

Title of Report	Hackney Light And Power Residential Solar PV Pilot - Business Case
Key Decision No	F S297
For Consideration By	Cabinet
Meeting Date	22 January 2023
Cabinet Member	Clr Mete Coban, Cabinet member for Climate Change, Environment and Transport
Classification	Open with Exempt Appendices
Ward(s) Affected	All
Key Decision & Reason	Yes
Implementation Date if Not Called In	31 January 2024
Group Director	Jackie Moylan, Interim Group Director, Finance

1. Cabinet Member's Introduction

- 1.1. As signatories to the UK100 Agreement, and in line with the commitments made nationally and internationally at the Paris Summit in 2015, Hackney Council committed to ensuring the local authority runs on 100% clean energy by 2050. In July 2019, the Council declared a Climate Emergency with the ambitious target of becoming a net-zero carbon Borough by 2040. In May 2023, Hackney Council confirmed its position as one of the greenest in the country by bringing its net-zero commitment for its non-tenanted buildings and transport fleet forward to 2030.
- 1.2. Progress towards fulfilling these ambitions will be achieved through a combination of measures, including a structured and regularly monitored approach to energy efficiency across all the Council's directorates and functions, a strategic approach to corporate generation and procurement of energy, the development of clean transport systems and fleet solutions, and

the promotion of a zero carbon built environment. All of these are underpinned by specific manifesto commitments both in 2018 and 2022.

- 1.3. An integral part of meeting this obligation is the delivery of projects that will maximise the potential of the local authority's residential roof space for the deployment of renewable energy-generating infrastructure.
- 1.4. In Hackney, the population size has increased by 5.3%, from around 246,300 in 2011 to 259,200 in 2021 and the Borough's population is expected to grow to 360,000 by 2050. Meanwhile, the level of local energy generation is significantly less than the consumption of the Borough's 100,000+ households. We also know that London generates the lowest level of electricity from small-scale domestic solar photo-voltaic (PV) systems in the UK, and anecdotally, Hackney would appear to be consistent with that finding. This presents a compelling case for investment in local energy generation.
- 1.5. Hackney's case to generate its own energy is, therefore, further strengthened because it allows the Council to implement its own unique supply strategy, which offers more equitable or lower tariffs and clean energy, which will potentially benefit consumers generally, particularly those in fuel poverty. There are also wider benefits to local energy generation in relation to UK energy security.

2. Group Director's Introduction

- 2.1. This report requests the approval to progress with plans set out to deliver Hackney's branded residential solar project to supply locally generated solar energy to residents in the Borough.
- 2.2. Over the last three years, the Council's attention has been focused on using the Hackney Light and Power (HLP) brand for the delivery of energy services across the Borough under the supervision of the Delivery Board, which is constituted to include relevant Council stakeholders at elected member and officer levels. The Board has been taking forward a programme of activities which includes the Residential Solar project.
- 2.3. As one of Hackney Light and Power's main priorities and in line with commitments made in the 2023 Climate Action Plan, HLP aims to address the increasing demand for sustainable energy in Hackney by delivering a pilot project to install one megawatt (1MW) of solar Photo-Voltaic (PV) generation on Hackney Council-owned housing estates. Hackney Light and Power will leverage its expertise and partnerships to ensure the efficient and reliable delivery of this project.
- 2.4. In June 2022, Hackney Light and Power, as the Council's energy services arm, obtained £80k of funding from the Greater London Authority (GLA)'s Local Energy Accelerator (LEA) programme to develop a Business Case solution for a pilot of Residential Solar PV to a level that can be used within

the Council to secure further funding to develop and install the PV in 2023/24.

- 2.5. Delivery of the pilot project will enable the installation of 1MW solar PV generation on residential buildings, promoting local renewable energy generation, local “green” jobs and the reduction of carbon emissions.
- 2.6. Initially delivered through Hackney Light and Power (Hackney Council’s energy services arm), the strategy includes a plan to establish Hackney Light and Power as a municipal energy company to serve as the asset owner and holding company, provide governance, funding and manage the contracts as a wholly owned subsidiary of Hackney Council. This is subject to a future decision by Cabinet.
- 2.7. The proposed approach for the residential solar pilot project is detailed in a comprehensive business case (Appendix 1) which has been produced in collaboration with Emergent Energy, a specialist Hackney-based energy consultancy. The document includes the full context of decisions made so far in relation to the project and is referenced throughout this Cabinet report.
- 2.8. It should be noted that the business case references the setting up of Hackney Light and Power as a municipal energy company. The decision and governance arrangements for this process will be set out in a further Cabinet paper.
- 2.9. Following the decision to approve the pilot project set out in this paper, Hackney Council will commence the work through Hackney Light and Power as the Council’s internal energy services arm.
- 2.10. The 1MW pilot is planned to be delivered by Emergent Energy and branded as Hackney Light and Power to residents as a “White Label”. The HLP branding has been developed.
- 2.11. Hackney Council will contract Emergent Energy as its primary contractor for local supply operations for the delivery of microgrids. This will include:
 - 2.11.1. Boundary meter works
 - 2.11.2. Solar installation works (contracted out to an installation specialist)
 - 2.11.3. Customer onboarding works.
- 2.12. Hackney Council will be the asset owner and solar generator with a view to transferring the asset ownership and solar generation to Hackney Light and Power as a municipal energy company at a later date - to be proposed in a further Cabinet paper.
- 2.13. The pilot project will aim to generate electricity from the solar PV systems that will be supplied to residents of Council housing estates at a lower price than they would otherwise be able to buy from the national grid. In this way,

the residents will enjoy cost savings from using solar PV from which they would otherwise be excluded.

- 2.14. While the solution enables the supply of locally-generated electricity to residents, this is not to the exclusion of using solar electricity on-site for the landlord supplies.
- 2.15. The income that is generated from the sale of electricity produced from the solar installations will enable the Council to recoup its £2m financial investment that is proposed and expected to be made into the scheme.

3. Recommendation(s)

Cabinet is recommended to:

- 3.1. Agree the proposed approach as set out in paragraphs 4.1 to 4.25 of this report for setting up Hackney's branded residential solar project to supply locally generated solar energy to residents in the Borough.**
- 3.2. Delegate authority to the Group Director of Finance in consultation with the Hackney Light and Power Delivery Board; and, with the Cabinet Member for Energy, Sustainability and Transport to:**
 - 3.2.1. proceed with plans set out in the Hackney Light and Power Residential Solar Business Case (Appendix 1)**
 - 3.2.2. agree the final lists of sites and buildings to be included in the pilot**
 - 3.2.3. enter into contracts and create all other necessary or ancillary agreements with suppliers in accordance with the strategies set out in the report and relevant business case.**
- 3.3. Spend approval of up to £1.96m is requested of capital investment by the council to enable design, installation and operation of a solar powered system as outlined in this paper.**

4. Reasons For Decision

- 4.1. The Council has declared a Climate emergency and set a target to achieve Net Zero emissions across its full range of functions by 2040. Against these objectives, a Climate Action Plan (CAP) has been produced, which recognises the decarbonisation of energy supply as a key delivery pathway for achieving the target.
- 4.2. In line with the CAP strategy, the Council plans to install six megawatts of solar capacity on Council-owned housing estates by 2030. This equates to one megawatt per year starting in 2024. Deploying solar in excess of this

target will make achieving other aspects of the strategy easier and align with Hackney's broader ambitions.

