

CREW Energy Business Plan



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The Community

Purpose

We are CREW Energy – a Wandsworth- and Merton-based community energy co-operative delivering low-carbon solutions, energy advice and community outreach to south-west London.

Mission statement: Renewable energy and sustainability through community ownership

Society objects:

1. Developing renewable energy and renewable heating projects
2. Reducing the carbon footprint of London
3. Promoting energy efficiency
4. Involving people from the community in the project
5. Community ownership of renewable assets
6. Supporting the local community's progression to a low carbon economy

Identity

CREW Energy focuses its activities in South West London in the boroughs of Merton, Wandsworth (where we are based), Richmond, Lambeth and Kingston. We will also look to support Islington Council as we already have traction in the Borough, and they have a well-funded and well-run carbon offset fund.

We have established relationships with Wandsworth, Merton and Islington councils. We have also established relationships with community groups, particularly in the environmental sector, across Wandsworth and Merton. Richmond and Wandsworth boroughs have formed a partnership to share council services, hence working with Wandsworth will naturally lead to opportunities in Richmond.

Community Needs

Below is an analysis of the demographics and housing stock in these boroughs and hence the benefit these communities can derive from energy generation and energy efficiency projects.

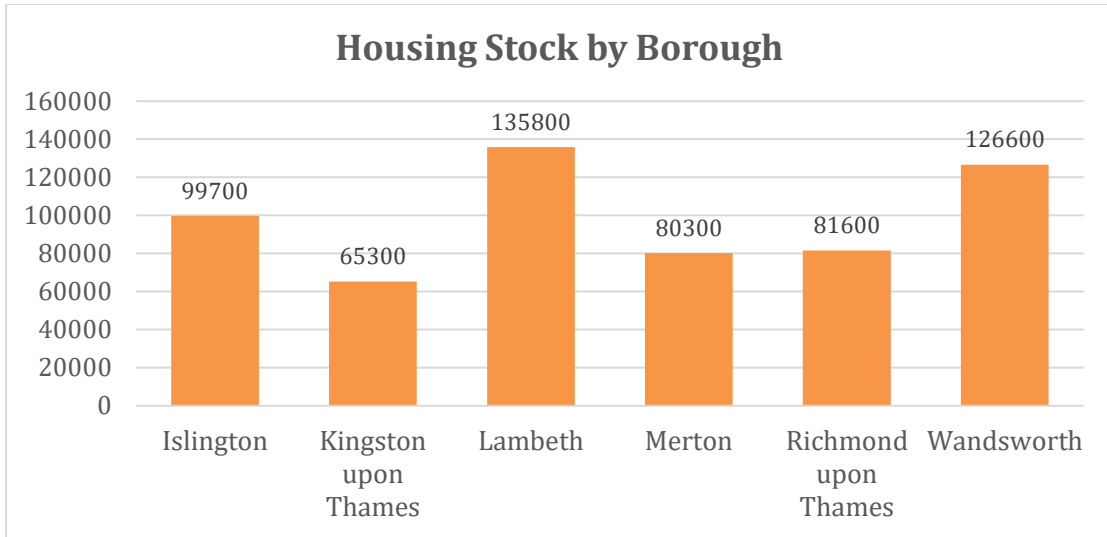


Figure 1: Housing Stock by Borough

According to the Mayor's London Datastore there are 589k homes across these six boroughs. Over half of these homes, 304k are owner occupied and our part of our able-to-pay market segment.

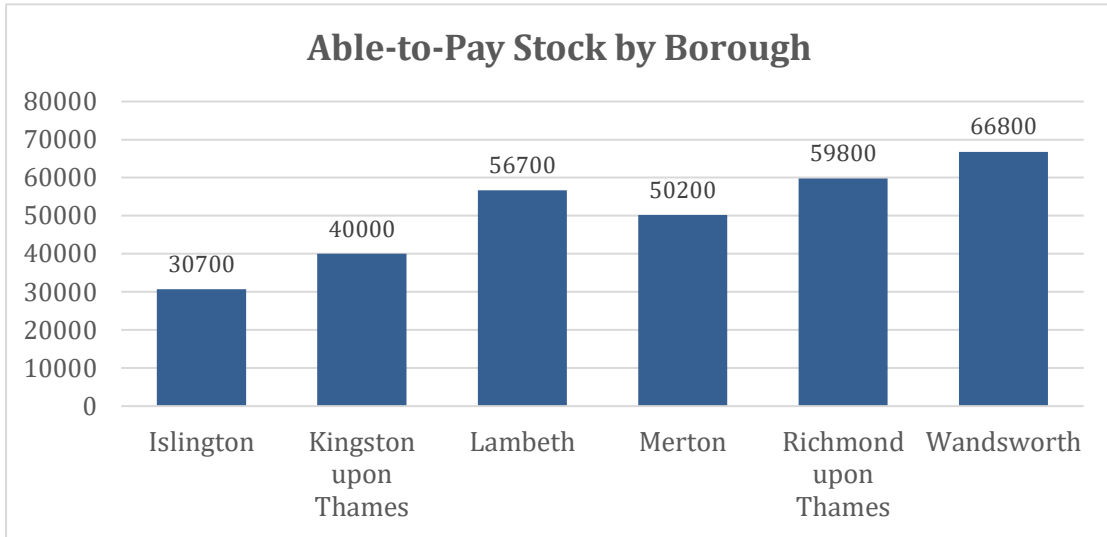


Figure 2: Able-to-Pay Stock by Borough

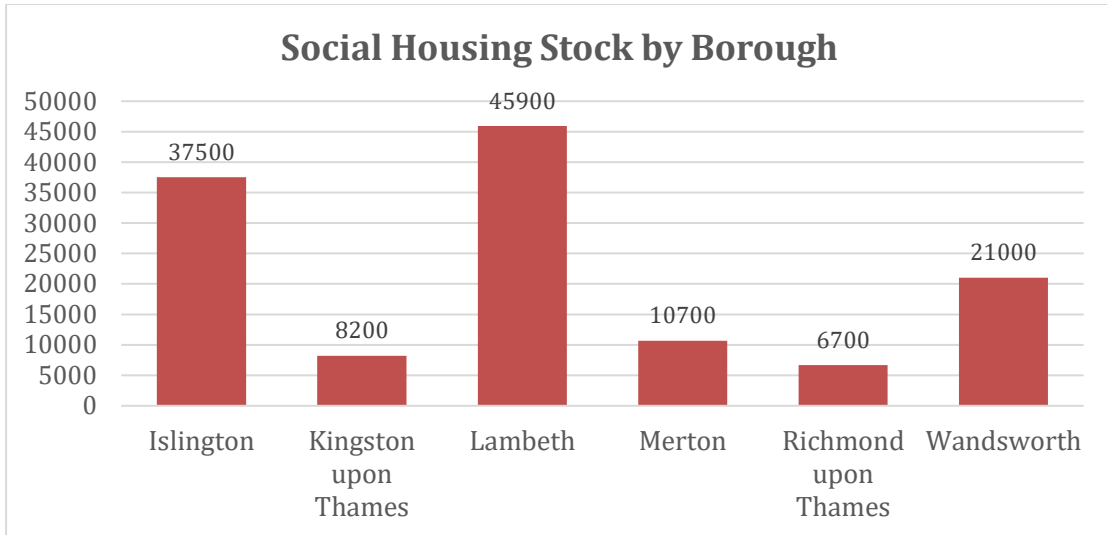


Figure 3: Social Housing Stock by Borough

Social housing accounts for 130k properties across the six boroughs. Primary markets are Islington, Wandsworth, and Lambeth as they are the largest and the bulk of the stock is still owned by the council. The lack of disaggregation in these boroughs will save us time with marketing.

