

Report title: Community Investment in Renewables

Wards affected: City-wide

Strategic Director: Barra Mac Ruairi, Place

Report Author: Mareike Schmidt, Service Manager - Energy

RECOMMENDATION for the Mayor's approval:

1. To utilise council owned buildings and land for the installation of solar PV panels and other renewable energy technologies, and funded through a community-based finance model.
2. To approve the installation of solar PV and other renewable energy technologies for a suitable portfolio of council owned buildings and land, with an initial trial of around 100kW of solar PV installations on a 'package' of buildings.
3. To delegate authority to the Energy Commercial Director, the Finance Service Director and the Property Service Director, to allow them to approve the installation of solar PV and other renewable technologies on further packages of pre-identified council owned buildings and land, if the initial trial is successful.
4. To note, this model enables BCC to achieve its renewable energy targets without using its own capital, and gives investors an ethical investment/joint venture opportunity.

Key background / detail:

a. Purpose of report:

To set out the role that communities can play in helping BCC to meet the UK's energy and climate change challenges. The proposal is for a community-based finance model to support the delivery of a non-domestic solar photovoltaic (PV) programme and potentially other renewables across council owned buildings and land, with the option to expand the scheme to other public sector bodies.

b. Key details:

- This report is to obtain approval for increasing the amount of PV (and potentially other renewables) installed in the city by allowing community groups to raise funding for installations on Bristol City Council buildings.
- This is generally on buildings that BCC own the freehold but have been passed to the occupiers/tenants to manage on a long term lease (18 years+).
- The organisations occupying the buildings will receive the electricity generated at a discounted rate; the Feed-in-Tariff will be utilised to pay back the developer who pays for the installation.
- To establish the viability of this process a pilot of around 100kW of installed capacity will be carried out as a Package contract (mixed sizes) and then further "Packages" will be worked up if this proves to be an effective model.

BRISTOL CITY COUNCIL CABINET 7 October 2014

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Strategic Director: Barra Mac Ruairi, Place

Report author: Mareike Schmidt, Service Manager - Energy

Contact telephone no. 0117 92 22640
& e-mail address: mareike.schmidt@bristol.gov.uk

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To set out the role that communities can play in helping BCC to meet the UK's energy and climate change challenges. The proposal is for a community-based finance model to support the delivery of a non-domestic solar photovoltaic (PV) programme and potentially other renewables across council owned buildings and land. There will be an option to expand the scheme to other public sector bodies.

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The proposal:

1. Following the publication of the Department of Energy and Climate Change (DECC) Community Energy Strategy report¹, it is proposed that the Council facilitates, via

¹https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/275169/20140126Community

asset transfer, local community groups to install solar PV and other renewable energy technologies on a range of council owned buildings and land. The projects will be financed by a local community group and/or a social investment provider (for low cost debt).

2. DECC's report sets out the potential of communities in achieving the UK's goal of decarbonising the power sector and meeting a 15% share of energy provided from renewable sources by 2020. Independent modelling for DECC suggest that, by 2020, community electricity could generate between 0.5GW and 3GW (from a mixture of solar PV, onshore wind and hydro projects) - enough electricity for 1 million homes.

Benefits of community energy and for the tenants:

3. This proposal will produce the following general benefits:
 - Reduce the city's carbon emissions and cut the Council's energy costs without the need for Council capital expenditure.
 - Generate revenue to support the operations of local community groups, provide dividend repayments to local shareholders, thus strengthening the viability of existing community enterprises and facilitating new community enterprises.
 - Galvanise local communities to make an important contribution to maintaining energy security by reducing the dependency on imported electricity and leads to wider social and economic benefits.
 - Stimulate increased public engagement with the Bristol Solar City initiative and the Green Capital Partnership. Whilst promoting solar PV to community groups, there is the added advantage of communities getting involved in making energy efficiency improvements, by taking up the Green Deal and the Energy Company Obligation (ECO) work offered by BCC's Energy Service.
4. This proposal will produce the following benefits for the tenants:
 - Save money on bills by having a Power Purchase Agreement to buy the electricity used from the solar panels at a discounted rate.
 - Good PR in supporting a community scheme.
 - Good utilisation of their roof.

What is community energy?

5. The term 'community energy' refers to the ownership of renewable energy and energy efficiency assets by legal entities owned and operated for community benefit.
6. Frequently, the legal entities are incorporated as Industrial & Provident Societies (IPS)² operating for community benefit, with their capital generated through community share issues.

[Energy Strategy.pdf](#)

² IPS legal form has low regulatory costs; enables social investment from private investors; has attractive returns often supplemented by Enterprise Investment Scheme tax relief; and community benefit and charitable goals embedded into the corporate structure.

7. A less common form is a Community Interest Company (CIC). This type of limited company exists to benefit the community rather than private shareholders. CICs limited by shares are subject to a dividend cap to prevent exploitation for private gain.
8. Social investors are business led charities and social enterprises that work in partnership with government, investors and communities. These investors bring together expertise to support community energy projects and sometimes provide affordable finance. Market testing of social investment providers has taken place regarding potential business models (Appendix 2).
9. There are at least 600 community energy groups established in the UK, with around half of these having projects in various stages of development. Projects are increasingly being funded by local share offers, with over 40 share offers and 10,000 community member investors raising around £17 million to date³.
10. For examples of live and completed Local Authority supported community energy projects refer to Appendix 3.

Delivery Options Considered

11. Public borrowing and private sector delivery: The preferred delivery option identified for the Council's Solar PV Investment Programme agreed at Cabinet in October 2013. Whilst this option provides the greatest income to the Council, it is not recommended for this proposal as the Council would have to borrow additional capital to that agreed last October. This would result in increased resource constraints to manage the project alongside the Solar PV Investment Programme.
12. Rent-a-roof: The roofs are leased to a contractor who funds and owns the PV system for 20 years and receives all payments. The Council/community group would not have to borrow any capital but all of the financial benefits (income from FIT⁴ and sale of surplus energy to the grid) would be enjoyed by the rent-a-roof provider. Additionally, the investment target for a rent-a-roof company is much higher and would effectively target a smaller number of the highest earning roofs.
13. Council loan and share offer: The Council takes out its own loan and/or uses reserves as required to cover the cost of a portfolio of solar PV installations. Once complete, the installation would be sold to the community, potentially through a local share offer. The Council would have control over the installation and be able to recapture the costs via the share offer. However, this model would not strengthen the viability of existing community enterprises, or facilitate new groups.
14. Community-based finance of Council owned buildings and land: The project will be financed through a community investment vehicle, expected to be incorporated as a community enterprise. The community building occupier will enter into an air-space lease with the community investment vehicle for 20 years, allowing the vehicle to install its equipment on Council owned buildings. Once the investment provider has been repaid, the community vehicle will earn an income from the generation tariff

³ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/274746/20140108_Community_Energy_Modelling_FinalReportJan.pdf

⁴ Refer to Appendix 1 for a glossary of terms.

plus the export tariff. It is expected that a percentage of the annual financial returns from the projects will be recycled to fund further community-based projects.