- 4.3. Hackney Council's Mayoral 2022 to 2026 manifesto committed to developing a plan to expand solar panels across all Council estates. Part of the Council's strategy is to develop a plan to utilise solar on up to fifty per cent of the residential roof space owned by the Council. This would mean solar being installed on around 1,400 residential buildings.
- 4.4. Hackney Council has also committed to establishing a municipal energy company focused on the deployment of solar PV and other renewable projects that will aid the Council's decarbonisation ambitions and plans. The Residential Solar project sets a route in action to deliver on this manifesto commitment. This is subject to a future Cabinet decision.
- 4.5. Government figures on fuel poverty estimated that 9,700 households in Hackney suffer from fuel poverty. Through the roll-out of supplying solar PV to residents at a reduced rate compared to options currently available on the market, the Council is in a stronger position to make strategic decisions to assist vulnerable residents. This will enable identified homes across the Borough to save on energy costs without families having to compromise on other essentials.
- 4.6. Approximately 1MW of solar generation on the Council's Corporate sites have been delivered already, however it has been more challenging to develop the business case for selling Residential solar generation to residents, as the current regulatory environment means that the majority of electricity is sold to the grid. Whilst Hackney's approach to PV is not driven by profit, there is a need to be able to recover any investment and cover staff costs to deliver - therefore innovative approaches to delivering PV on residential blocks of flats require consideration.
- 4.7. The relatively low uptake of energy generation within the Borough compared with consumption figures and the potential of using its existing assets for energy generation provide the Council with the opportunity to lead the way in encouraging a greater level of energy generation, which is generally low across London relative to other parts of the UK. The Residential Solar Pilot Project will be able to offer its customers better tariffs for renewable energy products from its own generation.
- 4.8. Investment cases for rooftop solar rely heavily on the amount of generated solar electricity that can be used on-site. This is because the income that can be gained by exporting a unit of solar electricity to the grid, linked to the wholesale market price for electricity, is far lower than the income gained by using a unit of solar electricity on-site. Reducing the amount of electricity that must be imported from the grid is preferential as retail costs of electricity are much higher than the export price that can be achieved.
- 4.9. The Council has found the development of viable investment cases for its corporate sites to be relatively straightforward. The Council can fund the

installation costs and directly receive energy bill savings from the use of the generated solar electricity on site, which pays (or at least contributes to) the cost of capital for the upfront costs. However, the Council has found achieving viable investment cases in residential blocks to be much harder.

- 4.10. A mismatch in incentives between landlords and tenants - typically referred to as 'split incentives' has been a key barrier to the installation of solar PV on Hackney's residential properties where there are dual interests in a property (i.e. landlord-tenant and freeholder-leaseholder tenures). This issue is highlighted in both the Council's Net Zero Energy Strategy and Climate Action Plan.
- 4.11. The Council also encounters a second challenge specific to solar and blocks of flats. Due to historical regulatory requirements, the traditional method for installing solar PV on flats has seen systems connected to the 'landlord supplies', feeding communal facilities like stairwell lighting and lifts. The outcomes achieved are poor. Residents receive no direct energy bill savings. The amount of solar used on site by the communal facilities is very small, delivering low value and non-financially viable investment returns.
- 4.12. The consequence of this issue is evident in the outcomes of a desktop study completed for Hackney Council, by consultants Syzygy, in 2021 (provided as Appendix 4). This study set out to help Hackney identify opportunities for solar across its roof spaces. While the potential for 12 megawatts of new solar capacity was identified on residential blocks, the study failed to present a viable business case for investment. This is because the study focused on the traditional method for installing solar PV and found that just 14-29% of the generated solar electricity might be used by the communal facilities in the blocks, while the rest would be exported.
- 4.13. Hackney Light and Power has set out to identify the chosen solution through exploration of the current market and the best technological, economical, and regulatory approaches available. After extensive research and collaboration with external energy specialists, Emergent Energy's microgrid solution is proposed.
- 4.14. A microgrid can be understood as a local electrical network that sits between the regulated distribution networks and customers' properties, to which some local generation is connected. A microgrid typically has a single point of connection to the 'grid' through which electricity is imported and exported.
- 4.15. Using a microgrid, solar PV generated on a block of flats can be sold to the residents. The residents in the block who are customers of the microgrid are, from the perspective of the electricity industry, sub-metered, because they buy their electricity needs from the microgrid operator and not from a national electricity supplier. The solar PV generated can also be sold to the Housing Service (landlord supplies) to power the lifts and communal lighting.

- 4.16. Emergent Energy has developed this method for enabling customers on private wires to switch, and advocated to Ofgem that this be introduced into the industry. Ofgem agreed that the solution was credible and awarded two 'Sandbox' trials to demonstrate the solution live in the market, after which, if it was shown to work, the solution would be introduced into the industry as a standard operating procedure.
- 4.17. Emergent Energy have since demonstrated to Ofgem the technical validity of the solution and are now progressing through the process that will see the solution become a standard industry procedure. This process is expected to take 12 to 18 months.
- 4.18. It is through this supply arrangement that we are able to solve the problems that the Council has traditionally faced in its approach to installing solar PV on residential properties. By selling the locally generated solar PV at a cheaper price than the residents can buy from the grid, the residents save money on their bills.
- 4.19. The added benefit is that the units of solar PV that are sold to residents effectively achieve the retail price of electricity (albeit discounted), which is higher than the wholesale price achieved when a system exports.
- 4.20. In this way, we can generate more income for the solar system, such that the installation capital investment and interest is projected to be repaid from the project returns.
- 4.21. The approach has been demonstrated via a series of pilot schemes with Gateshead, Brighton and Nottingham City Councils and there are currently nine such pilots operating, supplying c.210 customers.
- 4.22. The pilot provides a scalable solution that can be rolled out across Hackney's housing portfolio, as well as across the wider Hackney Borough, and leads the way for other Councils and communities nationwide.
- 4.23. The business case report is set out in full in Appendix 1 - Hackney Light and Power Residential Solar, which has been prepared by Emergent Energy in collaboration with Council officers through a working group set up to deliver the report. The report includes details of the proposed operating model and contract arrangements, resident offer and engagement plans, and extensive information on the delivery of the pilot.
- 4.24. Provided as Appendix 6 is a proposed site list of identified buildings initially selected to be a part of the pilot. This has been developed in consultation with colleagues in Housing and the Resident Liaison Group (RLG) and relevant Tenant and Resident Associations (TRAs) have been updated.
- 4.25. The indicative programme for delivering the pilot is provided as Appendix 2 - Hackney Light and Power Residential Solar Implementation Plan and is summarised in the table below

4.26. Implementation Plan

Year	2023	2023	2024	2024	2024	2024	2024	2024	2024	2024	2024	2024	2024	2024
Month	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Governance and management														
Delivery readiness														
Final development stage														
Works*														
Operations*														

*May be subject to change in line with strategy identified during final development stage

5. Details of Alternative Options Considered and Rejected

- 5.1. As part of the LEA-funded business case development, an independent market assessment provided as Appendix 3 was commissioned to explore a number of options for the installation of solar PV on Hackney's housing estates. The other options explored by the Council which were subsequently rejected include:

Option 1 - Energy Local Clubs

- 5.2. This approach is delivered by a Community Interest Company that has designed a means for local people to benefit from local energy through Energy Local Clubs. This enables households to join together and use local, clean power when it is generated. A better price is agreed for local generators and residents reduce their bills.

Option 2 - Solar Sharing Microgrid

- 5.3. This approach involves sharing the benefits of solar panels with the residents. Instead of residents each having their own supplier, the landlord (or new group) would buy all of the electricity for the block and sell this, along with the solar energy, to residents as needed.

Option 3 - Peer-to-Peer Exchange

- 5.4. This approach involves a peer-to-peer energy exchange to increase the energy provision efficiency and divide the value between generators and consumers. The concept of peer-to-peer is also known as a shared economy, and it is typically implemented in a local grid system. Peer-to-peer energy trading typically involves a group of participants, including generators, and consumers. Peers buy or sell energy directly from each other without intermediating conventional energy suppliers.

Option 4 - Solar Microgrid

- 5.5. This solar microgrid solution is able to supply residents and the landlord directly with energy produced from the solar PV on-site. The solution uses a Power Division Control System (PDCS). The function of a PDCS is to share a single source of energy generation to multiple, separately connected units, behind the meter, while conforming to all safety and network regulations.
- 5.6. All of the above solutions offer financial benefits to residents, but none provide the option for a return on investment for the Council and were rejected on this basis.

