

Director's Annual report (1.2.17 to 31.1.18)

INTRODUCTION

It's been a full and interesting year for ECOE. All of our solar sites have been generating power for well over a year and some have started their third year. We also have achieved several firsts - the launch of our first Community Fund awards, our first energy saving project helping alleviate fuel poverty and supporting the vulnerable, our first loan for the installation of LED lighting at Exeter Phoenix and our first foray into hydro to investigate the feasibility of a project at Trews Weir.

ECOE'S PROJECTS

Solar PV

Although we have investigated twelve sites in Exeter and its surrounds, no new solar rooftop sites have been installed this year. Installation costs have increased rather than decreased due to the poor standing of the pound and the low FiT rates (to end March 2019). This means that only projects with low installation costs, high usage and 'easy' legals are viable. If and when storage becomes more of a possibility, as battery prices fall, then we will be looking at an improving picture.

Sites investigated include Plymtree Village Hall, The Beacon Centre, Glenorchy Church, Sidmouth Methodists Church Hall and Exminster School. A few of them are borderline financially viable, we hope to progress some and if we secure funding for project development costs that could make the difference.

Solar PV 1 and 2: Operational news

Performance

The summary of the sites performance for 2017 is shown below with comparison figures for 2016 and the predicted annual generation. Total generation across all sites for 2017 was 349,631 kWh, enough energy to power 87 homes for a year.

Site	Capacity kWp	Annual energy generated kWh			Carbon saving 2017 kgs	Actual usage by host 2017	Predicted Usage by host
		Predicted	2016	2017			
Exeter Library	29	27600	25,616	25,787	10,831	96%	95%
Great Moor House	100	92,652	86,227	79,823	33,526	94%	95%
Shillingford Barton Barn	25	25,000	25,998	24,422	10,257	54%	60%
Shillingford Processing	14.5	14,500	14,597	13,590	5,708	94%	60%

Site							
Wonford CLC	20.5	19,540	18,989	17,735	7,449	Not available	50%
Exeter College	150	138,737		128,431	53,941	57%	65%
Pinhoe RBC	19.96	17,299		17,267	7,252	26%	30%
Glasshouse	20.14	17,646		19,372	8,136	44%	70%
Beehive	29	24,431		23,204	9,746	80%	50%

Fig 1: Annual performance figures for 2016 and 2017

For those installations that have been operating for at least 2 complete years, there was an average of a 6% drop in electricity generated in 2017 compared with the previous year. This can be partly attributed to irradiance figures, which were lower in 2017 than in 2016, particularly from July to October. Other factors affecting production above this level are discussed in the operational matters section below.

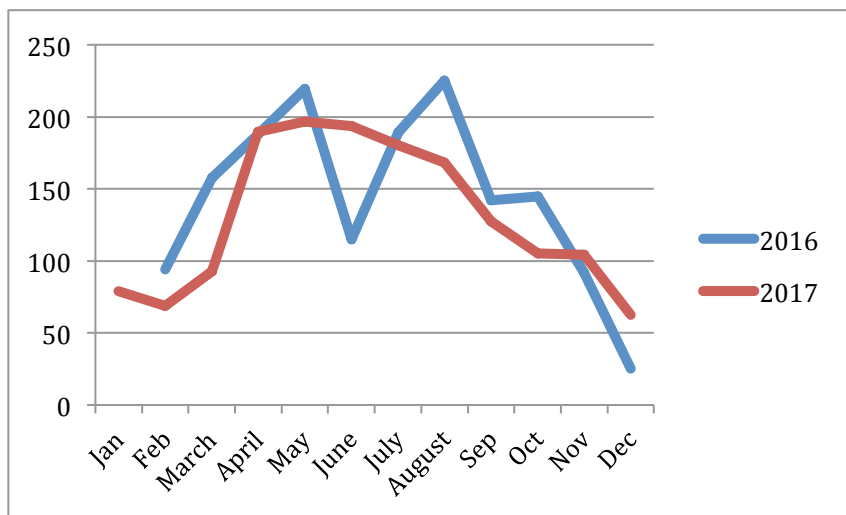


Fig 2: Irradiance for Exeter (Figures from Met Office)

Pinhoe Rd Baptist Church annual generation equaled the predicted annual generation and Glasshouse Lane Medical Centre performance was 10% higher, with the remaining sites underperforming, ranging from 2% lower for Shillingford: Barton Barn to 14% lower at Great Moor House.

Most onsite usage was similar to predicted usage figures. Glasshouse Lane Medical Centre is significantly lower than expected and Shillingford Processing Site and the Beehive is significantly higher.

Wonford Community and Learning Centre onsite usage figures are not available for this year due to an export meter fault discussed below.