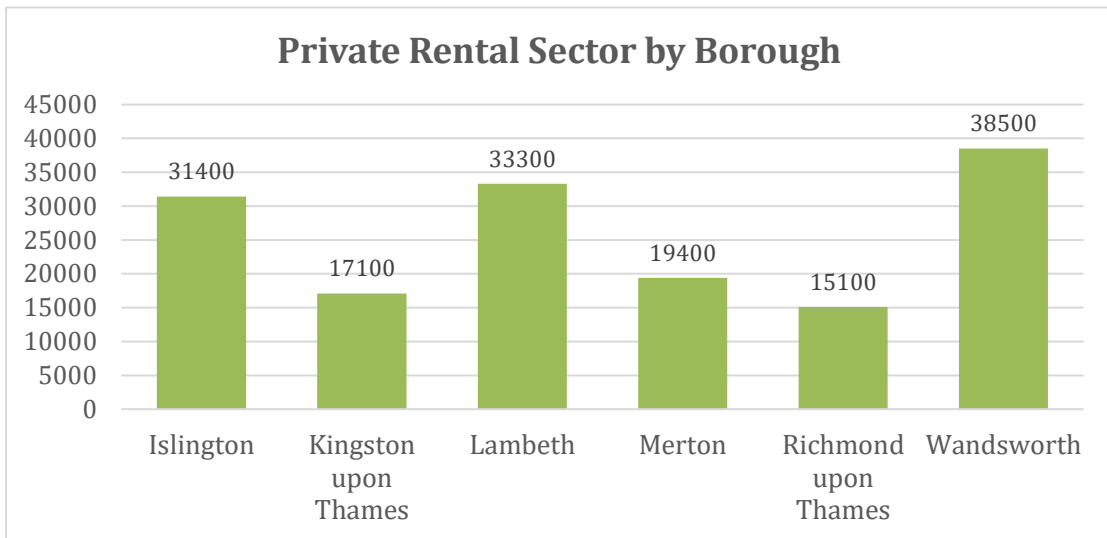


Figure 4: Private Rental Stock by Borough

The PRS market (155k) is slightly larger than the social housing market and each borough has a good amount of stock to target.

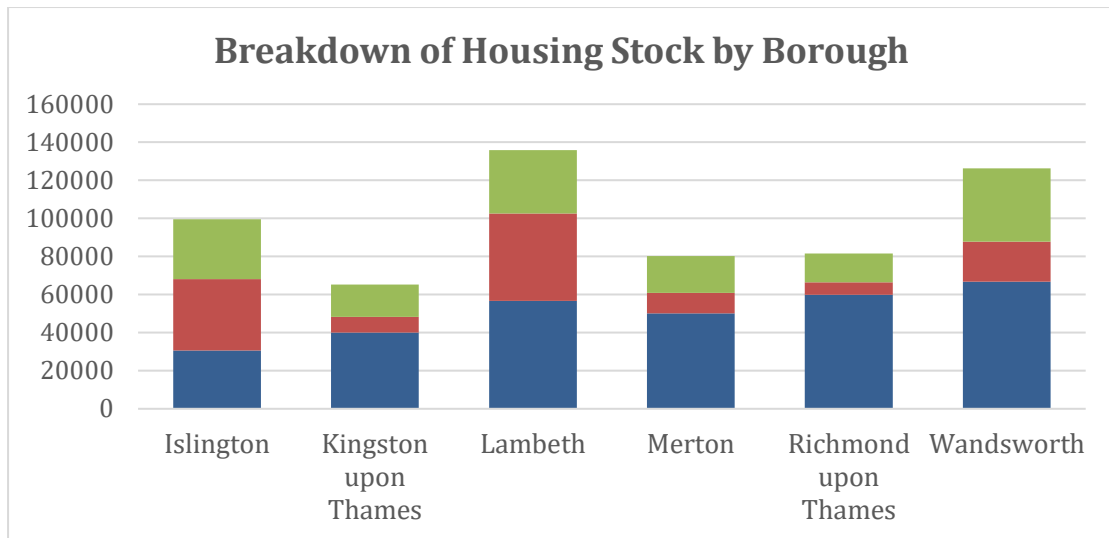


Figure 5: Breakdown of Housing Stock by Borough

We have also analysed the quality of the housing stock in each borough using the GLA's Datastore. We studied EPC lodgements since Q1 2106, to assess the percentage of properties that are EFG rated. This provides us with an insight, borough by borough, of how much work social housing providers and the PRS landlords must do to upgrade their homes.