6. Background

- 6.1. In 2018 the Mayor and Cabinet Members made a pledge that Hackney would seek to maximise 50% of Hackney residential roof space owned by the Council to drive the deployment of renewable energy infrastructure in the Borough.
- 6.2. This pledge has become an integral part of the Council's strategic objectives for the Climate Action Plan. It has been further developed by considering the viability of the options available. The work undertaken so far demonstrates that there is a gap in the market to provide renewable energy products to residents of the Borough at competitive tariffs that will help to address fuel poverty.
- 6.3. In February 2021, Hackney Council commissioned an initial tiering study, provided as Appendix 4 which identified and prioritised sites potentially suitable for PV, with over 5MW 'Tier 1' sites identified.
- 6.4. A further feasibility and business case has now been developed which identifies the preferred route to delivering Solar PV on Hackney-owned housing estates.
- 6.5. This report and attached business case (Appendix 1) set out the progress of this work and plans for progressing the initiative. The report seeks Cabinet approval to commence full-scale activities that will enable the Council to commence the signing of contracts.
- 6.6. Further to the work completed to recommend the implementation of this project, the Council has undertaken extensive consultation with energy consultants and industry specialists to develop plans for the scheme.
- 6.7. The process leading to the development of the business case and this report has also involved discussions with Members and officers of the Council through the Hackney Light and Power Delivery Board.
- 6.8. In addition, throughout the project, a working group consisting of energy specialists, consultants and relevant Council Officers met to discuss all

stages of development and made decisions to progress the work. This consisted of Head of Procurement & Energy Management, Head of Operations (Hackney Light and Power), Head of Carbon and Energy & Carbon Management, Director of Finance - Climate, Homes and Economy, Design & Technical Standards Manager - Housing, Senior Lawyer (Legal), Associate Director - Energy (Buro Happold - external consultant); and the CEO of Emergent Energy.

- 6.9. The Head of Operations - Hackney Light and Power and specialist energy consultants have met with a representative from the GLA's LEA scheme (detailed in 2.4) throughout the development of the feasibility study and business case to update on the project, gain advice on decisions, and to ensure that work packages were endorsed.

7. Policy Context

- 7.1. The Government has put the transition to low carbon at the heart of both its clean growth and industrial strategies. Both of these objectives have highlighted the need for all regions of the UK to move from 20th-century energy systems to ones fit for the 21st Century. This transition will create significant opportunities for those who embrace the transition and substantial threats to those who ignore it.
- 7.2. The Government has stated that its priority is to:
 - 7.2.1. Ensure that the shift to a low carbon economy is achieved in a way that minimises the cost to businesses, taxpayers and consumers;
 - 7.2.2. Support the changes to energy networks required in the transition to a low carbon economy; and
 - 7.2.3. For the wider UK economy to capitalise on strengths in the energy industries to win a substantial share of global markets.
- 7.3. However, despite many years of privatisation and regulation, there is extensive evidence of market failure and record-high consumer dissatisfaction. High electricity and gas prices have featured in both the last three General Elections. The Competition and Markets Authority has investigated the UK domestic energy supply market and concluded that consumers were paying £1.4bn per annum more in energy costs than was necessary.
- 7.4. Whilst good progress has been made in decarbonising electricity generation across the UK, the Committee on Climate have significant concerns that carbon budgets for 2030 and beyond (even for electricity) will not be achieved.
- 7.5. The Council is a part of the UK100 Agreement, and in line with the commitments made nationally and internationally at the Paris Summit in

2015, is committed to ensuring the Local Authority runs on 100% clean energy by 2050, becoming a net-zero carbon Borough by 2040 and reaching net-zero for buildings and transport fleet by 2030.

8. Equality Impact Assessment

- 8.1. Hackney Council and its decision-makers must comply with the Public Sector Equality Duty set out in Section 149 of the Equality Act (2010), which requires us to have due regard to the need to:
 - 8.1.1. Eliminate unlawful discrimination, harassment and victimisation and other conduct prohibited by the Act;
 - 8.1.2. Advance equality of opportunity between people who share a protected characteristic and those who do not; and,
 - 8.1.3. Foster good relations between people who share a protected characteristic and those who do not.
- 8.2. Having due regard to the need to advance equality of opportunity involves considering the need to:
 - 8.2.1. Remove or minimise disadvantages suffered by people due to their protected characteristics;
 - 8.2.2. Meet the needs of people with protected characteristics; and
 - 8.2.3. Encourage people with protected characteristics to participate in public life or in other activities where their participation is low.
- 8.3. The implementation of the recommendations from the review should therefore pay due regard to the equality considerations to ensure that the Council is compliant with its statutory obligations under the Equality Act 2010.
- 8.4. The Council will continue to consider the impact on all protected characteristics during the ongoing development and implementation of the Residential Solar Pilot. Where appropriate, it will undertake additional engagement with the community or more detailed equality analysis where negative impacts on specific protected characteristics have been identified.
- 8.5. The Council has noticed the gap in energy tariffs accessible by people affected by fuel poverty and those living in social housing accommodation. The Council will address this issue by targeting the estates with a high proportion of fuel-poor households, vulnerable residents and those who struggle to heat their homes. This will have a positive impact on reducing inequality with regard to demand for energy.
- 8.6. Research carried out by OFGEM depicts that one in three people do not switch their energy suppliers, in particular families of low-income and elderly residents, the same group which falls under the definition of those affected

by fuel poverty. The Council, as an organisation with a strong reputation in respect of tackling fuel poverty, will through Hackney Light and Power develop a trusted and recognised brand to support people most in need of accessing a cheaper and greener energy tariff.

9. Sustainability

- 9.1. The Residential Solar pilot project will contribute significantly to the Council's objectives to tackle air pollution and climate change and to empower the communities within the Borough. Any surpluses generated from the project will be re-invested in sustainable measures in Hackney. The Council is committed to working with suppliers that offer 100% renewable energy or at least a significant proportion of green energy in their fuel mix. The Council already has measures in place to ensure that the overall energy usage is reduced and also ensure reduction in waste across its operation with a preference to recycle as much as is practicable.
- 9.2. This project supports the delivery of the objectives and commitments of the sustainable procurement strategy by reducing CO2 emissions, proactively sourcing low carbon and green energy, using "whole life" costing, supporting local employment, encouraging local suppliers into the supply chain and paying the London Living Wage.
- 9.3. Microgrids can achieve transformative outcomes by enabling electricity generated by the solar systems to be supplied to residents of the estates, at a lower price than they can otherwise buy electricity from the grid. Our expectation is that many residents will be attracted to the opportunity to save money through the scheme to deliver valuable welfare benefits through immediate bill savings and long-term energy bill security, as well as decarbonisation and green economy benefits.
- 9.4. By partnering to deliver the scheme with Hackney-based business Emergent, immediate and longer-term green economy benefits can be achieved for Hackney; bringing economic value back to the community. Local green jobs can be created in the installation and delivery of local works, for which training can be provided to people in more disadvantaged communities.

10. Pilot Site Selection

- 10.1. Prior to the current business case development project being undertaken, Hackney Council commissioned consultant Syzygy to evaluate the available solar PV potential on the Council's housing stock (Appendix 4). The review saw Hackney's estates ranked into a dataset across four tiers, based on their assessed attractiveness for solar. It has collated various data and estimates on building-level solar capacity and yield, including useful reference numbers on solar project costs. This study formed the initial basis of our site selection methodology for the pilot.