Operational matters

The lower annual generation compared with predicted generation has meant we have had to adjust our cashflow downwards by £5,000 per annum. The impact of this over the remaining 20 years, if this were to continue, means the likely size of the Community Fund would be £169,000.

The irradiance has been lower in 2017 as shown in Fig 1, however the shortfall in generation has not been evenly spread over all of our sites as illustrated by the performance figures above. At the annual service checks we asked for the lower generation to be investigated. At Great Moor House, this showed the grid voltage to be lower than expected. This could lead to the inverters cutting out but no alerts had been received. The lower irradiance in 2017 was the only other reason suggested, however was the lower irradiance sufficient to explain the drop in our annual generation figures for 2017? This question has not been answered to our satisfaction yet, and will be one of the first tasks for our new O and M contractor when appointed later in June (see below).

As Great Moor House had a significantly higher shortfall in annual generation we asked SunGift to carry out further investigations. No new explanation was found. However Solar Edge has a new satellite derived performance measure soon to be available and we're inquiring if we can be signed up for this new service to see if it provides an explanation for the lower annual generation figures.

The other major difficulty has been a leak on the roof at the Technology Centre. It's been a long drawn out investigation first raised in the spring of 2017 to find out initially what was causing the leak and then to sort out liability for the leak. Reports have shown that it is likely to have been caused by the scaffolders when they took the scaffolding down as SunGift have before and after photos showing the damage on the after shots. However at the moment the scaffolder's insurers are not accepting liability. Understandably Exeter College are concerned about the length of time it is taken for any resolution and for the repairs to happen. One small piece of good news is that further damage is not being caused by the delay.

Other concerns, which have been more easily fixed have included

- Cables becoming disconnected from the total generation meter (TGM) at the Technology Centre, which meant a drop in generation was recorded. This has been corrected with no further problems and no impact on income.
- The TGM meter had been wrongly calibrated at Wonford Community and Learning Centre.
- One inverter at Exeter library had a delayed start in operating each day
- Optimisers needing to be replaced at Shillingford and Exeter Library

Our new O and M policy has been written and the O and M tender has just gone out to contractors which will provide annual service checks at all eight sites plus ongoing support with our self-monitoring, any technical issues arising and liaising with the original installers. As said above an initial brief will be to investigate the lower annual generation at some sites.

Trews Weir Hydro Project

ECOE grew out of an investigation into the possibility of hydro on the River Exe so we are excited to be developing this again, now the Environment Agency have progressed their flood defence work. In August 2017 we secured an exclusivity agreement with Exeter City Council (ECC), who own the land. We were also very fortunate to receive a donation from a benefactor to cover project developments costs up to £20,000 if no other fund raising is available. This has enabled us to undertake a feasibility assessment of community owned hydropower at Trews Weir. The technical feasibility was undertaken by local consultants Hydromatch Ltd, and the wider project managed in house by ECOE's experienced chief exec and director Hertha Taverner-Wood who has 8 years of experience as a hydro engineer. The results indicate a viable project at this location.

The shape of the current favoured project is for two Archimedes Screw turbines installed in the radial gate channel alongside the weir rated at 90 kW generation capacity (per year?), exporting electricity directly to the grid. This should be lower risk to construct than a scheme located on the weir itself.

Following the feasibility study we have:

- Submitted a pre-application to the Environment Agency to start the abstraction licensing process
- Prepared an outline business plan and submitted it to Exeter City Council (ECC)
- Communicated our plans to stakeholders (e.g. local fishers and other river users)

The next steps in the development of the project are:

- Negotiate new legal agreement with ECC and other land owners
- Continued stakeholder engagement
- Seek planning advice on the proposal
- Submit formal Environment Agency applications

In order for the project to be a financial success it relies on the Feed-in Tariff (FiT) income. For the scheme to be eligible for FiT, it will need to be pre-accredited with OFGEM prior to the end of March 2019 when the FiT scheme ends. This requires a number of statutory consents to be in place including abstraction license, planning consent and grid connection agreement. This is an achievable timescale as long as all stakeholders work together to make the project happen.

Apart from the prospect of another local community-owned renewable energy project, Trews Weir is exciting because of its location. Situated close to the Quay, it offers the potential for public engagement around and following the installation of the project. We will actively consider opportunities to maximise the social benefit of the project as the scheme moves forwards, for example creating an interpretation centre if we can raise funding and gain planning permission. At least there will be a permanent display board that communicates how the project works and feeds back information on power generated and carbon savings.