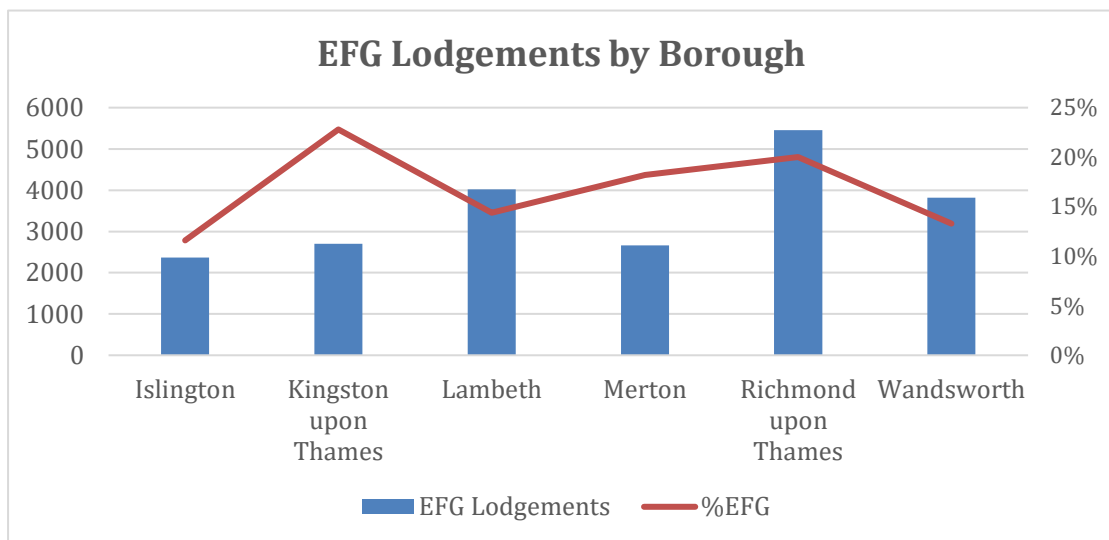


Figure 6: EFG Lodgements by Borough

Communications

We have created a detailed marketing plan for our share offer, it can be found here: [https://www.dropbox.com/s/5igoh7ad2syeuji/Marketing%20doc CREW Polka Final.pptx?dl=0](https://www.dropbox.com/s/5igoh7ad2syeuji/Marketing%20doc%20CREW%20Polka%20Final.pptx?dl=0)

Share Offer Purpose

We are aiming to raise **£50,000** to fund a renewable heat project in south-west London with the Devas Club in Battersea.

Devas Club is an important centre of the community in Battersea, hosting a range of activities. Primarily it is a youth centre offering sports, music dance, theatre and homework clubs for local youths aged 8-19. Devas also host inclusion lunches for the elderly and provide office space for local social enterprises who are, in turn, providing services to our local community.

Devas Club is home to 500 members and 250 weekly visitors. Children can learn how to use a music studio to create their own sounds. They can join after school homework clubs. They can be involved in the centre's dance and theatre groups, or they can use the gym facilities, play football or basketball on the amazing roof court. Built into all of the Club's programs is an encouragement for the children to learn and become more resilient, so as to prepare them for adult life.

In return for the investment, CREW will receive the Renewable Heat Incentive (RHI) subsidy and a heat charge from **Devas Club**. This revenue stream will allow us to pay back to our investors, with our targeted 3.5% annual interest premium.

This funding will help us **reduce the carbon footprint of our community**, save Devas Club money on its running costs and allow us to invest in **climate education and outreach** for the next generation. It is also the first urban community energy heat pump project.

Community Benefit

This project will not only help **reduce the carbon footprint** of our community by **25 tonnes per year**, by eliminating the club's existing gas boiler, it will also make Devas Club more energy efficient, saving it **£1,000 per year** on its running costs.

Beyond carbon and money savings, we are also partnering with Devas Club to make it into a sustainability learning hub for the local community. We will use surplus income from this project to run Eco Action games events to educate children in a fun and interactive way, energy cafés that will help the fuel poor and vulnerable and, finally, seminars to help you, the local community, understand what measures you can take to live a more sustainable life.

Track Record

Origins and History

CREW Energy was founded in 2014 as Community Renewable Energy Wandsworth. The members of Wandsworth Friends of the Earth were looking for a new project to take on, one that would go beyond environmental activism and allow us to take action ourselves. Seeing the success of Brixton Energy we decided to take on the challenge of bringing community energy to Wandsworth. We grouped together with other like-minded people from Wandsworth to found CREW.

Our initial goal was to a solar project replicating Brixton Energy, however, due to struggling to find an appropriate site and reductions in the Feed-in-Tariff we were driven to find a different approach to community energy projects. This led us to the

Doddington and Rollo Community Association (DRCA), a community building for local businesses and charities in Battersea. We replaced all their lighting with highly efficient LED bulbs controlled by motion sensors. The project was the first lighting community energy project in London and the first community energy project in the capital financed using an energy services agreement.

This need for **innovation** enabled us to diversify the types of community energy project we could deliver. Our subsequent projects have extended well beyond the traditional solar model, with building management systems, Hydromx heat transfer fluid and LED lighting. This year, we are expanding our portfolio of technologies and embarking on projects involving air and ground source heat pumps.

One of the founding principles of CREW is to deliver social as well as environmental benefits. We want our projects to benefit their **local communities** while **reducing the overall carbon footprint** of London. Part of our mission is to reduce fuel poverty in south-west London. We run energy cafes aimed at reaching the most vulnerable in society.

Community Benefit Performance

Over the past year our community energy projects have saved an estimated:

- 203,625 kWh of energy
- 50 tonnes of CO₂e
- 26,151 GBP on energy bills

In our energy advice café project over the winter of 2019/20 we held 27 energy advice cafes at 13 different locations across 4 different London boroughs. We also set up a phonenumber to reach people during the lockdown. We engaged with 199 members of the public at these cafes, which resulted in 81 of these people switching to a cheaper energy tariff. This saved an estimated total of 18,575 on energy bills. We also referred 27 people to Thinking Works for a Home Energy Survey

Our latest annual report stated:

What is the business of the society?

Delivering Low-Carbon Solutions, Energy Advice and Community Outreach to South-West London

Please describe the benefits to the community the society delivered.

We continue to expand our fuel poverty workshops to support local residents across target boroughs to access support and information. We have now developed several projects with local community organisations to install low carbon technologies. Any surplus monies we raise through our work are directly invested in programmes promoting sustainable community well-being.

Please describe how the society's business delivered these benefits?

We raised funds to support projects from a mix of foundations, grants, crowd funding and local investors. These funds enabled the delivery of low carbon and renewable energy installations in community buildings

The Society and its People

Structure

CREW Energy is a community benefit society registered with the FCA, society #7286 (<https://mutuals.fca.org.uk/Search/Society/28472>)

It is an independent legal entity, with no legal arrangements with any other entities. It is entirely owned and run by its members

Rules

CREW Energy adopted the Community Benefit Society structure we wish our society to be owned and run by its members for the benefit of the community. We are a not-for-profit organisation that consists of members of the community we seek to benefit.

We used the model rules for community benefit societies provided by Co-ops UK. We did not make any revisions to these rules. We adopted an asset lock to ensure the society assets can only be used for the benefit of the society. Our society rules can be found on our website here: <http://www.crewenergy.london/about-us.html>

We adopted Secondary Rules to supplement the society rules, this define the board structure, membership types and equal opportunities policy

Governance

Within our Secondary Rules we have defined a structure for our board and the responsibilities required of its members. We have also appointed a board of non-executive directors, the rules of which are again defined within our Secondary Rules.

We have also defined a conflict of interest policy. Our conflict of interest register is available on request.