- 10.2. Further work was then carried out with colleagues in Housing to understand the tenure composition of the key estates the tiering study identified. This indicated that 64.8% of residents are in receipt of housing benefits or universal credit.
- 10.3. Site shortlisting for the pilot has been highly pragmatic, aiming to find one megawatt of near-term deliverable opportunity rather than focusing on finding the optimal sites. This is because we want the pilot to serve as a replicable model for future projects; and to be delivered expeditiously. It has been based on the outcomes of the technical reference designs and cost analysis alongside an archetype-led approach to streamline delivery efficiencies and reduce risks.
- 10.4. A primary consideration is the likely cost of installing the solar PV. This has led to prioritising a building archetype with a pitched roof which has a relatively low solar installation cost due to the existence of parapets around the roof perimeter that will minimise the need for scaffolding. All costs associated with installing the solar panels, including any associated building costs will be met by the project and not the HRA.
- 10.5. Assessments have taken place on the shortlisted buildings that met this archetype to look at the suitability of their roofing for solar PV and their electrical services for a microgrid. Having confirmed their suitability for the pilot, we have identified similar buildings in other estates, using the Syzygy dataset, focusing on estates ranked in the first two tiers. The archetype-based strategy has identified broadly similar electrical services across all of these buildings, supporting high levels of efficiency for the project, through the remaining design, installation and operation stages.
- 10.6. In order to generate a wider range of learnings from the pilot, also included in the shortlist are some other building types. These include some flat-roofed buildings that were excluded from the Syzygy dataset, but where the roofing was recently replaced and still has long-term warranties.
- 10.7. The various estates that include buildings which were shortlisted for the pilot, and the reasons why are given in the table below (10.7 - Shortlisted Buildings). The final list of buildings to be taken forward for the pilot, based on the results of the reference designs and costings produced, is provided in Appendix 6.
- 10.8. Shortlisted Buildings

Estates including buildings that were shortlisted	No. of buildings	Syzygy tier	Building archetype	Delivery approach
Frampton Park Estate (1)	7	1	Parapet	Microgrid led
Whiston Estate	10	1	Parapet	Microgrid led
Woodberry Down Estate	1	1	Parapet	Microgrid led

Frampton Park Estate (2)	1	n/a - info from Bauder	Flat	Microgrid led
Wrens Park Estate	10	n/a – info from Bauder	Flat	Microgrid led

- 10.9. While we believe the buildings identified in the shortlist present the best prospects for the pilot, it is important to be aware that further developments on the ground, in particular, refused or costly connections to the distribution system from UKPN, may result in some sites needing to be swapped for other sites. Replacement sites will be selected using the same methodology detailed above.
- 10.10. Detailed structural surveys will be undertaken on the selected sites before works begin and appropriate insurance cover will be in place to mitigate any risk of damage to buildings. Delivery phases will conform with all current and future Hackney Council Housing policies and industry good practice.
- 10.11. The shortlisted sites detailed in Appendix 6 have been assessed and are deemed to be suitable in line with guidance from Housing Services. This has included factoring in scheduled work to replace laterals, high-value repairs and deferred plans for capital works.
- 10.12. Appendix 5 further details the risks associated with installing solar PV on the roofs of Hackney with associated mitigation measures.
- 10.13. Appendix 8 (HLP Residential Solar Equipment on Roofs) details the steps that Hackney Light and Power in partnership with contractor Emergent, will undertake to ensure compliance with Hackney Council Housing Services policy and procedures in respect of granting permissions for third-party equipment on roofs.

11. Resident Engagement

- 11.1. It is important to recognise we are not restricted in terms of which residents sign up. All residents, whether they are Council tenants, private tenants or resident leaseholders, in blocks of flats are equally able to participate. We therefore have the maximum available pool of residents from whom to achieve the targeted sign-up rates. On existing pilots delivered in other local authorities, sign-up rates of 75% have been achieved. Insights from activities undertaken on these pilots have been considered as part of the development of the business case.
- 11.2. In order to prepare the ground for the pilot, a range of initial engagement exercises with residents have been undertaken.
- 11.3. We opted against undertaking direct testing of the concept with residents prior to the Cabinet decision to go ahead. This is because, as is always the case with resident engagement, there is only so much that can be understood through testing and consultation. There is also a risk that consultation on the solution now will raise expectations with residents that

are not fulfilled, at least for some time. This could instil cynicism about the scheme and make the job of signing up residents harder when the time comes.

11.4. With this in mind, the engagement undertaken has been both at a higher and more targeted level. We are pleased to report that the feedback to date has been positive. The activities undertaken have included:

11.4.1. Presentation to Hackney's Resident Liaison Group on 29th June 2023.

11.4.2. Meeting with existing solar champions on Whiston Estate.

11.4.3. Presentation to Frampton Park Estate Tenants' Association on 20th September 2023.

12. Resident Offer

12.1. The scheme's approach is to offer residents a service that is as close as possible to the typical electricity supply arrangements customers receive in the market. In this way, we minimise potential confusion for residents, while creating space to emphasise the benefits of the new scheme.

12.2. The fundamental value to the Council of residents signing up for the service is the ability to supply them with electricity generated from locally installed rooftop solar. In and of itself, this has value for residents through its strong community and truly green credentials. But of course, the primary value to residents is the discounted price this electricity is supplied at versus electricity they would otherwise need to buy from the grid.

12.3. To explain the savings offer that can be made to residents, we have defined the tariff structure in three elements: a standing charge; a grid unit rate; and a solar electricity unit rate:

12.3.1. **Fixed daily charges, or 'standing charges'** - These are typical for all types of electricity tariffs in the market. In the scheme, these charges will be set to be competitive with prevailing market rates, which are relatively stable.

12.3.2. **The grid unit rate** - This is the rate at which any unit of grid electricity imported to a microgrid is resold to residents. This rate is directly comparable to tariffs offered by national suppliers, and given the amount of grid electricity resold to residents could be up to 75% of their usage, it is essential this price is competitive. Emergent Energy and Hackney Light and Power are currently engaging a number of national suppliers to determine the best available offer and tariff structure for grid imports. The working assumption is that a tariff pegged to the Ofgem default rate will be offered to residents through a supplier with a recognisable

brand, to provide assurance to both Hackney Council and residents on the long-term security of the price offered.

12.3.3. **The price per unit of solar electricity used** is the final element of the tariff. The approach to this element is in two parts:

12.3.3.1. First, the solar price is pegged at a fixed discount to the Ofgem default tariff. This makes the tariff structure simple for residents to understand while making a clear and verifiable promise on the savings offered.

12.3.3.2. Second, the value of the savings achieved is distributed to residents in the form of credits, shared equitably across all participating residents in the scheme. This arrangement is preferential because the credits provide regular behavioural prompts to residents that highlight both the solar value they receive from participating in the scheme, and its community nature (which will be further supported by the use of the Hackney Light and Power brand). This will maximise positive sentiment and will help drive both customer retention and new resident interest.

12.3.4. Having one price for solar electricity that is unified across all buildings involved in the scheme helps deliver more equitable access to the benefits of on-site solar. By sharing solar savings across the whole portfolio, residents will not be penalised because, for example, they happen to live in a block that has poor solar yield.

12.3.5. There is also the potential to ‘bank’ some of the solar savings, and distribute them to residents during the winter, when the solar generation is low and customer usage is high, resulting in the highest bills. Doing so will need careful consideration of scheme design and communications, but if done successfully will have the highest impact on resident welfare. Any “banked” savings would be held in an individual customer’s balance and returned if they exit the scheme.

12.3.6. The potential rate of discount available to customers, and how this discounted price is set, is provided in 14.12 to 14.14

12.4. An essential element of the offer for residents is that they are under no obligation to take a supply from a microgrid installed in their block of flats and can instead choose a national supplier. Similarly, if a resident who chooses to become a customer of a scheme later decides they are unhappy with the price (or the service), they are under no obligation to stay and can switch away. Doing so requires the customer to request reinstatement of

their industry meter (MPAN) with their new supplier, which is a common and relatively straightforward process, generally carried out at zero cost.

- 12.5. Vulnerable residents may have the most to gain from signing up but this introduces a set of challenges that require careful management. The scheme plans to introduce a system for flagging customers identified as vulnerable so that customer services staff supporting residents with metering and billing provide extra consideration and care when issues arise. There is also the potential to provide loans or credits to customers in need and to change tariff terms at short notice if required.
- 12.6. Finally, the service residents receive is very important to the success of the pilot. This relates to what happens when they sign up, switch providers, and the ongoing support they will receive in comparison to their previous provider.
- 12.7. Since customers must have a new electricity meter installed, opportunities to install these meters in communal areas, like stairwells will be the preferred approach to minimise disruption; but if the new meter is needed within a property, as a replacement for their existing meter, the installation works will typically take a few hours.
- 12.8. Once the resident has their meter installed, the service they receive is a standard type of energy supply service billed via a Smart Pay As You Go solution, meaning they need to top up their meter in advance of their electricity usage. While prepayment metering has become particularly controversial recently due to a high incidence of forced meter installations on customers, we believe this is the best approach to begin with, since it both helps residents to budget and minimises bad debt for schemes. It is proposed that introducing direct debit as a payment method is the best approach to drive uptake across leaseholders.
- 12.9. Generally, the experience from other council pilots is that residents are happy with the convenience offered by the Smart Pay As You Go solution. It is digitally based, enabling automated payments to be set up, and top-ups to be made online or via telephone. Residents can also access detailed information on their usage and payments via an online portal. The project plans to develop options to expand this information to incorporate visualisation of on-site solar usage, and other elements relevant to the scheme.
- 12.10. Where residents encounter issues, customer support will be available via phone and online 24 hours a day, seven days a week.
- 12.11. As a whole, we believe the above represents an attractive service offer for residents, and existing pilot schemes rolled-out by councils with the same offer have achieved the required sign-up rates required for the scheme to be commercially successful.