Preferred delivery model

15. The community-based finance option provides the greatest overall benefits to the Council and the city.

Proposed method of working

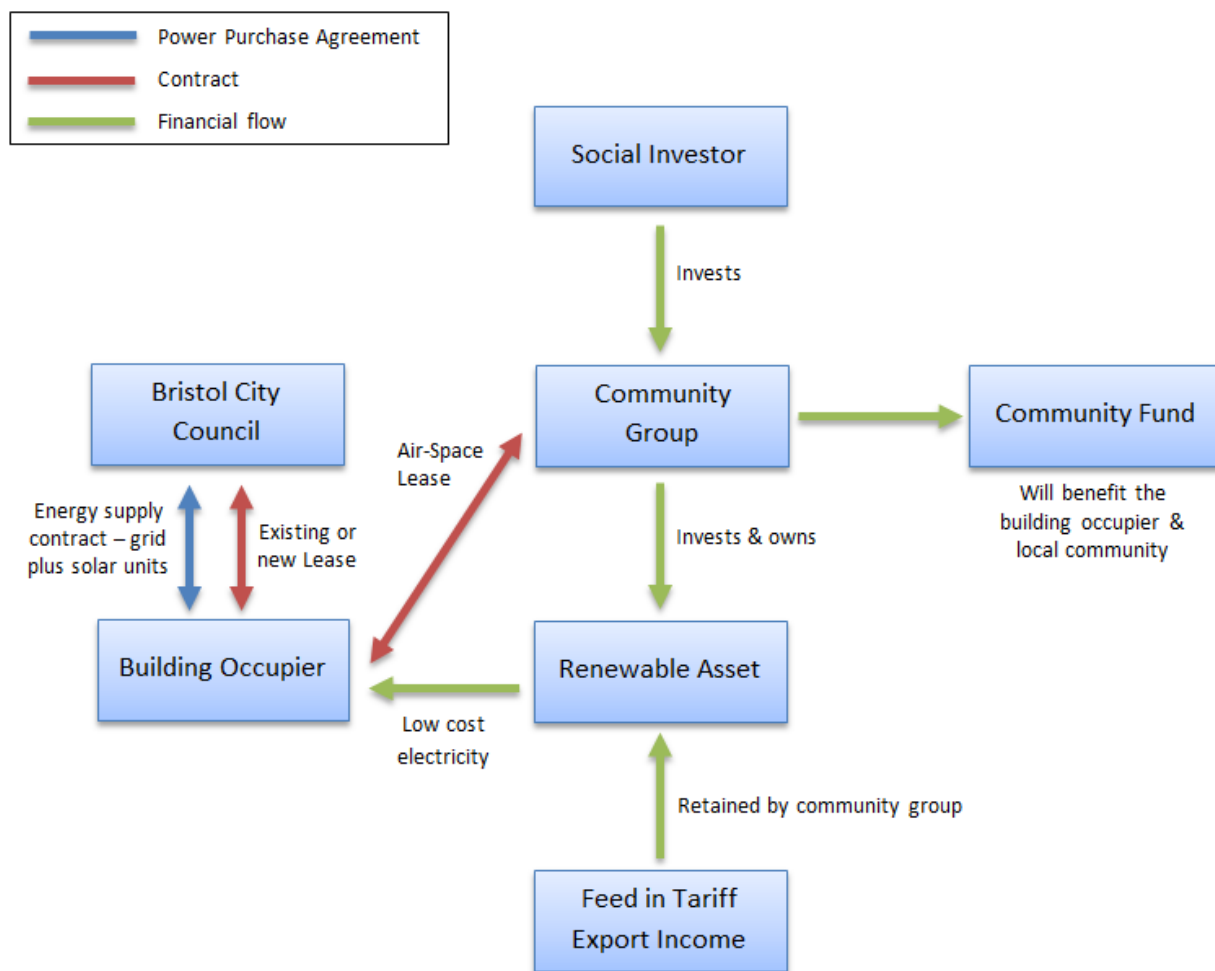
16. Definitions:

Building occupier = BCC tenant (typically 25 or 35 year lease)

Community group = Developer (raise finance for build, operation and maintenance of PV equipment)

BCC = Freeholder and energy supplier

- BCC identify solar suitable roofs and check a number of property criteria including, but not limited to:
 - An existing structural survey
 - An existing Energy Performance Certificate
 - Energy supply contract and historical energy use
 - Length of remaining lease
 - Conditions of lease
- Building is included in a Package of projects if it meets minimum criteria. (Refer to Appendix 8 for list of community buildings, forming first pilot “Package”).
- Results of the survey, asset test and business case for reduced bills form part of the engagement between BCC and the tenant, the building occupier.
- The building occupier establishes a sublease directly with a community group to include an Air-Space Lease (ASL) for the rights of installation, equipment ownership and operation by the community group. The ASL will be a template developed by BCC’s Legal team from previous projects.
- Where possible, BCC retain or re-instate an energy supply contract with the building occupier at competitive market rates. This will depend on other supply contracts being in place or on the risk profile of the building occupier.
- The community group and BCC sign up to a Power Purchase Agreement (PPA) for long-term sale of the solar units used on-site. This provides security to the community group’s business case and crucially allows the building occupiers to enjoy discounted energy.
- The community group manages the maintenance of the equipment and administers payments to investors and shareholders.



17. If required, community investment vehicles will appoint a social enterprise. The social enterprise will work with the community vehicle to ensure the rigour and quality of the community group and financing process. Each social enterprise offers different packages of services, including: legal expertise to support the community energy project; support in developing a share offer or other financing options; and provision of low cost debt (refer to Appendix 2).