Board and manager competencies

Toby Costin – Voluntary CREW Chair and paid consultant

Toby comes from a Utility background with 18 years of experience in the energy sector. In his career, he has been responsible for risk managing three power stations and setting up energy businesses for a number of banks and trade houses. In the last 7 years, Toby has focused on green energy and runs his own consulting business in conjunction with his duties for CREW Energy. Toby joined CREW in 2015 to help develop our sustainability projects and has been management lead on each project since, nine to date. He is particularly interested in how new technologies and innovative models can offer solutions in the fight against climate change. Toby's passion for community energy stems from a desire to challenge climate change while offering opportunities and support to all members of the community. A desire to build a greener and fairer society.

Tim Watson – CREW Co-Founder and Voluntary Director

Tim is a senior consultant at a business intelligence consultancy specialising in the financial services sector. Tim is passionate about climate change and sustainability and has been involved in environmental activist groups for the last ten years. Previously the chair of Wandsworth Friends of the Earth, he was one of the founding members of CREW and is keen to bring community energy to Wandsworth.

Alex Hartley – Voluntary CREW Director and Paid Energy Café Manager

Alex is a member of CREW Director and co-founder of our sister group, SELCE (South East London Community Energy), where she is also one of the architects of their fuel poverty alleviation and energy efficiency initiatives. She has 16 years of experience managing sustainability initiatives at senior level in business and the third sector. She has developed a number of programmes to tackle fuel poverty and is invited to speak at many sector events. She is vice-chair of Community Energy London and has extensive experience in the green transport sector. She holds several other volunteer directorships and previously worked for the Energy Institute.

James Mummery – Voluntary Non-Executive Director

James is Wandsworth born and bred, passionate about making London a sustainable city. He worked as a youth facilitator, volunteer coordinator and project manager in the charity before moving to Transport for London (TfL). Now he manages city wide infrastructure upgrade projects and has recently completed an MSc in Project and Enterprise Management at UCL.

Amy Reid – Voluntary Non-Executive Director and Communications Lead / Paid consultant

Amy is a translator-turned-project-manager. She is passionate about the environment and sustainability, putting her language skills to good use in her CREW communications role and helping run our energy cafés in Spanish with the Latin-American community.

Peter Urquhart – Treasurer

Peter Urquhart is a passionate sustainable property advocate and has a specific interest in renewable technologies. His experience comes from many of his own projects, but his background is also in finance and accountancy, providing financial consulting services to many businesses. Peter sees the implementation of local renewable energy solutions as having a key part to play in addressing climate change whilst also having a wider community benefit. He believes that the important work CREW Energy carries out enables many of these projects to fruition which otherwise may not have happened

Business Plan Development

This business plan has been developed by Toby Costin and Time Watson, two of the directors of CREW Energy. Profiles for both are in the previous section.

Toby has several years' experience setting up energy businesses for a number of banks and trade houses, and he has also run his own green energy consulting business for the past 7 years. Tim is the head of service delivery at Pomerol Partners and is responsible for writing business proposals for projects.

Partners and Stakeholders

CREW Energy does not have any partners or stakeholders outside of the society that are directly involved in delivery of the business plan.

CREW Energy has partnered with South East London Community Energy (SELCE) for the delivering of energy advise cafes. We are working together in an informal arrangement for the delivery of energy advise across South London.

CREW Energy is a member of Community Energy London and supports the aims of this organisation.

Membership Strategies

Recruitment

Our recruitment strategy is split into two approaches, our general ongoing recruitment and when we need to fill a specific role. We are always willing to take on new volunteers that are keen to get involved. We continually promote CREW through our social media channels and website, we also exploit our networks across South West London to attract new members. We have had a steady supply of new volunteers through this approach.

When we have a specific role to fill such as a project manager or head of communications we put up a job advertise on job boards such as <https://www.environmentjob.co.uk/jobs>. We have successfully managed to fill all vacancies with this approach

Retention

As a volunteer-led organisation retaining member's active involvement in CREW requires a pro-active approach to keep them informed of what CREW is doing and giving them ways to get involved. We use Slack for communication within the group, this allows all members to be kept informed of what is going on and conversations that are happening between other members. We also use Trello to track our project work, this is again accessible to all members. Lastly, we hold monthly all member meetings to create a forum for members to ask questions of the directors and be directly involved in group wide decisions.

We also take steps to proactively ensure new members are given tasks to do so that they can contribute to CREW from the beginning, providing them with a path to getting involved in the running of CREW.

Policy

We're governed by our incorporating rules and supplementary policies and are open to everyone. There's no pre-requirements set for membership. Our rules also define our equal opportunities and diversity policies.

The Business Model

Long-term Goals

In early 2020, CREW Energy won a £99,162 grant from Power to Change's Next Generation programme to develop a community energy business model around ASHPs and ground-source heat pumps (GSHP). Our aim is to develop a sustainable community energy business model focused on the provision of renewable heat. This will focus primarily on the roll out of air-source heat pumps (ASHP) across an urban context to generate renewable heat, reduce gas consumption and improve air quality.

Our ultimate goal is for this to become a sustainable business model that enables us to achieve our society objectives. This business plan focuses on the period covered by the Next Generation grant from early 2020 through to late 2021.

The adoption of heat pumps will have positive impact in three areas:

Carbon Reduction

A typical residential gas central heating (GCH) system produces 3.5 tonnes of carbon p.a. This compares to just 1.0 tonne from an efficient Air Source Heat Pump (ASHP). Storage heaters that use electricity resistance to generate heat will produce 325%-400% more emissions than an ASHP, due to the 1:1 ratio of electricity in and heat out.

Measures like smart heating controls, insulation, heat transfer solutions and improved glazing can dramatically reduce heating demand and reliance on gas.

Fuel Poverty and Cost Reductions

1 million homes in Britain are heated electrically. The majority homes are in blocks of flats in city centres. The average cost of running a storage heater is 12p -14p per kWh. For people who are at home during the day this number rises considerably.

Shared ground array heat pumps can heat homes at 4p per kWh. Potentially, reducing costs by two thirds.

The next generation of ASHP's are 400% efficient at 50°. On a 16p tariff they will heat a single dwelling at 4p. If similar on GCH buys gas at 4p, it heats its home at 4.7p. If we consider a typical gas standing charge is £90, that adds an additional 0.76p to the running costs.

This is before we consider the lower maintenance charges of heat pumps compared to gas boilers.

Smart controls can cut energy consumption by 10-20% and heat transfer solutions by 25%. Insulation has the potential to reduce heating demand by up to 30%

Air Quality

Gas flue emissions are the third highest cause of pollution in our city centres. Beyond the CO₂ they produce, gas boilers also release particulate matter, carbon monoxide and NO_x. Phasing out gas boilers would significantly improve air quality.

Again, by improving the thermal efficiency of homes would reduce demand for gas and cut gas flue emissions.

Business Activities

Community Energy Projects

The primary focus of CREW Energy is community energy projects, community led projects in renewable energy, energy demand reduction or energy supply.