13. Contracting and Procurement

- 13.1. A key consideration in the development of renewables, as with all other construction projects, is whether the design, build and operate stages are best performed by independent contractors or through an integrated contract model.
- 13.2. In seeking to determine the best approach to contracting the development of microgrids specifically, there are a number of novel considerations for the design and installation stages on a microgrid versus a typical solar PV installation on a building. The works can be broken down into three distinct elements:
 - 13.2.1. Boundary meter works
 - 13.2.2. Solar installation works
 - 13.2.3. Customer onboarding works.
- 13.3. Both the boundary meter and the customer onboarding works are directly linked at a practical level to the work involved in operating a microgrid. Additional links between these upfront activities and microgrid operations exist. It is essential that appropriate metering devices are installed that enable the operational requirements to be delivered.
- 13.4. There are direct links between the costs involved in these upfront works and the operating costs and commercial performance of the microgrids. All of these combine to require the boundary meter and customer onboarding works to be procured together with the microgrid operations.
- 13.5. Given the relative simplicity of the solar works, and a solar-microgrid-led delivery approach being applied to the project, the most effective contracting model sees the microgrid installer act as Principal Contractor, sub-contracting out the solar works. Otherwise, the Council will need to manage and coordinate directly both the microgrid works and solar works contracts.
- 13.6. We propose to contract out the local supply operations of the project, which must be contracted to Emergent since they are the only party able to deliver a model which features a return on investment and is capable of doing so, due to the unique nature of the regulatory awards from Ofgem (see 17.12).
- 13.7. This means that Emergent must also be contracted to do the microgrid-specific installation works. The Council has furthermore agreed that the delivery approach to the pilot should be solar-microgrid led (i.e., not integrated with planned works) meaning it makes sense for Emergent to also be contracted to deliver the solar works, albeit outsourced to a solar specialist.
- 13.8. Considering the above, it is proposed that the local electricity supply activities involved in operating this project will be contracted out and that

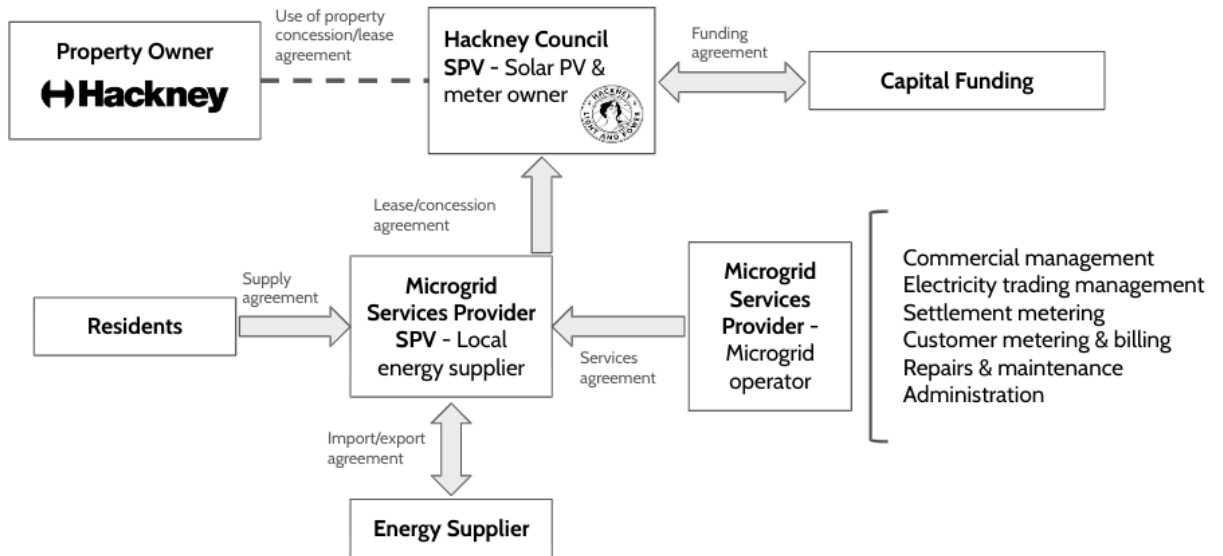
Emergent Energy will fulfil these activities through the Public Contracts Regulation (PCR) 2015 “Use of the negotiated procedure without prior publication”. This includes contracting Emergent for the remaining detailed design, installation and operation works.

- 13.9. The unique nature of Emergent’s capabilities for operating microgrids is demonstrable in legislation. When considering the integration of the operating contract with the installation works, it is relevant to consider the uncertainties and risks involved in delivering the pilot, and Emergent’s unique ability to navigate these risks.
- 13.10. When developing microgrids there is much still to be learned about what buildings are most suitable for projects, how projects can be most efficiently designed and built, how residents will respond to projects (how many will sign up to become customers and what will they think of the service), and, crucially, the commercial performance projects will deliver.
- 13.11. The central need to engage, market to and onboard residents as customers to projects introduces a host of questions about how this can effectively be achieved. There is potential for inter-dependencies across the project stages that have not yet been identified, as well as the potential need to iterate designs once construction work begins, as practical issues on site are discovered.
- 13.12. From a practical perspective, Emergent is the only party with a detailed understanding and experience of what the challenges are for delivering microgrids and how to manage them. This is because they are the only party in the industry with a viable commercial model for delivering microgrids, and the only party to have successfully delivered microgrids in existing social housing. This is demonstrated by the unique nature of the OFGEM sandbox awards detailed in 17.12 and that Emergent are the only market option to deliver this model.
- 13.13. Emergent is a Hackney-based business which is motivated to see the Council succeed as a low-carbon pioneer and to see direct benefits to the local community.
- 13.14. Two categories of activities are to be procured: works, and concession. ‘Works’ refers to the design and installation activities. ‘Concession’ relates to the microgrid operations, whereby a party is being given rights to deliver a scheme in a Council building, which could generate profit but is exposed to commercial risk (i.e. the profit is not guaranteed).
- 13.15. The contract value on both aspects is comfortably below the thresholds over which open tenders are required:
 - 13.15.1. The value threshold over which a Works contract must be put out to open tender is £5,336,937. The works involved for the pilot project will cost up to £2m.

- 13.15.2. The value threshold over which a concession contract must be put out to open tender is (similarly to works contracts) £5,336,937.
 - 13.15.3. The financial modeling produced for this business case projects the performance of the pilot projects for up to 40 years. At around 12 years, meters and solar inverters installed for the pilot will need replacing, presenting a suitable time to retender the contract.
 - 13.15.4. We estimate the value for a 12-year concession contract on the pilot of £4.761 million, falling below the value of the open procurement threshold. The annual value of the concession contract is around £385k.
- 13.16. The chosen model will see the Council provide the local electricity supplier (Emergent) with the concession to operate microgrid projects within the specific blocks of flats involved in the pilot. This is planned to be transferred to a Council Special Purpose Vehicle (SPV) - Hackney Light and Power following a further decision by Cabinet to set up the municipal energy company. The Council SPV will then extend the various rights provided by this agreement, for use by the local electricity supplier.

14. Commercial/Funding Model & Financial Projections

- 14.1. The Council has chosen to deliver the solution through an operating model that will mitigate excessive risk to the Council, by outsourcing the most operationally complex and commercially exposed project elements. The Council will take on the role of Solar Generation Asset Owner, funding and owning the assets required for projects. The supply of solar electricity to customers using these assets will be contracted out to a Local Solar Electricity Supplier (Emergent).
- 14.2. Below is an illustration of the contractual design for the operating model. It shows a lease agreement existing between the parties, whereby this lease agreement provides the Local Solar Electricity Supplier with rights of use over the Solar Generation Asset Owner's assets.