Consultation and scrutiny input:

a. Internal consultation:

Corporate Property
Finance
Legal
Neighbourhoods and Communities
Human Resources

b. External consultation:

Bevan Brittan
Social enterprises (Appendix 2)
Community energy groups (Appendices 3 & 4)

Risk management / assessment:

Table 1 The risks associated with the implementation of a community financing model:							
No.	RISK Threat to achievement of the key objectives of the report	INHERENT RISK (Before controls)		RISK CONTROL MEASURES Mitigation (ie controls) and Evaluation (ie effectiveness of mitigation).	CURRENT RISK (After controls)		RISK OWNER
		Impact	Probability		Impact	Probability	
1	Community share issue will not raise sufficient funds	Medium	Low	BCC might look to supply some investment to make the project viable	Low	Low	Community Group
2	Community group will not be well structured	Medium	Medium	BCC will approve the sublease to a community group and will ensure due diligence	Low	Low	Community Group & Building Occupier
3	Financial Risks - sudden changes to material pricing (e.g. Solar PV panel import duties imposed by EU), underestimating operational costs or Feed-in-Tariff digression	High	Medium	Cost control mechanism as each package of properties is made available. Accurate specification (guided by pilot survey) to minimise delays/issues. Monitoring of UK deployment figures and FIT digression milestones	Low	Low	Community Group & Energy Service
4	Grid connection permission. The network may not be able to absorb a high volume of renewable installations	High	Medium	Pre-installation applications (known as G83/2) to Western Power Distribution. In some cases a solution might not be possible in which case specific properties might have to be removed from the programme	Low	Low	Energy Service & Community Group

Table 2 The risks associated with <u>not</u> implementing a community financing model:							
No.	RISK Threat to achievement of the key objectives of the report	INHERENT RISK (Before controls)		RISK CONTROL MEASURES Mitigation (ie controls) and Evaluation (ie effectiveness of mitigation).	CURRENT RISK (After controls)		RISK OWNER
		Impact	Probability		Impact	Probability	
1	City does not meet its CO ₂ savings targets	Medium	Medium	Focus on other energy saving strategies	Low	Medium	Energy Service
2	ELENA team does not meet the leverage factor set by the European Investment Bank	Medium	Low	Target PV investments that will offer a lower risk	Low	Low	Energy Service
3	Revenue not generated to support the operations of local communities	Medium	Medium	Release assets for community renewables	Low	Low	BCC
4	By not releasing assets to community groups, other measures such as energy efficiency may not be pursued	Medium	Medium	Promotion of solar PV to community groups stimulates communities to get involved in making energy efficiency improvements	Low	Low	Energy Service

Public sector equality duties:

See Appendix 6 for the Equalities Impact Assessment Relevance Check. This proposal has no significant equalities implications.

Eco impact assessment:

The significant impacts of this proposal are:

- Anticipated generation of 90,000 kWh of electricity per year and related CO₂ offset savings of 44 tonnes.
- Emissions and consumption of raw materials from production and transport of the solar panels.
- Waste from packaging and installation.

The proposals include the following measures to mitigate the impacts:

- It is proposed that the projects will utilise the council's solar PV procurement Framework Agreement, which was approved by Cabinet in October 2013. The mitigation measures included in the eco impact assessment therefore apply to this proposal, and are repeated in the checklist and below, for reference.
- The tendering process will assess the environmental impacts of manufacturing, transport and waste management arrangements. Scoring from the assessment will form part of the overall evaluation.
- Scheme will be project-managed to schedule installations in clusters so as to reduce the period in which a single street or neighbourhood is affected.
- Submit planning applications for listed properties/properties in conservation areas.

The net effects of the proposals are:

A positive net effect: a short period of construction (normally less than 48 hours per property) leads to long-term reductions in electricity consumption for building occupiers and CO₂ savings for the City.

Resource and legal implications:

Finance

The community-based financing option proposed by the Energy Service does not seek any additional financial resource (capital or revenue) from the Council beyond the officer time required, which would be predominantly undertaken by members of the Energy Service, who are funded by the ELENA grant.

a. Financial (revenue) implications:

Advice given by Robin Poole – Finance Business Partner
Date 27th August 2014

b. Financial (capital) implications:

Advice given by Robin Poole – Finance Business Partner
Date 27th August 2014

c. Legal implications:

Community groups are not able to use the solar PV framework to procure solar panels due to procurement restrictions. An air-space lease would need to be entered into between the Council's tenant and the community group installing the PV panels. In new community leases, a covenant can be inserted to the effect that the tenant shall be obliged to install solar PV or other renewables, if suitable.

State aid issues would only apply if BCC were to influence which community groups should invest and install.

Advice given by Andrew Jones – Legal Property Team Leader
Date 17th September 2014

d. Land / property implications:

The Council is proposing to offer BCC assets on a long lease to Community Groups to enable them to install and finance solar PV panels.

These buildings need to have a lease length suitable for the installation (over 18 years) and have no additional involvement from BCC, e.g. maintenance responsibilities.

Advice given by Richard Fear – Service Manager - Corporate Property
Date 25th September 2014

e. Human resources implications:

There are no HR implications for BCC staff ensuing from this proposal.

Advice given by Jill Mikkelson - Service Manager - HR People Operations
On behalf of Mark Williams - People Business Partner - Place
Date 27th August 2014

Appendices:

Appendix 1 – Glossary of Terms

Feed-in-Tariff

Feed-In-Tariffs became available in the UK on 1st April 2010 as a way of encouraging micro-generation and installation of renewable technology. Under this scheme energy suppliers have to make regular payments to householders and communities who generate their own electricity from renewable or low carbon sources such as solar PV or wind turbines.

The Feed-In-Tariff scheme is composed of 2 separate components and allows for an additional saving on the energy bills.

- Generation tariff: The energy supplier will pay the community investor a set rate for each unit (kWh) of electricity that the system generates. Rates depend on the technology that is used and the system sizes (a smaller system always earns a higher tariff than a larger system). This is linked to the retail price index.
- Export tariff: The energy supplier will pay the community investor an additional rate for each unit (kWh) of electricity that is exported back to the grid. This rate is the same for all technologies and size of system. This rate is paid irrespective of the amount of electricity actually used in the property, and is deemed (estimated) to be 50% of the total electricity generated. This rate is also linked to the retail price index.
- Electricity bill savings: Since the amount of electricity that needs to be bought from the grid is reduced.

The Government will guarantee the Feed-In-Tariffs as set out in current legislation for 20 years according to the levels set when the installation is being completed. It has also been confirmed in a Supreme Court Hearing at the High Court that government is legally obliged to pay the agreed Feed-In-Tariff levels so cannot change levels of support retrospectively once the installation has been completed.

