% of funds raised by the community).	-1.8	-2.5	0.7	-0.374	19
Case 2	High		1.2	-3.4	4.5	-0.487	96
Case 2	Low		0.0	0.0	0.0	0.000	0
Case 3	Central	The level of community investment held up as a risk	-1.7	-2.4	0.7	-0.367	19

¹⁰⁸ The Better Regulation Executive has a model that calculates the EANCB for the purposes of One-in, Two-out, such that it is consistent for all policies. In this calculation, the “net costs to business are...presented in 2009 prices and discounted to 2010”.

¹⁰⁹ This refers to the incremental installed capacity that would be co-owned as a result of the powers and in comparison to the different base case scenarios.

Case	Scenario	Description	NPV Total, £m (2012)	NPV costs, £m (2012)	NPV benefits, £m (2012)	EANC B, £m (2012)	Co-owned MW ¹⁰⁹
Case 3	High	mitigation measure is decreased by 50% (to 25% of funds raised by the community).	1.4	-3.1	4.5	-0.448	96
Case 3	Low		0.0	0.0	0.0	0.000	0
Case 4	Central	The level of community investment held up as a risk mitigation measure is decreased by 100% (to 0% of funds raised by the community).	-1.7	-2.4	0.7	-0.354	19
Case 4	High		1.8	-2.7	4.5	-0.385	96
Case 4	Low		0.0	0.0	0.0	0.000	0
Case 5	Central	The administration burden (and employment needs) associated with shared-ownership schemes is increased by 20%.	-2.3	-3.0	0.6	-0.450	19
Case 5	High		0.4	-4.1	4.5	-0.589	96
Case 5	Low		0.0	0.0	0.0	0.000	0
Case 6	Central	The administration burden (and employment needs) associated with shared-ownership schemes is lowered by 20%.	-1.3	-2.0	0.7	-0.309	19
Case 6	High		1.6	-3.0	4.6	-0.435	96
Case 6	Low		0.0	0.0	0.0	0.000	0
Case 7	Central	The administration burden (and employment needs) associated with shared-ownership schemes is lowered by 50%.	-0.5	-1.3	0.8	-0.203	19
Case 7	High		2.6	-2.1	4.7	-0.320	96
Case 7	Low		0.0	0.0	0.0	0.000	0
Case 8	Central	The levels of take-up and offer are 20% lower in the “Do nothing” option than in case 0. The level of investment held as a risk mitigation measure is the same as in case 0. The administration burden is increased by 20%.	-2.5	-2.9	0.4	-0.445	15
Case 8	High		-0.4	-3.9	3.5	-0.564	77
Case 8	Low		0.0	0.0	0.0	0.000	0

Case	Scenario	Description	NPV Total, £m (2012)	NPV costs, £m (2012)	NPV benefits, £m (2012)	EANC B, £m (2012)	Co-owned MW ¹⁰⁹
Case 9	Central	The levels of take-up and offer are as in the “Do nothing” option in case 0. The level of investment held as a risk mitigation measure is 20% lower than in case 0. The administration burden (and employment needed) is lowered by 20%.	-1.3	-2.0	0.7	-0.304	19
Case 9	High		1.8	-2.8	4.6	-0.410	96
Case 9	Low		0.0	0.0	0.0	0.000	0
Case 10	Central	This case is the same as case 0, and considers employment additionality and indirect effects. The employment additionality is assumed at 40%, based on the “evidence from regeneration projects” as indicated in the IA carried out for the community right to bid. ¹¹⁰	0.7	-2.5	3.2	-0.379	19
Case 10	High	This case also quantifies the indirect effects of additional employees on the local economy, based on a type II multiplier factor of 2, that is, a 100% mark-up on the direct employment and income generated. ¹¹¹	5.5	-3.5	9.0	-0.512	96
Case 10	Low	The income generated by the investment from community members may lead to increased expenditure, which could have indirect and induced impacts on the local economy. ¹¹² These are estimated assuming a type II multiplier of 1.9, i.e. a 90% mark-up on the direct impact of increased expenditure.	0.0	0.0	0.0	0.000	0

¹¹⁰ URL: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/8505/2168557.pdf

¹¹¹ Type II multipliers are taken as the simple average multiplier factor from the Scottish Input-Output tables, URL:
<http://www.scotland.gov.uk/Topics/Statistics/Browse/Economy/Input-Output/Downloads/IO1998-2009L2>

¹¹² Barry and Chapman (2009): “Through increased local economic activity and the multiplier effect, community wind could be developed as a mechanism to strengthen and diversify local rural economies throughout New Zealand”. Allan et al (2008) make a similar argument in their assessment of the local economic impact of a large onshore wind project in the Shetland Islands.

Annex 3: Post Implementation Review (“PIR”) Plan

This annex sets out the plan to review the policy upon implementation, the PIR.

A PIR is expected to be undertaken five years after the enactment of primary powers. The PIR may examine the extent to which the powers have achieved their objectives, evaluate the associated costs and benefits, identify any unintended consequences, and determine whether the government may wish to exercise the powers. The PIR is set out below in more detailed.

Basis of the review: The government proposes that primary powers are evaluated after three years, and information is collated such that a full PIR is carried out after five years. In the event that any review yields conclusions that do not fit within the government’s expectations, a plan will be developed for further intervention through secondary legislation.

Review objective: The primary objective of the review will be to determine whether the voluntary efforts by industry and the powers have interacted to deliver what is expected in terms of the shared-ownership of new renewable electricity developments, and consider whether the government may wish to exercise its powers or not. The reviews are expected to be carried out by government with support from industry, and DECC expects that a Shared Ownership Taskforce will deliver an implementation plan with a clear timetable for voluntary efforts by summer 2014. This is likely to include a plan for review and interaction between government and the Taskforce, which will lead on the implementation of the voluntary plan to facilitate local co-ownership of onshore renewable electricity developments.

Review approach and rationale: The government expects to work closely with industry and communities to review the impacts of the powers, and how voluntary efforts interact with these. It expects to draw upon information available to these groups and complement this with secondary research and a wider consultation, as required. This will ensure that efforts are not duplicated between the government and the Shared Ownership Taskforce, whilst sufficient information is available for the government to evaluate progress.

Baseline: The baseline may be developed by the said Taskforce at a later stage, and in collaboration with the government.

Success criteria: Success will be primarily judged on the percentage of new developments offering a stake to community members, level of take-up by local communities across GB, and level of engagement with and by communities in new, commercial renewable electricity developments, and local support for these investments.

Monitoring information arrangements: The government will work closely with Shared Ownership Taskforce that will pursue a voluntary plan to facilitate shared-ownership schemes to collect the relevant information for an effective review of the voluntary efforts. This is likely to be complemented by secondary research and consultation.

Reasons for not planning a PIR: N/A