To date we have completed 5 projects:

- Doddington and Rollo Community Association (DRCA)
 - Locality: Battersea, London
 - Annual energy saved: 18% on energy bills, 116,762 kWh, 29 tonnes CO₂e
 - Money saved: £600-£700 per month
 - Tech used: Motion-controlled LED lighting
- The Parent House
 - Locality: Islington, London
 - Energy saved: forecast 6500kWh equalling 2 tonnes of CO₂e
 - Money saved: £850 per annum
 - Tech used: solar panels, LED lighting and Hydromx
- New Unity non-religious church
 - Locality: Islington, London
 - Energy saved: forecast 40,000kWh, 9 tonnes of CO₂e per annum
 - Money saved: £2,000 per annum
 - Tech used: Building Management System (BMS) and Hydromx
- Islington and Stoke Newington Sea Cadet Unit
 - Locality: Islington, London
 - Energy saved: 2.13 tonnes of CO₂e per annum
 - Money saved: £1,532 per annum
 - Tech used: solar panels and battery storage
- Devas Youth Club
 - Locality: Battersea, London
 - Energy saved: 11.72 tonnes of CO₂e per annum
 - Money saved: £3,400 per annum
 - Tech used:
 - Phase 1: solar panels, LED lighting and Hydromx within the heating system

- Phase 2: building management system, additional LED lighting, secondary glazing, stratifiers

For more details go to: <http://www.crewenergy.london/projects.html>

We managed every aspect of these projects including:

- Technical feasibility study
- Financial modelling
- Planning the installation
- Raising funding
- Managing the install
- Setting up a maintenance plan

Projects are funded through a combination of grants, loans and share offers. To date all our projects have been funded through grants and loans. The Devas Youth Club ASHP project will be our first project involving a share offer. Going forward we expect project development to be funded by grants and project capital expenditure to be funded by share offers.

Two income instreams are generated for CREW:

1. Salary income for the work required to develop the project
2. Consultancy fee of 10% of project costs that CREW charges as standard, which is used to fund the CREW business

CREW differentiates itself from its competition through the wide range of technologies we use in our projects. This increases the range of projects that are feasible and hence the number of sites we can work with, and it also generates more opportunities for our clients to save money. We are also the first community energy society to use heat pumps in a community energy project.

Home and Business Carbon Assessments

CREW Energy has trained staff and key volunteers to achieve supplier/industry accredited energy assessment and surveyor skills. Using these skills, CREW staff/volunteers will undertake the building surveys with interested clients to produce the technical scoping documents for the installer. CREW Energy would charge for each assessment. This approach achieves three key benefits

- Increases capacity for small installer businesses to meet growing market demand
- Provides additional income stream for CREW Energy
- Increases skill base of volunteers/staff working in renewable energy

We have trained two members to be Domestic Energy Assessors and one to be a Commercial Energy Assessor. We have funding requests posted for to train a further 11 people over the next three years. We aim to create a training path for young people so they can be part of this expanding sector.

Energy Advice and Education Service

CREW supports South West London boroughs through its community outreach branch, offering energy advice sessions to combat fuel poverty and Eco Action games sessions to raise awareness of sustainability amongst school children.

We host energy advice cafés at community centres in Wandsworth, Merton and Lambeth. At our energy cafés, participants receive personalised face-to-face assisted support for switching energy suppliers; advice on energy efficiency measures and behaviours; and then, depending on circumstances, advice and signposting to trusted suppliers around energy debt support, renewables and energy efficiency measures. The goal is to help those in fuel poverty reduce their energy costs and have a warmer home.

The energy café service delivers the following outcomes:

- Tariff switching and time of use tariff awareness
 - Our advisors work directly with the attendees of the cafes to switch them to a cheaper energy tariff
- Behavioural change
 - Attendees of the cafes are provided with advice on how to save energy in the home and provided with leaflets that describe simple energy saving tips
- Health and wellbeing improvement
 - High energy prices mean that many are afraid to put the heating on and adequately heat their cold homes not realizing that this can lead to health risks. These can lead to or exacerbate issues such as respiratory, cardiovascular illnesses, mental ill health and increased trips and falls due to cold homes. Our cafes provide attendees with the means to afford to keep their heating on throughout winter and information on the health benefits of maintaining a warm home
- Energy efficiency improvements
 - We offer home energy surveys to the attendees of the cafes. These surveys will identify ways in which the energy efficiency of their home can improved. Installation of inexpensive energy efficiency measures will be included as part of the survey, such as placing foil behind radiators. Energy efficiency retrofits will be offered to those who can afford it

We have been delivering energy café sessions since 2018 but saw a real upward turn towards the end of 2019 when we were awarded just over £13,000 of funding to train 18 additional volunteer energy advisors. Throughout our Winter 2019/20 energy café programme, we partnered with local charities Wimbledon Guild, Age UK Merton and Thinking Works to deliver energy advice to 373 residents of Merton and Wandsworth at 27 energy advice cafes in 13 different locations across 4 different London boroughs. In February 2020 we further extended this offering with workshops in Spanish, held at the Indoamerican Refugee and Migrant Organization in Brixton and Latin American churches in Lambeth.

We launched our Eco-Action Games workshops in late 2019 in a pilot session at Devas Club and have so far hosted sessions with them, Wandsworth Youth Climate Commission and Merton Libraries 'Spine Festival'. The workshops are designed to educate young people (aged 8-16) around key environmental themes and energy-saving projects, so that they can take these behaviours home and adopt them in their adult life. These sessions are the perfect opportunity to get children involved in climate action and teach them the value of saving energy.

Our energy advice and education service does not generate income for CREW; however, they enable us to achieve our social goals. We also build strong links with the community and the councils through this work which leads to opportunities for our income generating services.

Market Opportunities

Merton

CREW Energy was elected to Merton Council's Climate Emergency Committee, tasked with leading on "building energy" and "green finance" streams. This project is now complete and has been passed by the council.

The council is now working models for its implementation phase with its preferred option to support community driven schemes.

The council has already provided half hourly energy consumption data for one of their libraries and a children's centre. They are interested in how bi-valent heat systems will help reduce carbon emissions at cost effective rates.

We are also working with Sustainable Merton, a local community group focused on green spaces and waste. They have asked us to support their Business Energy Champions campaign. The project will help support businesses progression to zero carbon. They have ERDF funding for the project.

CREW Energy is part of Merton's Warm and Well outreach team. This is leading us to work with some of the larger charities in the borough.

We are developing a project with the Polka Theatre that could encompass solar panels, heat pumps and three energy efficiency measures.

Wandsworth

Wandsworth Council is keen for us to support their schools programme and are working with us to provide a trial site for our shared ground array project.