14.3. Initially, and in the absence of a Hackney Council SPV being set up, the Council will undertake the role of Solar PV and meter owner, as well as property owner.

14.4. The diagram at 14.2 indicates how the Council is insulated from the risks involved in the local electricity supply activities via the lease. In effect, Hackney Council will trade the direct risks involved in supplying electricity locally, for counterparty risk with the Local Solar Electricity Supplier.

14.5. The table below (14.7) shows the basic project economics formula for the Solar Generation Asset Owner. The costs incurred are primarily a function of the upfront capital expenditure involved in building projects combined with the cost of the capital used to fund these costs (e.g. borrowing costs). In addition to the cost of works involved in building projects, as set out at 13.2 (i.e. boundary meter works, solar installation works, customer onboarding works), the final development costs for the pilot and costs of marketing to customers and replacing equipment (specifically solar inverters and meters between around 13 to 15 years) need including. Also business rates specific to solar generation, and any costs (which should be minimal) involved in the administration and management of schemes, both of which are ongoing.

14.6. Set against these costs is the income earned from the lease provided to the Local Solar Electricity Supplier, with the net difference determining the Solar Generation Asset Owner’s surplus. The below table (14.7 - Solar Generation Asset Owner’s Surplus) demonstrates how this is calculated.

14.7. Solar Generation Asset Owner’s Surplus

Solar Generation Asset Owner’s surplus	equals	Income	less	Costs
		Asset lease income from Local Solar Electricity Supplier		Cost of capital required to fund: <ul style="list-style-type: none"> • Final development costs • Boundary meter Capex

			<ul style="list-style-type: none"> • Solar Capex • Customer onboarding Capex • Customer marketing • Equipment replacement <p>Business rates</p> <p>Scheme admin and management</p>
--	--	--	--

14.8. The basic project economics formula for the Local Solar Electricity Supplier is shown in the next table (14.10). The operating model chosen by the Council has outsourced management of this formula to a third party. So while the dynamics underpinning the formula are explained here, to provide a comprehensive picture of the overall financials, it is important to remember that the Council will be insulated from the various complexities facing the Local Solar Electricity Supplier.

14.9. The costs incurred by the Local Solar Electricity Supplier include the cost of the lease to the Solar Generation Asset Owner, plus costs related to importing electricity from the grid (which includes various electricity usage-linked and fixed charges), and costs involved in operating the microgrids covering the various activities indicated in the diagram above (14.7).

14.10. Set against these costs is, primarily, the income earned by selling electricity to customers, which includes sales of the generated solar electricity as well as resale of the imported electricity. Fixed (standing) charges can also be earned from customers, while, via an appropriate contract, additional income can be earned by exporting to the grid any solar electricity that is not used on-site. A final source of income is rebates against the boundary import charges from the local Distribution Network Operator, which are available using Emergent’s second regulatory Sandbox award. The table below (14.11 - Local Solar Electricity Supplier Profit) demonstrates how this is calculated.

14.11. Local Solar Electricity Supplier Profit

Local Solar Electricity Supplier profit	equals	Income	less	Costs
		Solar supply (p/kWh) Solar exports (p/kWh) Grid supply pass through unit charges (p/kWh) Fixed customer (standing) charges (p/day) Fixed network charge rebates (p/day)		Cost of lease paid to Solar Generation Asset Funder Grid imports <ul style="list-style-type: none"> • Unit charges (p/kWh) • Supplier standing charge (p/day) • Fixed network charges (p/day) • Network capacity charges (p/kVa/day) Delivery of microgrid activities

- 14.12. Analysis undertaken for the business case indicates that for the pilot, and any further projects focused primarily on residential solar deployment, we can potentially achieve 20% electricity bill savings for residents, by selling the generated solar electricity at a fixed unit price that is considerably cheaper than the going market rate; and, a 6%+ return on capital.
- 14.13. We think it is appropriate a cap is agreed on customers' prices, whereby this would be no higher than the default tariff cap applied by Ofgem. Potentially a lower cap could be agreed for the unit cost of the solar electricity supplied to customers, but the scope to do so would depend on the cost of the lease that is agreed.
- 14.14. There is potential for better outcomes on projects where upfront costs are lower, which can be achieved by integrating solar installations with existing planned works and new developments, and by applying the installation approach to existing solar installations (and combined heat and power systems).
- 14.15. A delivery model for the scheme has been developed where Hackney's new municipal energy company, to be proposed in a future Cabinet paper, will play a central role.
- 14.16. The pilot will initially be delivered by Hackney Council. Management of the highest operational and financial risks will be contracted out.
- 14.17. The total upfront cost of the pilot is projected in a range of £1.5m-£1.75m, up to a maximum £2m.
- 14.18. Already secured towards the pilot is £500k of funds via the Council's Section 106 Carbon Offset Fund (COF), leaving an outstanding funding need of £1.5m.
- 14.19. Use of the Section 106 COF funding will derisk the pilot for the Council by providing scope to address key uncertainties, including through the final development stage for the project. It will also increase the income generation potential from the project for the Council.
- 14.20. The remaining £1.5m will be funded through Hackney Council's capital programme.
- 14.21. If a maximum 70% of residents in the participating buildings sign up for the scheme, and the solar costs are as quoted, we estimate the total costs will be £1,954,730, representing the upper limit for the project.
- 14.22. If we can achieve a 10% reduction in solar costs and 50% of residents sign up, we estimate the costs will be £1,762,279.
- 14.23. We therefore propose the allocated £2m budget for the project, allowing potential for the final costs to be within this range, plus some contingency.
- 14.24. Our goal is for the pilot to achieve, in addition to the bill savings and investment returns cited above, long-term income that can be used to

support the scaling up of the model - in order to accelerate decarbonisation, support more residents, and generate more investment returns.

- 14.25. Further to Cabinet approval of this paper, we will be seeking to spend £100k of the Section 106 funds on finalising the pilot designs, costings and delivery model; authority and funds to deliver the pilot, up to the cost of £2m, on the basis of satisfactory outcomes being achieved from the final development phase, subject to Council checks and balances.
- 14.26. Our goal is for the pilot to be fully operational no later than the end June 2024.
- 14.27. Financial projections over a three-year period are summarised in the table below by Emergent (14.28 - Integrated economics - including Section 106 funds and HLP management budget) and provided as Appendix 7 - Financial Projections (commercial in confidence).
- 14.28. Integrated economics - including Section 106 funds and HLP management budget (developed by Emergent):

	Date*	31/12/2024	31/12/2025	31/12/2026	31/12/2030	31/12/2035	31/12/2040	31/12/2045	31/12/2050	31/12/2053
Option 1										
Section 106 funds	£	400,000								
HLP Management fee	£	-10,000	-20,400	-20,808	-22,523	-24,867	-27,456	-30,313	-33,468	-35,517
CapEx	£	1,328,006								
Cashflow	£	-1285815	85751	86817	91202	96973	103078	109535	116358	120636
Cumulative cash flow	£	-1285815	-1200063	-1113247	-755078	-281886	221157	755775	1323769	1681368
IRR 30yr	6.27%									
NPV discount rate 30yr	5.95%									
NPV 30yr	46,876									
Option 2										
Section 106 funds	£	400,000								
HLP Management fee	£	-10,000	-20,400	-20,808	-22,523	-24,867	-27,456	-30,313	-33,468	-35,517
CapEx	£	1,328,006								
Cashflow	£	-1280388	104077	105499	111384	119199	127558	136499	146061	152114
Cumulative cash flow	£	-1280388	-1176311	-1070811	-634202	-54048	248368	912742	1623666	2073900
IRR 30yr	7.47%									
NPV discount rate 30yr	5.95%									
NPV 30yr	222,937									

*Financials are presented in calendar years based on the outputs of the business case modelling produced for the project. Financial year projections would be broadly similar, albeit reflecting variability in the projected timescale for completing the installations

- 14.29. A number of scenarios for the pilot, consisting of varied input assumptions, are included in the provided model as provided in Appendix 7 - Financial Projections (commercial in confidence). These are explained in detail in the business case provided as Appendix 1 - Chapter 9, Commercial model and financial projections.