Feed-in-Tariffs, p/ kWh Oct to Dec 2014	Up to 50kW – 12.13p Up to 150kW – 10.34p Up to 250kW – 9.89p
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As a result of falling solar PV panel costs, which resulted in very high returns for investors and householders, the Feed-in Tariff policy was reviewed at the end of 2011 by the Department for Energy and Climate Change (DECC).

A subsequent DECC consultation in summer 2012 now delivers a secure roadmap of incremental tariff digressions based on actual uptake rates of the previous quarter. With falling costs in equipment system owners such as Bristol City Council can again enjoy good returns on investment.

It is also important to note that the industry is currently attracting large volumes of inward investment from finance companies that see the long-term worth and stability of the PV market in the UK. In the first quarter of 2013, the UK was the fifth largest PV market in the world.

Appendix 2 – Market testing of social investors

	Energy4All	OVO Energy - Communities	Pure Leapfrog	Sharenergy Co-operative	Triodos Bank
Core objectives	Support the development of new renewable energy generating capacity and to involve ordinary people in the ownership and operation of the projects.	Energy supplier with the overriding goals of better service and better value for customers.	Business led charity whose mission is to ensure that community energy becomes a significant part of the sustainable energy mix in the UK.	Not-for-profit organisation which helps communities find, build and own renewable energy generation.	Bank that supports organisations whose mission is to generate positive social or environmental impact in a financially sustainable manner.
Services for community groups and/or councils	Support for project development and planning applications. Co-op start-up and engagement with local communities. Fund-raising. This is a key area of E4A expertise. E4A has raised c. £25m through public share offers for 10 co-operatives. Post-planning contracting and contract/construction management. Administration and operational support for the co-operatives during project operational phase.	Platform that enables Local Authorities, Housing Associations and Community Groups to create virtual energy companies. This enables them to offer bespoke tariffs, smart meter solutions, energy efficiency measures and support for local power generation. Also support collective switching activities, and offer a Smart Pay-As-You-Go product to people with prepayment meters.	<u>Affordable finance</u> : low cost loans to charities and community groups to enable them to afford the cost of renewable energy and energy efficiency equipment. <u>Accessible expertise</u> : pro bono and reduced cost professional services through our network of lawyers, accountants and other professional service providers. <u>Consulting</u> : we are advising local authorities and others about how to support community energy projects in their locality.	We are a co-op which helps the setup of renewable energy co-ops across the UK and across the technologies. We work with community groups, Local Authorities, landowners and developers. Typically, services involve site finding, business planning, landowner liaison, co-op setup, share offer support and administration services, although we have worked on every aspect of community renewable energy projects.	Have provided banking and corporate finance advisory services to community groups for many years and have a good understanding of IPS and other asset locked or charitable corporate structures and motivations. Looking to develop area of advising local authorities in the context of social impact bonds and potentially renewables. Through our equity funds we can also make direct investments into community projects.
Why would you like to work with BCC?	We would be very interested in contributing to the on-going development of the energy activity in Bristol. Bristol has an active community energy sector and we feel there would be a strong potential for individuals, communities and the local authority collaborating on this project.	Community organisations are best placed to ensure that the most appropriate energy solutions are designed and implemented. As part of OVO Communities we are developing ways in which we can use our scale and expertise to facilitate access to funding for community-scale renewable energy	We view local authorities as the natural partners for community groups to enable them to reach scale and to become viable social enterprises. Bristol City Council is a leader in this field and we believe that we would be able to use the knowledge gained from this project to support many	We believe that co-working between Local Authorities and community energy groups is one of the most important developments in community energy which will unlock the potential of the sector to deliver real change, and we have worked on this across the UK. We are one of the UKs leading bodies in	Already one of the UK's longest standing financiers in the renewable energy sector. encouraged by DECC's initiative to encourage community ownership at the heart of future renewable energy development as this has the possibility to generate significant social and community cohesion

	Energy4All	OVO Energy - Communities	Pure Leapfrog	Sharenergy Co-operative	Triodos Bank
	We would welcome the chance to bring our current experience to Bristol to develop a vibrant community-based solar energy project and to learn from working with the council and other local organisations.	generation. As a fast-growing company based in Bristol we are particularly keen that we support the Bristol community by creating jobs and supporting community involvement in the energy sector.	other local authorities and community groups around the country. We would like to strengthen our association with Bristol and to help the local groups get to critical mass and to achieve viability so that they can be strong partners for the Council.	terms of successful energy co-op delivery and we believe we are uniquely placed to support ambitious and timely initiatives of this kind.	benefits as well as new renewable deployment. Head office is in Bristol.
Experience of working with communities and/or councils	E4A Ltd has developed 13 community co-operative over the past 12 years since its inception in 2002. The co-ops we have supported have raised around £25m through public share offers that E4A have prepared on behalf of the co-ops. The last three share offers that E4A has supported have all been oversubscribed and have raised c. £9m. We have not yet delivered a project with a local authority but are currently at an advanced stage of development of a roof mounted PV project with a large council.	Since the start of 2014 we have been working in partnership with Local Authorities, Housing Associations and Community Groups to design, develop and offer our OVO Communities platform. To date all of our activities with communities and local authorities have been self-financed. We do not own any generation assets, and do not have immediate aspirations to do so, so we are completely technology and supplier-neutral when it comes to renewable power.	We have unrivalled experience of supporting the community energy sector, having financed or provided professional support to well in excess of 100 projects, including many of the leading projects in the field. We have financed over 30 projects by means of grant and 25 projects have been funded via loans. We are also currently consulting to or advising 4 local authorities and have begun the process of engaging with several more.	We have worked with a large number of community groups, often on projects involving LA-owned land. All the projects we have delivered to date are financed by a core community share offer and in most cases this has been the sole source of capital funding.	Triodos Bank has lent money to a variety of community energy projects, using a project finance structure. An arrangement whereby a community group takes ownership of a Special Purpose Vehicle (the project company), is Triodos' preferred method of financing community projects, as it protects the community group from the project (and vice versa). We do not have significant experience in advising local authorities.
Do you use an external source of finance?	E4A is self-financing. Our income is from two main sources. We receive annual administration fees from the co-ops we have helped to set-up and continue to administer and we receive fees each time we promote a successful share offer. On a	None	Our loan finance is sourced through Big Society and through corporate sponsors such as Barclays and British Airways. We have used these sources to lend out or commit £1.25 million of loans to 25 community energy projects across the	Our focus is on community-led community-owned projects which offer ownership to normal members of the public through community share offers – while not ignoring the potential to work alongside public or private	<u>Triodos Bank – lending:</u> Our bank lending to the renewables sector is from our own balance sheet and is financed by the bank's savers and depositors. The bank's renewable loan book is currently around £150m and it covers all areas of the UK