CREW Energy has traction with several charities in the borough through previous work funded by UKPN, Wandsworth Fund and Wandsworth Local Fund. We have completed one project with Devas Club and have two further in the pipeline. We are also bidding for funding for a second project with the Doddington Rollo Community Association.

Wandsworth Chamber of commerce has asked us to develop gold standard sustainability awards for local businesses.

Islington

We have delivered three community projects to date for three charities funded via the Council's carbon offset fund.

We have now partnered with a local community group, Power up North London (PUNL) to deliver community heat projects in the borough.

Kingston, Lambeth, and Richmond

Each council has now declared a climate emergency. We have held initial meetings with Richmond and Kingston Councils. Richmond is interested in outreach work to their staff as the first step. While Kingston is interested in supporting community lead energy projects.

We have started outreach programmes in Lambeth with specific focus on our energy cafés

Customer Offer

We have created a detailed marketing plan for our share offer, it can be found here: [https://www.dropbox.com/s/5igoh7ad2syueji/Marketing%20doc CREW Polka Final.pptx?dl=0](https://www.dropbox.com/s/5igoh7ad2syueji/Marketing%20doc%20CREW%20Polka%20Final.pptx?dl=0)

Competitive Advantage

Community Energy Projects

Heat Pumps

In general terms, London remains an untapped market for heat pumps. We have completed some market research and studied lead generation companies. The two most active in this market are Green Business Watch (GBW) and Renewable Energy Hub (REH). GBW has no installers in SW London or in North London. REH lists six installers but only two are actually MCS certified and neither is procuring leads in London.

On our shared ground array concept, Kensa Heating are the most active in the UK and have experience of working in London with Enfield Council. There are insurgent competitors now entering the market with more efficient units and with innovative ways of maximising space.

We have no direct competition in London from other community groups and we would look to work with PUNL and SELCE, to provide us with leads and introductions.

Solar Panels

There are many capable installers in this sector but lead generation is key. CREW is well placed to develop projects for two reasons:

1. We have a strong and developing network of contacts in SW London.
2. We can provide finance through share offers, grants sourcing, or third-party funders.

Energy Efficiency

We have focused our sourcing on innovative products that have little competition. The Tensor BMS is the only product of its type that is approved by the Carbon Trust and that is on its Energy Technology List.

Energy Effective's Hydromx heat transfer solution is a unique nanotechnology product that can cut heating demand by 25%.

Home and Business Carbon Assessments

While the EPC market is highly competitive and cost driven, our carbon and lifestyle assessments will provide a USP that should allow us to expand this area of our business.

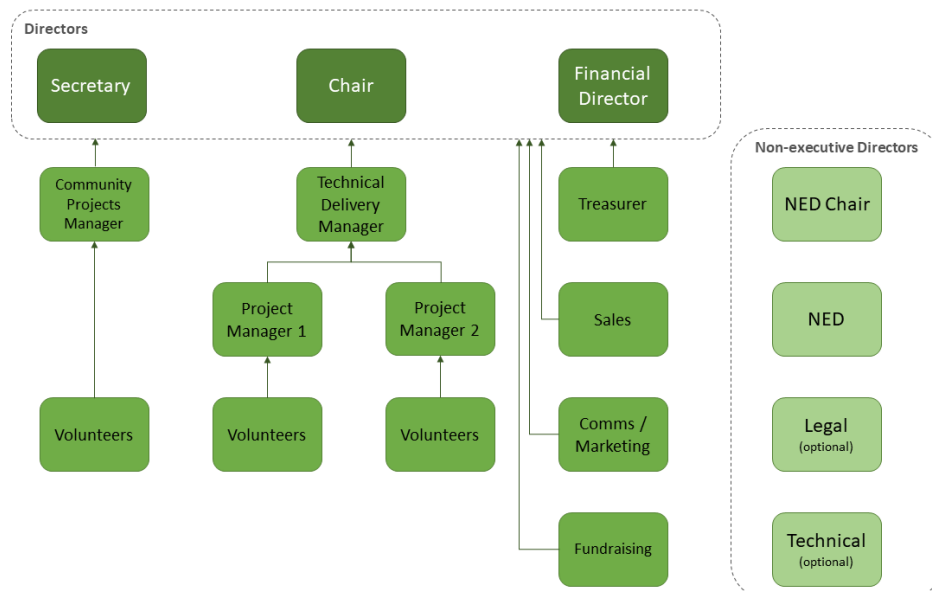
Operations

Premises

CREW Energy has no office, we have always worked remotely. The original project plan agreed with Next Gen included renting an office, however, due to the lockdown necessitated by the COVID-19 pandemic we are no longer planning to rent an office and will continue to work remotely.

Workforce

Organisation Chart



Role Assignment

- Toby Costin (part time)
 - Chair

- Technical delivery manager
- Sales
- Fundraising
- Alex Hartley (part time)
 - Secretary
 - Community projects manager
- Tim Watson (volunteer)
 - Financial director
- Amy Reid (part time)
 - Communications and marketing
- Peter Urquhart (volunteer)
 - Treasurer

CREW also has a number of other volunteers who are not named in this plan who run the energy cafes and contribute to the deliver of the community energy projects

Simmons and Simmons solicitors provide CREW pro-bono legal advice which includes reviewing all our contracts

Requirements

The project plan we created for the Next Gen fund details what resources are required and when they are required in order to implement the business plan. In summary we require the following part time roles:

- Project manager
- Technical lead (Installation planning, financial modelling)
- Marketing / social media manager

We also require two members to be trained as Domestic Energy Assessors and one to be trained as a Commercial Energy Assessor.

Equalities and Diversity

CREW Energy has adopted an equal opportunities policy as part of our secondary rules:

Equal Opportunities: CREW will not discriminate on any grounds, including those of gender, race, colour, ethnic or national origin, sexuality, disability, religious or political belief, marital status or age.

We also have a Volunteer Policy that defines our processes and procedures regarding volunteers, this includes an equal opportunities policy defining how volunteers should behave when representing CREW Energy

Volunteers will work in accordance with the society's equal opportunities policy and will prevent discrimination on any grounds.

It also defines a statement of intent regarding diversity

In harmony with our policy volunteers will be sought from all sections of the community. CREW Energy will make special efforts to recruit volunteers from any section of the community which appears to be underrepresented.

Policies and Processes

CREW Energy has the following formal policies:

- Volunteer Policy
- Health and Safety Policy
- Safeguarding Policy
- Expenses Policy
- Data Security Data Privacy Policy
- Director Conflict of Interest Statement
- All Venues Risk Assessment

Capital & Financial Forecasts

Please refer to the included spreadsheet “CREW Energy Financial Forecast 202011.xlsx” for details of the capital requirements of the business and forecasts for:

- Revenue
- Profit and Loss
- Balance Sheet
- Cash flow

Share Offer Plan

This section details our financial model for our share offer for the installation of an ASHP at the Devas Youth Club. Two of CREW’s directors work in the renewable heat and accounting industries respectively and have created and approved this financial model. As with all financial models, it is reliant on various assumptions, which are listed below.