15. Consultations

- 15.1. The Business Case provided as Appendix 1 has been developed on the basis of the commitments within the 2022 Mayoral Manifesto.
- 15.2. Consultation has taken place with specialist energy consultants and senior GLA officers as part of the Local Energy Accelerator (LEA) scheme.
- 15.3. Throughout the development of the business case, a working group formed of key Council stakeholders in Finance, Housing, Legal, Energy & Carbon Management, Procurement and Hackney Light and Power has reviewed progress and acted to decide on the direction of the project.
- 15.4. The Hackney Light and Power Delivery Board has been updated monthly on the progress of the project. This has included the Cabinet Member for Environment and Transport and Cabinet Member for Housing Services.
- 15.5. The Cabinet Member for Environment and Transport and the Cabinet Member for Housing Services have been consulted on the project through dedicated meetings.
- 15.6. Resident representatives have been engaged through meetings with the Resident Liaison Group (RLG) and relevant Tenant and Resident Associations (TRAs).
- 15.7. As part of developing this business case, DG Cities, authors of the independent market assessment (Appendix 3), have provided insights on their work to deploy Emergent's microgrid solution on an estate with Greenwich Council. DG Cities are experts in engaging residents in relation to novel energy technologies, with extensive experience in the field of testing attitudes and driving participation.
- 15.8. Tax advice has been provided by external specialist, PwC.

16. Risk Assessment

- 16.1. The Residential Solar project is not without risks. These risks are not excessive and can be robustly prepared for and mitigated through effective risk management.
- 16.2. Three core categories of risk exist for the pilot:
- 16.2.1. Financial risks to the Council.

- 16.2.2. Risks to residents in the blocks that are included in the pilot. This applies primarily to those residents who choose to participate in the scheme by becoming customers of the new solar electricity supply service, but also to those who choose not to participate.
- 16.2.3. Reputational risks to the Council.
- 16.3. Risks for the pilot also exist in relation to the Council's chosen delivery partner, Emergent.
- 16.4. Provided as Appendix 5 is a robust risk register with detailed mitigations for each risk.

17. Comments of the Interim Group Director, Finance

- 17.1. This paper proposes capital investment by the Council of £1.96m to design, install and operate a solar powered system and provide up to 810 residents' homes with discounted energy costs. This investment is considered a pilot project to determine the feasibility of the innovative approach outlined. As such, it presents a higher level of risk to other projects so more careful attention should be paid to the risk register and to the risks highlighted in this section to fully inform the decision making.
- 17.2. The Council received funding from the GLA for the production of a business case to provide solar energy supplies to residential accommodation. The business case was produced primarily by an external supplier (Emergent, referred to as the supplier) detailing their innovative solution for the provision of residential solar power. Alongside the business case, a detailed financial model was produced. The financial model was utilised to perform a sensitivity analysis to further understand the risks within the operation of the project.
- 17.3. The capital works proposed include the following aspects:
 - (a) Installation costs of adding solar PV panels to Council owned residential blocks
 - (b) Installation costs of adding electrical micro-grids and metering to enable the sale of solar generated electricity to residents.
- 17.4. These capital assets will be fully owned by the Council¹ and then leased to a supplier who will operate the billing and metering aspects of provision. The Council will receive a lease rental for use of these assets.

¹ With potential in the future to transfer assets/income to a council owned company Hackney Light and Power once established. The finance comments here reflect the initial arrangement with the Council as asset owner

- 17.5. The solar electricity generated will be either sold to residents at a discounted rate to normal electricity rates or sold to the grid if not utilised by residents.
- 17.6. The operation of the micro-grids will mean that the Council becomes a provider of energy for residents who may then choose to sign up to the Council as supplier of energy and become eligible to receive discounted solar generated electricity.
- 17.7. Over the expected 30 year life of the solar panels, the income received is intended to repay the capital investment plus the interest incurred on this investment at prevailing PWLB rates (plus a small risk factor). This is detailed in Appendix 7 - Financial Projections.
- 17.8. Emergent will receive the income generated from the supply of solar electricity to residents and re-sale of unused solar electricity back to the national grid.
- 17.9. The cost of solar electricity to residents will be set at a level that enables:
- (a) The cost to be set at a discount to expected market rates for electricity
 - (b) The income to be sufficient to enable the supplier to make lease payments to the Council that repay the capital investment over the life of the solar panels
 - (c) Emergent to make a profit from the margin between the effective lease rental per kWh to be made to the Council and the weighted income from sale of solar electricity per kWh to residents and the national grid
- 17.10. Project Financing: the project is proposed to be funded from a combination of funding.

S106 funding	£0.5m	Allocation agreed
Prudential borrowing	£1.46m	Recommendation 3.3

- 17.11. Key assumptions within the financial model are detailed below:

Indicator	Value assumed	Comment
Lending rate	5.95%	PWLB 30 year rates plus margin for risk
Inflation	2%	Long running target for Bank of England
Maximum net present	30 years	Longest asset life

Indicator	Value assumed	Comment
value time period considered		(solar panels) defines maximum model period

Key financial risks

- 17.12. **Sandbox agreements:** The innovation by the supplier comes from two Ofgem sandbox awards

[Regulatory Sandbox: Emergent Energy Systems Ltd - 2022 | Ofgem](#)
[Regulatory Sandbox: Emergent Energy Systems Ltd - 2023 | Ofgem](#)

Both of these allow the supplier to provide energy in a way that is not permissible under current Ofgem rules - but application of these derogations allow the financial model to return the investment over the longest asset life. The sandbox awards allow trials that have to be done in a live energy environment, involving consumers or interacting with market rules or the physical energy system. A key risk within this pilot project is that these temporary derogations are not made permanent and the provision of energy is no longer cost effective as outlined above.

- 17.13. The part mitigation of this risk is that the solar power will still generate a smaller income stream selling excess electricity to the grid. The return on investment should this risk materialise is over a significantly longer period which exceeds the longest asset life estimated at 30 years - effectively meaning the project is not financially viable and a loss on investment is made.
- 17.14. **The supplier:** the supplier is a small company and as such does not have the balance sheet or turnover of a company that the Council would normally engage for this level of works for the installation phase of the project. Consequently it is recommended that any contract with the company must be explicit around cash flows to the company and onward cash flows to sub-contractors of the company.
- 17.15. **The supplier** has drafted the business case, will act as project manager for the installation of the solar panels and microgrid and will then operate the billing and collection of the system. The business case and financial model have been reviewed carefully by council officers to mitigate the effects of optimism bias.
- 17.16. **Other financial risks:** the table below highlights some of the sensitivity analysis that resulted from the financial model and shows the limits of

financial viability. The base case, consisting of assumptions considered reasonable by council officers, resulted in a positive net present value (NPV) over 30 years.

Sensitivity	NPV (must be > £0)	Comment
Microgrid costs higher - 8% increase	-£45k	Modelled £4k per grid compared to £1.4k base case
Solar panels costs higher - 20% increase	-£153k	Supplier returns no longer viable over long term
Inflation higher than base - 4%	£573k	The NPV is greater than zero reflecting a positive return to the Council - but the increased return is a function of higher utility costs to residents which should move alongside national electricity rates
Resident uptake of new supply is low	£0	65% modelled instead of 80% assumption

17.17. The pilot is at the boundary of financial acceptance with relatively small changes in key assumptions resulting in negative net present values. The service will need to carefully maintain the risk register and monitor the ongoing costs of the pilot. The operational phase will also need to be tracked carefully to inform any potential expansion of the pilot to other residential homes.

18. VAT Implications on Land & Property Transactions

- 18.1. Tax advice has been sought through consultation with external specialists, PwC.
- 18.2. No VAT should be charged on the installation of solar PV on residential property before 2027. A reduced rate will likely apply from 2027.
- 18.3. On the basis that the Council will own the solar PV systems, any VAT that is correctly incurred on the costs of installation should be recoverable in full.