	Energy4All	OVO Energy - Communities	Pure Leapfrog	Sharenergy Co-operative	Triodos Bank
	project-by-project basis we have supported co-operatives to secure funding from other sources to finance the development of their project. For example, in the past we have helped co-ops secure funding from regional development agencies and more recently we helped one co-op secure funding from Pure Leapfrog and Key Fund.		UK.	sources of loan funding where available. We have been involved in share offers to the total of some £4m to date	and Ireland. <u>Triodos Renewables plc:</u> Acquires and develops renewable assets and now has over 60MW under ownership across the UK. This company has financed its activities by raising equity (over £30m to date) from individual investors and debt from Triodos Bank and other mainstream banks. <u>Triodos Corporate Finance:</u> We operate a corporate finance advisory team from our Bristol office whose principal activity is raising external risk finance for clients in the social, renewable, fair-trade and organic sectors. The team raises finance from both institutional and retail investors including Triodos customers and has raised over £50m for clients in the last 4 years.
Finance models	We have supported co-ops to finance their projects through a mix of equity (raised from co-op members) and debt (in the past from the Co-op Bank). Our co-op model aims to make a share interest payment year-on-year to members who have invested in the project. We	Flexible. Will likely be through a combination of crowdfunding (via our existing customers as well as the community) and debt financing raised by OVO and made available to our Communities partners.	Exclusively offer loans for up to 8 years. The loans are secured against the assets being financed. Interest rates range from 4-6% and there are no additional fees to pay. We are currently building a new fund that will be able to issue two types of finance:	Typically projects we work with would use a 100% community equity or equity/loan split up to 50%. We do not provide capital finance ourselves but often carry out some development work at risk. We have introduced the use of early pioneer share offers as a way	This could be straight debt in the form of project finance (through the bank's lending team), it could be equity or mezzanine (from Triodos Renewables plc) or it could be investment readiness support, lead advisory and raising of external equity and debt (through Triodos

	Energy4All	OVO Energy - Communities	Pure Leapfrog	Shareenergy Co-operative	Triodos Bank
	encourage as much local membership of the co-ops as possible. In this way the financial benefit from the projects stays in the local area. The solar projects we have been involved with to date have been all-equity financed, the funds raised by co-op members. Our co-ops also aim to pay a proportion of income into a community fund, dependent on the project performance year on year.		<ul style="list-style-type: none"> - Bridge finance to enable community groups to develop projects prior to a share issue being undertaken. Pure Leapfrog will acquire the project on behalf of the community group and give the community the right to purchase the project once the share offer is complete. - Long-term loans of 15 years to enable community groups to access commercial type debt to projects that are too small for conventional finance providers. 	of covering development cost gaps. All of the projects we work with incorporate community funds or other community benefits in the form of cheap electricity or heat.	Corporate Finance team).
Would you underwrite or expect BCC to underwrite finance?	More discussion needed.	We will do our best to lower the cost of financing for the Council, which could include underwriting debt financing.	To date, we have not required any local authority underwriting of the debt financing that we provide. We do not believe that this will be required for our new fund either. However, we would recommend that the Council provide this underwriting to reduce the cost of capital and enable first step-in rights and control over assets.	We would not underwrite debt financing ourselves. Normally debt in community energy projects is secured on FiT income and does not require security. Equity offers may be underwritten but more commonly are not.	Triodos is not in a position to underwrite any debt financing. The possibility of the Council underwriting the debt financing would clearly be of help, but we would prefer to develop sustainable market based solutions to financing projects.
Conditions for working with BCC and community groups	For discussion.	There are no upfront fees for our OVO Communities partners; we aim to recover all upfront costs over the duration of the partnership. To do this we provide all the elements of our platform at	If we are acting as a finance provider, the terms of our finance would cover our costs. While we currently do not charge any fees for our finance, as we scale up our lending activities, we are	We have no up-front conditions. Our fees are worked out on the basis of the work we carry out on a project-by-project basis	This depends on the relationship (exclusive or non-exclusive etc.), quality of individual projects, extent of Council financial support etc.

	Energy4All	OVO Energy - Communities	Pure Leapfrog	Sharenergy Co-operative	Triodos Bank
		cost plus 3.5%, which is then passed through to customers via their energy tariff.	likely to start to charge some fees in the future. We do not charge community groups any up-front costs for providing professional services through our network, although we do expect a donation back to the charity after any successful share offer in recognition of the value we have provided		
Restrictions on what you will finance	We would be less able to finance smaller projects, but this is for discussion.	This will depend on how quickly we can progress the development of our financing solutions	We will only fund projects that have significant social impact. At the moment, the projects that we fund are creating over £5 of funds to be used for social benefit for every £1 of funding that we provide.	We are not finance providers per se but facilitators of community financing. In general the share offer route is proven up to the £5m level. Most projects are more sensibly split into finance units of £1m or so. Projects under £150k are not viable on their own under the share offer methodology.	No – we have the capability to finance projects up to 20MW although would expect most community led projects to be much smaller than this and in the range 0.2 – 5MW. We will consider ground mounted solar on land of soil quality 3b and below.

Appendix 3 – Examples of live and completed Local Authority supported community solar PV projects

Organisation	Size	Finance model
Brixton Energy and Lambeth Council	3 projects have been completed so far, with solar PV installations on social housing at a total of 135kW. A fourth project is currently in the planning phase.	A combined total of £183,650 has been raised so far via community share offers.
Empower Community and City of York Council	Solar PV installations on 2327 social housing properties, providing free daytime energy. Refinancing of the panels will enable a further 3000 installations.	Large UK institutional pension investor loaned £10.1m, as an amortising 20 year loan. The profits will be reinvested into the Sunderland community.
Plymouth Energy Community Renewables	PPA's and leases in place with 9 buildings, at a potential of 270kW. 6 schools installed and generating to date. Solar PV installations offered to schools, community and commercial properties.	£500,000 loan, deferred for 5 years, from Plymouth City Council and £602,000 raised via community share offer. Loan to be repaid over 15 years, from year 6.
REPOWERBalcombe	Initial aim of 224kW (10% demand and 60 homes). Overall aim of producing 100% demand from renewable technologies.	Aim to raise £300,000 via share offer. This investment will generate around £5,500 per year for a community benefit fund.
Southern Staffordshire Community Energy and Cannock Chase Council	29kW of solar PV installed on two community buildings near Lichfield. New proposal accepted by Cannock Chase Council to install solar PV on up to 300 Council properties, subject to suitability.	£54,000 was raised for completed community buildings via community share offer. Up to £750,000 may need to be raised via share offer, depending on the amount of suitable properties.
West Solent Solar Co-operative	2.4MW solar farm on a 12.6 acre field.	£2.2m was raised via a share offer and an additional £260,000 was raised via bonds. £5,000 a year will be set aside for a community fund, from year 5.