Income

The Devas Club has a modelled heat demand of 196,000 kWh. This outstrips its current gas consumption of 165,918 kWh which reflects the supplementary heat that the building uses via plugin radiators and blow fans.

We expect this demand to fall somewhat with the installation of a building management system and Hydromx heat transfer solution, both of which form part of phase 2 of our project with Devas Club. For this model, we have assumed a 30% reduction in demand to 138,888kWh from these two technologies. We forecast that the heat pumps will supply 90% (125,000 kWh) of the remaining heat the building requires. The heat pumps will provide all heating needs to as low as 3 degrees Celsius. Any remaining heat will be supplied by the current gas boilers.

The return on investment in our financial model comes from two income streams:

1. Renewable Heat Incentive subsidy from the Government for every kWh of heat produced, paid on a quarterly basis over 20 years, i.e. 2.79 pence per kWh index-linked to consumer prices index (CPI) for the next 20 years.

2. A heat charge of 1.5 pence charged by CREW Energy to the client (Devas Club) for each kWh of heat consumed. Again, this figure is index-linked to CPI for 20 years and will be paid every month.

Total income over 20 years from these two sources totals £128,552.74 against a repayment of principal investment and interest of £65,750. We have allowed a project buffer of £6,731.80 for early redemption, overruns and project management. Total cash flow generated from this project over 20 years will be £73,095.41, which will be used to cover share administration, O&M costs and community projects.

Capital Costs

Equipment and installation costs total £43,268.20, which includes:

- Four air-source heat pumps and accompanying equipment
- All plumbing works required for the installation, testing and commissioning of the system
- All materials required for installation, testing and commissioning of the system
- Parts and workmanship warranty
- All travel, accommodation and other costs associated with completing the work

We have incurred £1,200 of expenses relating to structural surveys and to the Energy Performance Certificates required for pre-registration costs. Other costs associated with feasibility assessments and planning have been met through a grant from the Power to Change Next Generation fund. Our legal negotiations were handled on a pro-bono basis by Simmons & Simmons.

Expenditures

There are a number of expenditures throughout the course of the project. These include:

- Interest and principal repayment to members
- **Operations and maintenance (O&M)** – O&M costs for heat pumps are generally low and there are multiple providers covering the London area. Initially, we expect that these services will be provided by the installer and will total less than £100 per annum.
- **Project management and administration** – this will include preparing accounts, managing the ongoing contracts, administering payments to suppliers and shareholders, etc.

These expenditures will be financed using the cashflow generated throughout the life span of the project.

Assumptions

- **Administration costs** – our administration cost assumptions are based upon an assessment of the costs of administering existing air source heat pumps.

- **Generation** – our heat pump engineers and installers have worked together to estimate the productivity (kWh) of the units over a typical year, in accordance with standard industry methodology.
- **Consumer Prices Index / Retail Price Index** – we assume that the CPI will average at 1.91% over the next 20 years. We believe this is a reasonable assumption for the long-term average based on historic figures and the Bank of England’s target of 1.91% for the Consumer Price Index (CPI).

Forecasts

Based on our financial model (using the assumptions above) we forecast that, in our base case, we will be able to provide: a 3% interest rate to members; full capital repayment in year 20; and generate a fuel poverty fund of over £40,000 over 20 years.

Project Cashflow Model

The following table provides financial projections for a 20-year period. This does not include any income from grants for fuel poverty-focused work, or other unrelated work.

Project cost	£43,268.20	Borrowing rate	3.00%	Project IRR	5.39%	
Consumption kWh	125,000	Repayment starting year	3			
RHI p/kWh	£0.0279	Client charge £/kWh	£0.0150			
CPI	2.50%	Project Raise	£50,000.00			
Heat pump	90%	Project Buffer	£6,731.80			
Year	RHI Income	Client charge	Repayment	Debt	Interest	Cashflow
						-£43,268.20
1	£3,138.75	£8,606.80	£0.00	£43,268.20	£1,298.05	£10,447.50
2	£3,217.22	£1,921.88	£0.00	£43,268.20	£1,298.05	£3,841.05
3	£3,297.65	£1,969.92	£2,777.78	£40,490.42	£1,214.71	£1,275.08
4	£3,380.09	£2,019.17	£2,777.78	£37,712.64	£1,131.38	£1,490.10
5	£3,464.59	£2,069.65	£2,777.78	£34,934.87	£1,048.05	£1,708.42
6	£3,551.21	£2,121.39	£2,777.78	£32,157.09	£964.71	£1,930.11
7	£3,639.99	£2,174.43	£2,777.78	£29,379.31	£881.38	£2,155.26
8	£3,730.99	£2,228.79	£2,777.78	£26,601.53	£798.05	£2,383.95
9	£3,824.26	£2,284.51	£2,777.78	£23,823.76	£714.71	£2,616.28
10	£3,919.87	£2,341.62	£2,777.78	£21,045.98	£631.38	£2,852.33
11	£4,017.87	£2,400.16	£2,777.78	£18,268.20	£548.05	£3,092.20
12	£4,118.31	£2,460.16	£2,777.78	£15,490.42	£464.71	£3,335.98
13	£4,221.27	£2,521.67	£2,777.78	£12,712.64	£381.38	£3,583.78
14	£4,326.80	£2,584.71	£2,777.78	£9,934.87	£298.05	£3,835.69
15	£4,434.97	£2,649.33	£2,777.78	£7,157.09	£214.71	£4,091.81
16	£4,545.85	£2,715.56	£2,777.78	£4,379.31	£131.38	£4,352.25
17	£4,659.49	£2,783.45	£2,777.78	£1,601.53	£48.05	£4,617.12
18	£4,775.98	£2,853.03	£2,777.78	-£1,176.24	-£35.29	£4,886.52
19	£4,895.38	£2,924.36	£2,777.78	-£3,954.02	-£118.62	£5,160.58
20	£5,017.76	£2,997.47	£2,777.78	-£6,731.80	-£201.95	£5,439.41
Total	£80,178.29	£54,628.03	£50,000.00		£11,710.92	£73,095.41

Risk Analysis

Risk Register

Please refer to the spreadsheet “CREW Energy Risk Register.xlsx” included with this business plan

Risk to Capital

Since its establishment CREW Energy has maintained a simple and effective financial management policy to ensure the financial stability of the organisation.

The balance sheet shows sufficient cash reserves in place to ensure the viability of our ongoing activities.