19. Comments of the Strategic Director Housing Services

- 19.1. This proposal provides the opportunity for some of our residents to benefit from greener energy at a cheaper rate than the traditional energy suppliers

which is something that we would clearly support, especially given the current cost of living crisis.

- 19.2. Appendix 8 clearly sets out the requirements to ensure that the buildings are structurally able to support the additional loading that would come from the installation of the solar panels and that any costs associated with initial installation and any subsequent removal and reinstallation should it be needed to enable essential maintenance and improvement works to be undertaken will be borne by the project not the Housing Revenue Account.

20. Comments of the Director of Strategic Property Services

- 20.1. This report does not touch on the grant of any property interests relating to the roof space of LBH-owned blocks.
- 20.2. The report makes it clear that the assets will be owned by LBH although if Hackney Light and Power is in the future constituted as a separate legal entity it may then take a lease over the roof space where the solar power equipment is located.
- 20.3. If that is the route that the Council eventually chooses, any lease of an interest in excess of seven years needs a specific authority from the Cabinet and the disposal will need to meet the best consideration requirements of s.123 of the Local Government Act 1972.

21. Comments of the Acting Director of Legal, Democratic and Electoral Services

- 21.1 Section 1 of the Localism Act 2011 sets out the general power of competence which permits a local authority to 'to do anything that individuals generally may do'. This wide-ranging power allows the Council to participate in a broad range of activities and the proposals in this Report are permitted under such provision.
- 21.2 The recommendations in paragraph 3 of this Report regarding the Hackney Light And Power Residential Solar PV Pilot would constitute a key decision under Regulation 8 of the Local Authorities (Executive Arrangements) (Meetings and Access to Information) (England) Regulations 2012 as it is an executive decision, which is likely (a) to result in the relevant local authority incurring expenditure which is, or the making of savings which are, significant having regard to the relevant local authority's budget for the service or function to which the decision relates; or (b) to be significant in terms of its effects on communities living or working in an area comprising two or more wards or electoral divisions in the area of the relevant local authority. Key decisions can be made by Cabinet under Article 13.6 of the Constitution and therefore this decision is being presented to Cabinet for approval.

- 21.3 The proposals in this Report have various legal implications including, without limitation, planning and property ones and these will need to be considered further.
- 21.4 With regard to procurement matters, Regulation 32 of the Public Contracts Regulations 2015 states that contracting authorities may award public contracts by a negotiated procedure without prior publication in certain limited cases. One of those cases is set out in Regulation 32(2)(b) which states that where "(b) where the works, supplies or services can be supplied only by a particular economic operator for any of the following reasons:- (ii) competition is absent for technical reasons, (iii) the protection of exclusive rights, including intellectual property rights, but only, in the case of paragraphs (ii) and (iii), where no reasonable alternative or substitute exists and the absence of competition is not the result of an artificial narrowing down of the parameters of the procurement". When the grounds for an award under Regulation 32(2)(b) are validly made out it is not necessary for a contracting authority to run a competitive procurement procedure. The arguments for using such Regulation in relation to the award of contract to Emergent Energy are set out in this Report, and the requirements of Regulation 32(2)(b) have therefore been satisfied.
- 21.5 Paragraph 2.2 of the Cabinet Procedure Rules states that Cabinet functions can be sub-delegated, or delegated further, except where the Elected Mayor says that this can not happen. Therefore, subject to the approval of Cabinet, the Group Director of Finance in consultation with the Hackney Light and Power Delivery Board and with the Cabinet Member for Energy, Sustainability and Transport, is permitted to agree the matters to be delegated in paragraph 3.2 of this Report.

22. Comments of the Head of Procurement

- 22.1. This Business Case proposes the award of a contract to Emergent Energy (The Supplier) to develop a pilot 'local electrical network' project as a precursor to the establishment of the Hackney Light and Power municipal energy company. The proposal follows the work previously carried out by the Council's energy services arm Hackney Light and Power which obtained funding from the Greater London Authority for this pilot project. The scrutiny and approval arrangements to set up the municipal energy company will be set out in a future Cabinet paper.
- 22.2. This proposed approach means the Council will engage Emergent Energy to deliver the works which would include: Boundary meter works, Solar installation works and the concession which would include: Customer onboarding works (grid operations). The most effective contracting model is the microgrid installer also acting as the Principal Contractor.

- 22.3. The combined value of the works element of the contract is estimated at £2,000,000 whilst the concession element has an estimated value for a 12-year concession contract term of £4.761,000. The total contract sum therefore is £6,761,000 which is above the Public Contracts Regulation (PCR) 2015 threshold for all procurement types of works or concessions. The regulations governing 'Mixed Procurements' stipulate Regulations 4 - (1) (a) contracts which have as their subject matter two or more types of procurement (works, services or supplies) shall be awarded in accordance with the provisions applicable to the type of procurement that characterises the main subject-matter of the contract in question. This would be the concession element of the contract.
- 22.4. The procurement procedure follows the Public Contracts Regulation (PCR) 2015 "Use of the negotiated procedure without prior publication". The 'General Grounds' where this procedure is permitted and utilised in this case are the following:
- Regulations 32 - 2 - B where the works, and services can be supplied only by a particular economic operator in this case Emergent Energy for the following reasons:— (ii) competition is absent for technical reasons and (iii) the protection of exclusive rights, including intellectual property rights, but only, in the case of paragraphs (ii) and (iii), where no reasonable alternative or substitute exists and the absence of competition is not the result of an artificial narrowing down of the parameters of the procurement.
 - 32- (10) The basic project shall indicate the extent of possible additional works or services and the conditions under which they will be awarded.
- 22.5. Hackney Light and Power have demonstrated how Emergent Energy meets the criteria as set out in PCR 2015 Regulation 32 the proposed supplier developed a method for enabling customers on private wires to switch to independent Solar Powered Photovoltaic microgrids and advocated to Ofgem that this be introduced into the industry. Ofgem (the government's regulator for the electricity markets in Great Britain) agreed that the solution was credible and following two trials to demonstrate the solution live in the market, the solution was introduced into the industry as a standard operating procedure. Emergent Energy is now progressing through the process that will see the solution become a standard industry procedure and has already delivered nine similar projects.
- 22.6. The use of the negotiated procedure without prior publication procurement route has its challenges which primarily lie in establishing the best commercial value for the Council and achieving the optimal economic advantages. The Service is minded to endeavour to assure and demonstrate this within the contract negotiation and establishment exercise.

- 22.7. The Procurement Team endorses the proposition and would support the Service in commissioning the contract.

APPENDICES

Appendix 1 - Business Case: Hackney Light and Power Residential Solar - **Exempt**

Appendix 2 - Hackney Light and Power Residential Solar Implementation Plan - **Exempt**

Appendix 3 - Independent Market Assessment

Appendix 4 - Initial tiering study

Appendix 5 - Project Risk Register - **Exempt**

Appendix 6 - Site List

Appendix 7 - Financial Projections - **Exempt**

Appendix 8 - HLP Residential Solar Equipment on Roofs

BACKGROUND PAPERS

None

Report Authors	<p>Jason Powell Head of Operations, Hackney Light and Power jason.powell@hackney.gov.uk 020 8356 2134</p> <p>Rotimi Ajilore Head of Procurement & Energy Management rotimi.ajilore@hackney.gov.uk 020 8356 2022</p>
Comments for and on behalf of the Strategic Director of Housing Services	<p>Steve Waddington Strategic Director, Housing Services steve.waddington@hackney.gov.uk 0208 356 3671</p>
Comments for and on behalf of the Interim Group Director, Finance	<p>John Holden Head of Finance Sustainability, Public Realm and Special Projects john.holden@hackney.gov.uk 020 8356 4653</p>
Comments for and on behalf of the Acting Director of Legal, Democratic & Electoral Services	<p>Patrick Rodger Senior Lawyer partick.rodger@hackney.gov.uk 020 8356 6187</p>
Comments for and behalf of the Head of Procurement	<p>Divine Ihekwoaba Procurement Category Lead - Construction & Environment divine.ihkwoaba@hackney.gov.uk</p>

	0208 356 4681
--	---------------