Fig 3: River Exe showing radial channel alongside Trews Weir

Healthy Homes For Wellbeing

Our new project, Healthy Homes for Wellbeing, was launched in November 2017. It provides free energy advice and free LEAP home visits for those who are eligible in Exeter, Mid Devon, East Devon, Teignbridge and Torbay. Our six Home Energy Advisers give practical energy advice and support to the vulnerable and fuel poor at drop-in energy advice clinics, events, and during LEAP home visits.

ECOE has received funding from Devon Community Foundation, Western Power Distribution and Big Energy Saving Network. The Local Energy Awareness Programme (LEAP), that funds our home visits is run by AgilityEgo. They are funded by the Warm Home Discount Scheme. Without this funding and the funded LEAP home visits we would not have been able to launch and successfully run this project.

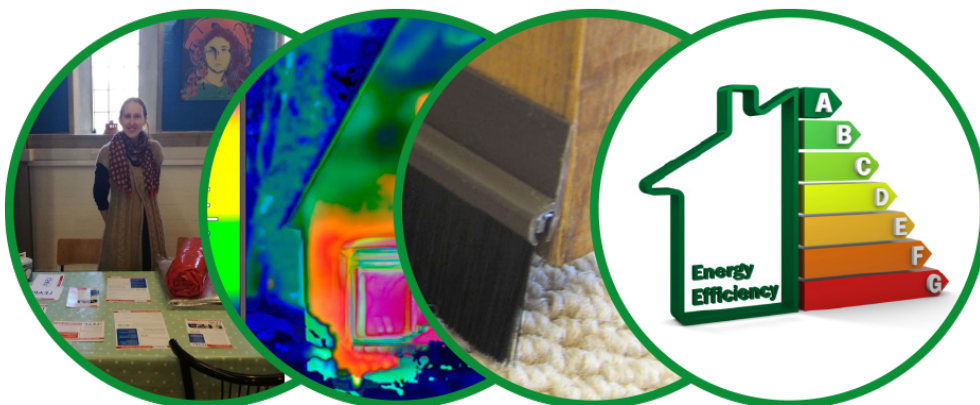


Fig 4: Clinic (Estelle) at St Sidwells, Home thermal photo, Door draught proofing & EPC scale

The free LEAP home visit provides a home energy survey and then a tailored support package covering energy saving tips, installation of free easy measures,

help with bills, switching and discounts, referring on for benefit and debt advice, grants for insulation and heating and for safety checks.

The criteria for eligibility are deliberately broad to cater for the wide range of issues that contribute to vulnerability and fuel poverty. To be eligible for home visits, only one criteria needs to be met including having a low income; receiving tax credits, housing benefits, income and disability related benefits; have a long term illness (physical or mental) or disability; recent bereavement.

An important part of the project has been developing referral pathways and we have delivered talks to Exeter City Council customer support officers, CAB staff and volunteers, community builders and connectors from the Exeter Wellbeing Project, consultants from RD and E, Housing Association officers, family support workers, Age Concern and Over 55's groups. This has had the additional beneficial outcome of making ECOE more widely known amongst these stakeholder groups.

The table below summarises the deliverables achieved since the project's launch.

	Number of	Savings £
Enquiries/One to Ones at clinics, talks etc	314	
LEAP Home visits	151	
Income Max referrals: benefit and debt advice (Interim savings calculated on average £3,000 per referral)	58	£174,000
ECO referrals (boilers and loft and wall insulation)	23	TBA
Other referrals: Fire Safety checks, health, water debt etc	20	
Warm Home Discount	8	£1,120
Switching tariff/supplier	14	£2,500
Behaviour changes/easy measures installed		£15,920
Priority Services Register sign ups	100	
Water Care Tariff forms submitted	10	TBA

Fig 5: Summary of Healthy Homes deliverables as at May 22nd 2018

ECOE Heat Project

The remaining investigations in Exwick and the scoping studies of a small heat network with either social housing or a building shared by Costcutters and Exwick

Community Centre as well as Combined Heat and Power at the Exeter Phoenix were all completed. Unfortunately neither of these possibilities could be advanced, as there was lack of organisation buy-in with the first possibility and with the Exeter Phoenix, where we did have this organisational buy-in, there wasn't financial viability. As a result the project has now been closed.

Although the feasibility project has not resulted in a heat project for ECOE, the work has substantially increased the technical knowledge of renewable heat in the organisation and we're in a better position to respond to any future opportunities.

Exeter Phoenix LED Project

We have successfully project managed a LED installation at Exeter Phoenix, which has been financed by an ECOE loan and a Carbon Trust Business Grant. The savings to The Phoenix means that the project will pay for itself in under 2 years and the annual carbon saving is predicted at 31 tonnes per year.