CREW Energy currently has one long-term liability in place, being a loan from the British Airways Carbon Fund, administered by Leapfrog. All payments have been made on time and as per contract.

This loan supported a renewable energy project with the Doddington and Rollo Community Association in South West London with whom CREW has a corresponding loan agreement. Payments are made to CREW by DRCA under the terms of the agreement, which provides the financial means for CREW to meet its obligations with Leapfrog. This is a 10-year loan obligation, ending in 2027.

Insurances

CREW Energy has Small Charity insurance provided by Ansvar that gives the following cover:

Type	Cover
Public and Products Liability	£1,000,000
Employers’ Liability	£10,000,000
Trustees’ and Directors’ Indemnity	£100,000
Legal Expenses	£250,000

Monitoring and evaluation

We have a number of processes in place for monitoring the progress in implementing our business plan that go beyond the informal tracking of society performance that the directors will carry out as part of their regular duties.

Firstly, as part of the Next Generation fund program we are required to provide a progress report at the end of each phase. The report consists of:

- Budget update
- Progress update
 - This should reference the milestones, outputs and activities you have described in your latest plan and might include:

- Activities completed
 - Key decisions made
 - Milestones met / not met
 - Reflections on progress to-date
- Findings and Learnings
 - Conclusions from research you have conducted
 - Insights you have gained new discussions /meetings with partners
 - Challenges you've faced / are facing
 - Any new opportunities that have come to light
- Adaptive Management
 - This should be a summary of any changes you'd like to make to your plan or budget. These will need to be reflected in a refreshed budget and activity plan at the end of each phase.

This report forms part of the conditions of continuation of receiving funding.

Secondly, a condition of the funding we received from UKPN for the energy café project was that we were required to provide quarterly updates on the progress of the project. These updates included details of:

- The number and location of energy cafes held
- The number of interactions with members of the public across the cafes
- The outcomes of these interactions
- The money saved by these members of the public on their energy bills as result of these outcomes
- The number of people referred for home energy surveys

Finally, we have appointed a board of non-executive directors, that consists of at least two members.

- The non-executive directors shall meet once a quarter to review the activities of the directors to ensure
 - a. They are acting within the rules of the society
 - b. They are acting with the best interests of the society's members
- The non-executive directors shall ask the group secretary to call an extraordinary general meeting should they deem that the board of directors is not acting as defined above

Implementation

Below is the high-level project schedule submitted to Power to Change for the Next Generation Fund

Phase 1	Phase 2	Phase 3	Phase 4	Phase 5
Dec 2019 – Jan 2020	Feb – Apr 2020	May – Oct 2020	Nov 2020 – Apr 2021	May – June 2021
<p>The aim of this phase is to get staff trained to be EPC assessors for our work with councils, social housing providers and the able-to-pay market.</p> <p>We will also start work on heat metering and demand shifting options for heat.</p> <p>Initial research on site options for both the commercial project and shared ground array.</p> <p>Set up office and order office equipment</p>	<p>The target for this phase will be to agree on a site for our commercial installation.</p> <p>Develop documentation for a community share offer.</p> <p>Start to build a marketing plan for the share offer.</p> <p>Start the legal work for both the share offer and the contract for the commercial offering.</p> <p>Arrange site surveys for the potential site along with costings and updating the ROI model.</p> <p>Carry out the EPC and heat loss calcs for the building.</p> <p>Start process to find a suitable building for a shared ground array.</p> <p>Soft launch able-to-pay marketing strategy.</p> <p>One person has commercial EPC training.</p>	<p>Deliver the first commercial project, finalize site for shared ground array.</p> <p>Launch the community share offer.</p> <p>Add buffer tank and DSR Kit to allow demand shifting.</p> <p>Build outreach material for shared ground array residents.</p> <p>Develop legal documents for shared ground array and amend share offer for shared ground array.</p> <p>Full launch of marketing strategy for able-to-pay market. Start data analysis on DSR from heat shifting.</p> <p>Commercial EPC training for one employee.</p>	<p>The focus of this phase will be to deliver the shared ground array.</p> <p>This will involve a community share offer</p> <p>Outreach work to the residents in the trial block</p> <p>We will also fund the installation of heat meters to test their function for a post RHI landscape.</p> <p>We will also analyse the performance of the ASHP and DSR performance of the buffer tank on the commercial scheme after its first winter.</p>	<p>Review the successes and failures of the project.</p> <p>Report on performance of heat pumps and DSR.</p> <p>Report on customer feedback on install process and performance.</p> <p>Feedback on legal process.</p>

Appendix: Finance Summary

	2019 / 2020	2018 / 2019	2017 / 2018
Society Funds			
Member share capital	16	16	13
Reserves (accumulated retained surplus)	6,060	(16,132)	(18,273)
Assets (loans)	16,445	18,637	20,830
Long term liabilities (loans)	(16,445)	(18,637)	(20,830)
Net society funds (Share capital + reserves – long term liabilities)	6,076	(16,116)	(18,260)
Member Share Capital			
Opening balance of member share capital	16	13	11
Closing balance of member share capital	16	16	13
Membership levels			
Number of members at the beginning of year	16	13	11
Number of new members joining	2	3	3
Number of members leaving	2	0	1
Number of members at the end of the year	16	16	13
Application of surpluses or profits			
Net surplus (deficit) for the year	6,060	(16,132)	(18,273)
Donations to community, social or charitable organisations or activities	-	-	-
Surplus reinvested in the society (reserves)	6,060	-	-

Appendix: References

Society rules: <https://www.dropbox.com/sh/z581n487f0yra2s/AABTyQT-Wzgu9FBWtbLLfmzXa?dl=0>

Conflict of interest policy and register:
<https://www.dropbox.com/sh/u1dzq94nlsnlowt/AAAGfYrxzIcOyNzLaO5HLos2a?dl=0>

Membership register:
<https://www.dropbox.com/sh/byiyymm0g5d1c3u/AABZZedv1NOYTizIhlpFDmk7a?dl=0>

Society policies:
<https://www.dropbox.com/sh/47fflvk0kb993p8/AAAaVxpXkKgsU481-jKK BXma?dl=0>

Share offer marketing plan:
<https://www.dropbox.com/s/5igoh7ad2syeuji/Marketing%20doc CREW Polka Final.pptx?dl=0>

CREW Energy Financial Forecast 202011.xlsx (sent as attachment with business plan)

CREW Energy Risk Register.xlsx (sent as attachment with business plan)

Next Gen Project Plan, Budget and Payment Schedule:
<https://www.dropbox.com/s/5oknewok6d743r8/Crew%20Energy-%20Gantt%2C%20Activities%2C%20Budget%2C%20Payment%20Schedule%20for%20Next%20Generation%20Fund%20FINAL.xlsx?dl=0>