Appendix 4 – Market testing of active Bristol-based community groups

	Ambition Lawrence Weston	Bristol Energy Cooperative	Bristol Power Cooperative
Core objectives	Community regeneration.	a) To enable meaningful cuts in carbon emissions, and reduce dependence on unsustainable sources of energy. b) To work co-operatively with people and communities to make carbon reduction technologies available to all regardless of financial resources, and support mutual action to respond to the challenges of climate change. c) To fund and implement renewable energy and energy efficiency measures, in collaboration with people, communities and businesses.	Aim: 100% locally owned renewable energy for (Zero Carbon) Bristol.
Experience of working on community energy projects	Small experience group made up of residents, pro-bono professionals representatives (e.g. engineering, local councillor, community workers).	The co-op was formed in 2011 by people from a number of community energy groups across the city. We have over 600 supporters and over 200 investor-members. The co-op's work is overseen by a board of directors. They have worked in the environment, construction, healthcare, telecoms and IT industries, as well as the cooperative, social and company directorship sectors. Their skills include planning, negotiating, consultancy, and managing teams, large budgets and projects. Equally importantly, they were all attracted to the director role through an existing involvement with local energy groups or because they wanted to help the development of community energy. Our supporters are actively engaged in the development of the co-op, which has allowed us to develop a number of specific working groups – solar PV, wind, energy efficiency and finance – along with a more general volunteers group. Each working group has a director, and members often work in the environmental technologies sector.	4 years, with a varied team including finance, communication, project management.
Delivery model for completed and ongoing projects	Developing working group at the moment with aim to identify potential new renewable energy projects.	Our business model is to develop renewable energy installations at scale. Profits from this will then be used to a) develop further renewable projects and b) cross-subsidise energy efficiency	We offer direct reduction in energy bills via free roof mounted solar PV for homeowners. Solar placed in 23 roofs in Lockleaze in a 'Proof of Concept'. More installs planned in South Bristol

	Ambition Lawrence Weston	Bristol Energy Cooperative	Bristol Power Cooperative
		<p>projects. We began our first community installation in 2012 when we raised £125,000 from 160 investors to install solar panels on 3 community buildings – Hamilton House, Knowle West Media Centre, and Easton Community Centre. Since then we have expanded our solar activities, and developed a wind project. As a result of this work, last year we signed an option with REG Windpower to buy a 4MW wind farm in development just north of Bristol. This would be a multi-million pound project, and should have a planning decision within the next six months. Re. solar, earlier this year we raised a further £120,000 via a second share offer to put solar panels on additional community buildings. It's hoped that some of these will be BCC-owned. Our financial model for solar on community buildings is highly transferrable to commercial buildings, and we will shortly be launching this offer to the business community. We also have a number of ground-mounted and domestic solar projects in development. This potential portfolio reflects the significant development work that has been done in the past 18 months. Wherever the panels are located, the financial returns will be used to further the aims of the coop and provide an appropriate level of return to our investors. In addition, we run an energy switching scheme, and were part of a joint bid to a Technology Strategy Board R&D competition for Localised Energy Systems.</p>	<p>funded by a community share issue. Tentative talks with other groups about how to scale up.</p>
How do you or would you involve the local community?	<p>Open membership resident's organisations, community events, surveys and questionnaires, quarterly magazine.</p>	<p>We are an active member of the Bristol Energy Network, and most of our supporters live in the city. They enabled us to find our first buildings for community solar, and are helping to provide a pipeline of further buildings and other projects. And in the other direction, we aim to be a useful</p>	<p>We talk to communities as directly as we can, engaging them in groups via local community groups and community centres, and through referrals from satisfied homeowners. We are exploring how we can engage more people, more directly, at lower cost, offering more benefits.</p>

	Ambition Lawrence Weston	Bristol Energy Cooperative	Bristol Power Cooperative
		<p>resource which the community can access. We have an informative web site, produce regular newsletters, hold social events, and welcome volunteers. We also run activities such as Big Green Week events and stalls at the Harbourside Festival. We hold a monthly energy reading group, and are currently mentoring 2 participants on the Youth Community Energy Catalysts scheme run by the Centre for Sustainable Energy. We also recently ran a community energy skills day at Windmill Hill City Farm. In the future we plan to work with existing agencies to help improve the breadth and impact of our work. We were delighted to be invited recently to give a presentation at the Bristol Older People's Forum, and are currently developing a one-stop-shop package for Neighbourhood Partnerships on renewable energy and energy efficiency from a community perspective. We are also promoting the Zero Carbon Britain project by the Centre for Alternative Technology, which details how a modern society could be run on zero emissions by 2030, using only current technology. We think it's vital to be promoting positive solutions like this to counter the usual negativity around the climate change debate.</p>	<p>This would require us to have found scalable sources of finance for renewables.</p>
Do you or would you offer support to less experienced groups?	Not at present.	<p>One of our core aims is to work co-operatively to respond to the challenges of climate change, so we actively look to provide support on this to others where we can. For example, we worked with Easton Energy Group on our project to install panels on Easton Community Centre, and with Bedminster Energy group to assess the feasibility of panels on the Faithspace building and the Southville Centre. Ultimately these two buildings were not suitable, but we were able to provide the building users with follow-up energy</p>	<p>Few community groups tackle fuel poverty directly with solar PV on homes, so there is plenty of interest in our work. We started sharing ideas via our website and have talked and met with many groups (e.g. WREN, TRESOC, Dorchester, Pure Leapfrog, Big Local, Locality). This may evolve into resources to help community groups replicate our model.</p>

	Ambition Lawrence Weston	Bristol Energy Cooperative	Bristol Power Cooperative
		efficiency advice. In addition we regularly give advice to other co-ops who are starting up and have asked us for advice or permission to use our materials. These include Exeter Community Energy, South East London Solar Coop and most recently Keynsham Community Energy. As we grow and develop our capacity, this is an area that we will be keen to develop further, providing a 'turnkey' package for smaller groups who want to progress a specific project without all the hassle of creating their own organisation.	
Why would you like to work with BCC?	It would unlock opportunities to local renewable projects which we currently don't have access to.	We believe there is a natural fit between our two organisations - we are both community-centred. We would be able to provide additional finance and project development effort to help the council meet its renewable energy targets; in return, if the council provided access to its roof assets etc., we would be able to engage more people on energy awareness and save them money through providing subsidised electricity.	We would like to help the council in its plans offer to help get solar PV on council (and other) homes – and more – i.e. to reduce energy bills. There is a strong community appetite for this.
Restrictions on what projects you will help to deliver	We are interested in local sites to our area such as the 20MW wind power on Lawrence Weston Moor.	None.	We are keen to see everyone in the Bristol area have access to an integrated energy offer – preferably through their own local community groups – and to help this spread to other places.
Experience of collaboration with other community groups	Membership of Bristol Energy Network, willing to meet similar groups to us with a view to running common project e.g. 20MW wind power on Lawrence Weston Moor.	We are part of the Bristol Energy Network and have been working closely with Bristol Power Coop to promote discussion around planning for a future Zero Carbon Bristol and the steps that need to be taken to achieve that. Bristol Power Coop and Bristol Energy Coop have different but overlapping business models. We looked carefully at the benefits of a merger but have concluded that at present we are more effective as separate, mutually supportive organisations, although merging remains an option for the future. We communicate regularly with many Community Energy groups and trade organisations around the	We are members of BEN and Bristol Solar City, and would expect to see increasing collaboration and co-operation as a period of exploration and experimentation turns into consolidation and scaling up, as people figure out what works best and merge models. We recently organised Bristol Community Energy Day on September 13 precisely to help develop a communication and partnership model that would allow community groups to work together to get to scale in 2015, through working with each other, and commercial partners.

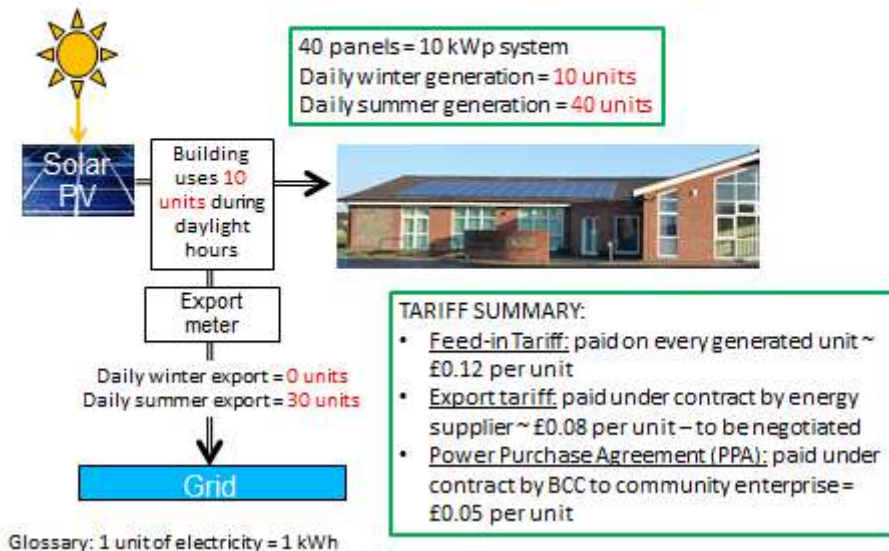
	Ambition Lawrence Weston	Bristol Energy Cooperative	Bristol Power Cooperative
		country and have established good working relationships locally with Bath and West Community Energy and Low Carbon Gordano. We are in discussion over a number of energy projects & initiatives in South Gloucestershire where two of our directors live.	
Experience of competition with other community groups	We compete with BCC initiators and programmers in that our community ends up largely having to accept their models.	As the groups above expand there is likely to be overlap between the type of projects we are developing and the potential sites we are assessing, e.g., solar farms. The groups have had an initial meeting to discuss a process for managing such scenarios, and a follow-up meeting will shortly be convened. However, it is important to note that the potential for community energy is so large that there is no a priori reason for groups to compete; we are a long way from there being a shortage of opportunities!	We compete to figure out what would be the best integrated energy offer to the community. This involves a lot of co-operation and collaboration, e.g. on a Community Strategy for Energy. We'd expect partnerships to emerge that lead to consolidation and co-operation. We see that government strategies for community energy, solar energy, and the green new deal are creating an alignment of interest from potential commercial partners to work with communities – to deliver locally owned distributed renewables and other game changing ideas.
What do you consider to be a fair allocation of projects to community groups?	We need BCC to recognise that we need a mechanisms that we can work in partnership with them to ensure the pay offs actually come to our community. Particularly employment and upskilling for local trades, establishment of local businesses as well as lower cost of energy (cost of living). Lower energy prices needed – but we are already relatively low users of energy. Ensure the local regeneration group is stabilised (financially, employing deliverables by another income stream. And identifying the good things that these efforts produce are identified with the local community group doing them, giving it all credibility with local residents and also allows them to feel, finally empowered, and influencing their social environment positively.	We suggest the Council signs a co-operation agreement with the Bristol Energy Network (BEN) along the same lines as the one that Bath and North East Somerset Council signed with Bath and West Community Energy (BWCE). This allowed BWCE to roll out a large number of projects at speed, plan properly and raise the corresponding project finance. BEN members would then be able to organise and finance the projects internally, while providing a single point of contact for the council.	Communities find it hard to enter procurement processes due of lack of resources and financial track record – and communities greatly prefer cooperation to competition anyway. How does community 'right to bid' make it easier for community groups to bid in procurements? The best model would appear to be that of Bath and West Community Energy (BWCE), where there is a co-operation agreement between the council and the community – then let (e.g.) BEN and its members allocate work – the way BASIC (Bristol Area Solar Installer Co-op) shares work.

Benefits for everyone

Stakeholder	Daily winter benefit	Daily summer benefit
Social investor/ Community enterprise	Generation: (10 units x £0.1) + PPA: (10 units x £0.05) = £1.50	(40 units x £0.1) + (40 units x £0.05) = £6.00
BCC	Export: 0 units x £0.08 = £0.00	30 units x £0.08 = £2.40
Building occupier	Offsetting: 10 units x £0.15 = £1.50	10 units x £0.15 = £1.50

Tariffs and energy savings

- BCC fit an export meter to claim sale of solar units to energy supplier



Appendix 6 – Equalities Impact Assessment

Bristol City Council Equality Impact Relevance Check


This tool will identify the equalities relevance of a proposal, and establish whether a full Equality Impact Assessment will be required. Please read the guidance prior to completing this relevance check.

What is the proposal?	
Name of proposal	Community Investment in Renewables
Please outline the proposal.	Utilisation of council-owned buildings across the city for the installation of renewable technologies, funded through community based finance. An initial trial of a package of around 100kW of solar PV will be installed on pre-assessed buildings.
What savings will this proposal achieve?	Reduce the City's carbon emissions and cut the Council's energy costs without the need for capital expenditure.
Name of Lead Officer	Indira Norton

Could your proposal impact citizens with protected characteristics? (This includes service users and the wider community)
Please outline where there may be significant opportunities or positive impacts, and for whom.
<p>The identified council-owned buildings are located in a range of areas across the city. Our initial trial list includes buildings in Easton, Knowle, Shirehampton and Brislington. We have a further list of potential buildings which we hope to additionally include once this pilot has been proven to be successful.</p> <p>This proposal will generate revenue to support the operations of local community groups across the city, provide dividend repayments to local shareholders, will strengthen the viability of existing community enterprises and facilitate new community enterprises. This programme will also galvanise local communities to make an important contribution to maintaining energy security by reducing the dependency on imported electricity, tackling climate change and reducing utility charges for the wider community. This will lead to wider social and economic benefits.</p>
Please outline where there may be significant negative impacts, and for whom.
Due to the proposed delivery model, the building users will not see much financial

benefit from the solar PV, as the electricity generated will be purchased by BCC via a Power Purchase Agreement. However, we will be encouraging the financing community groups to incorporate a profit share scheme or community fund.

<p align="center">Could your proposal impact staff with protected characteristics? (i.e. reduction in posts, changes to working hours or locations, changes in pay)</p>
<p>Please outline where there may be significant opportunities or positive impacts, and for whom.</p>
<p>This proposal will not result in any reduction in posts, nor changes to working hours or locations. It may result in an opportunity for a part time project manager post.</p>
<p>Please outline where there may be negative impacts, and for whom.</p>
<p>Minimal input will be required from other Services within the Council - staff within Property will need to be liaised with regarding the leases of the chosen buildings. Legal colleagues will be required to approve the contracts between BCC and the financing community groups.</p>

<p align="center">Is a full Equality Impact Assessment required?</p>	
<p>Does the proposal have the potential to impact on people with protected characteristics in the following ways:</p> <ul style="list-style-type: none"> • access to or participation in a service, • levels of representation in our workforce, or • reducing quality of life (i.e. health, education, standard of living) ? 	
<p>Please indicate yes or no. If the answer is yes then a full impact assessment must be carried out. If the answer is no, please provide a justification.</p>	<p>No, this proposal should result in positive benefits to the wider community across the whole of the city.</p>
<p>Service Director sign-off and date: 14 August 2014</p> <p></p>	<p>Equalities Officer sign-off and date: 14 August 2014 Andrew McLean</p>

Appendix 7 – Eco Impact Assessment

Title of report: Community Investment in Renewables				
Report author: William Edrich				
Anticipated date of key decision: 7 October 2014				
Summary of proposals: Utilisation of council-owned buildings and land for renewable energy generation, funded through community based finance. Initial trial of around 100kW of solar PV installations				
Will the proposal impact on...	Yes/ No	+ive or -ive	If yes...	
			Briefly describe impact	Briefly describe Mitigation measures
Emission of Climate Changing Gases?	Yes	+ve	CO ₂ savings. The trial is estimated to save 44 tonnes per annum.	See summary
		-ve	Climate changing gases will be produced during the manufacture, transport and installation of the panels.	
Bristol's vulnerability to the effects of climate change?	Yes	+ve	Reduced dependency on fossil fuel generation	N/a
Consumption of non-renewable resources?	Yes	+ve	Reduced consumption of fossil fuel generation power, by generating an estimated 90,000 kWh/ year of electricity for the trial.	N/a
		-ve	Transport activities during construction; manufacturer of components	Tender specification to score for reduced carbon/energy footprint and life-cycle impact assessment of the supply chain.
Production, recycling or disposal of waste	Yes	-ve	Packaging (cardboard) and aluminium rail off-cuts	Packaging and waste materials from installation will be recycled where possible.
The appearance of the city?	Yes	-ve	Change in colour of roofs. Some properties may be	Where possible, same contractor and same product in one

			Listed.	neighbourhood. Panels to be of uniform arrangement eg portrait, block arrays. Installation on Listed properties is subject to Planning approval.
Pollution to land, water, or air?	Yes	-ve	Some local air pollutants will be produced from transport.	Transport arrangements will be considered within the tender process.
Wildlife and habitats?	No			

Consulted with: Steve Ransom

Summary of impacts and Mitigation - to go into the main Cabinet/ Council Report

The significant impacts of this proposal are....

- Anticipated generation of 90,000 kWh of electricity per year and related CO₂ offset savings of 44 tonnes.
- Emissions and consumption of raw materials from production and transport of the solar panels.
- Waste from packaging and installation

The proposals include the following measures to mitigate the impacts ...

- It is proposed that the projects will utilise the council's solar PV procurement framework agreement, which was approved by Cabinet in June 2013. The mitigation measures included in the eco impact assessment therefore apply to this proposal, and are repeated in the checklist and below, for reference.
- The tendering process will assess the environmental impacts of manufacturing, transport and waste management arrangements. Scoring from the assessment will form part of the overall evaluation.
- Scheme will be project-managed to schedule installations in clusters so as to reduce the period in which a single street or neighbourhood is affected.
- Submit planning applications for listed properties and properties in conservation areas.

The net effects of the proposals are....

A positive net effect: a short period of construction (normally less than 48 hours per property) leads to long-term reductions in electricity consumption for building occupiers and CO₂ savings for the City.

Checklist completed by:

Name:	Laura Davis
Dept.:	Energy Service
Extension:	22642
Date:	9 July 2014
Verified by Environmental Performance Team	Steve Ransom

Appendix 8 – Summary of properties in first Works Package

Building	PV System size
The Mill Youth Centre, Ashley Road, Easton, BS5 0YJ	16.7 kW
Redcatch Community Centre, Redcatch Road, Knowle, BS4 2EP	8.0 kW
Shirehampton Public Hall, 32 Station Road, Shirehampton, BS11 9TX	29.0 kW
South Bristol Sports Centre, West Town Lane, Brislington, BS14 9EA	50.0 kW