The Open LV Project

Some of the directors of ECOE have been working together on local supply and battery storage projects. An opportunity came up with Western Power Distribution (the local grid network operator) asking for communities to come forward with ideas for an app around data from substations, which will help towards local supply projects in the future. ECOE submitted a bid to be part of the project, which is being done in conjunction with CSE and were one of only 7 community organisations across the South West who were successful in becoming part of the project.

The Open LV project will help ECOE understand what impact generation and consumption has on substations, as well as how best to engage local residents about network data. This information could help us reduce the cost of grid connections and also open up new areas of revenue generation and project activity. As part of the OpenLV project monitoring devices will be attached to the town centre substation in Topsham. We will use this to get some 'real' substation data.

An app will be developed that utilises carbon intensity, time of use tariff and 'real' substation data so that users can see how their changes affect each of these. The app will be promoted to people living close to the substation and then we can see if any changes can be detected. The app will also be promoted to people not connected to the substation and they will see if their changes have an effect on a 'modelled' substation, in effect data from the 'real' substation.

COMMUNICATIONS (Publicity, events and community engagement)

Publicity

Media coverage and general publicity has remained much the same this year and has included published articles in The Exeter Daily, and various community websites announcing the launch of both our Community Fund and the Healthy

Homes for Wellbeing project and investigating the possibilities for a Hydro project at Trews Weir.

ECOE has had increased visibility in the local community, due mainly to our activities within the Healthy Homes for Wellbeing project. We've been able to reach out to a much wider community than which we normally reach. This has helped to strengthen our brand and reputation across the city.

Our volunteers have done a great job at keeping our social media accounts active, sharing lots of useful and interesting information and events. Our current supporters numbers are 684, Twitter followers 1468, Facebook followers have increased to 679 and LinkedIn to 145.

We are currently working on a new marketing plan that will aim to improve our general publicity and visibility as well as continue to strengthen our brand. We plan also to refresh the website to ensure our public facing image remains both interesting and up to date.

Community engagement and events

Engaging with the local community is always a priority for ECOE and our events are run for our members, stakeholders and the general public. This year has not been an exception and some of the highlights include;

'Innovation in community-led energy efficiency' and 'Energy Efficient Exeter: What role for ECOE?' Wed 1st March

A peer networking event for community energy groups to learn about innovative energy efficiency projects being carried out by community energy groups followed by an event for our members, supporters and interested local people focused on energy efficiency projects in Exeter.



Fig 6: Innovation in community-led energy efficiency event

Community Energy Fortnight 29th June to 9th July

For Community Energy Fortnight, ECOE ran a Renewable heat and heat network event about what's happening with community energy and heat and an update on the innovative far-reaching heat network plans.

Climate at the Quay, Thursday 13th July 16.00 to 20.00

ECOE were present at the Climate at the Quay event, organised by the University of Exeter's Earth System Science Group to inform about climate change, its impacts on Exeter, and responses that can be made at a local and personal level.

In 2018, we kicked off the year on the 16th January with our first Community Fund Allocation and ECOE partnered with the University of Exeter who delivered a very well attended event on 'Storing Renewable Energy In Homes and Communities: Future Opportunities and Challenges'.

GDPR

Just like every other organisation we have had to review our entire procedural structure to ensure we are GDPR compliant. Several members of the team attended training sessions, and we have carried out a full review of all the data protection issues as they apply to ECOE. As a result we have made our website more secure, have reviewed and updated all our internal policies, and have reviewed our contractors and their policies and procedures.

We are committed to keeping your data secure, and in line with the new laws we will be regularly reviewing all our procedures to maintain compliance.

MEMBERS

A survey of member's attitudes and opinions was undertaken in 2017. 101 members participated, a response rate of about 50%. Participants were an even mix of males and females, older in age, with high levels of educational attainment and with left-leaning or 'green' politics. ECOE members are highly environmental, in terms of how they see themselves and their daily practices. Members regularly use energy efficiently in their homes and avoid car transport where possible. They insulate their homes and nearly half have installed solar PV. Findings indicate that members purchased shares in ECOE for diverse reasons, notably global sustainability (e.g. climate change), local sustainability (e.g. strengthening the community) and financial return on investment. ECOE is very positively regarded by members, highly trusted and there is strong satisfaction with actions undertaken to date. Members give strong support for engagement in future local renewable energy projects. It is also clear that members wish ECOE to have impact more broadly, for example engaging in lobbying for energy policy change and sharing knowledge with other community energy groups.

There is strong support for participation in innovative energy actions such as a Home Energy Trial as well as preference for project development costs to be sourced from grant funding. There is some support for giving up part or all of interest payments to enable new project development. Members engage with ECOE chiefly using email and newsletters. Attendance at events and the AGM is relatively low, if typical of other community energy initiatives. Member engagement is constrained by time and distance to travel, and few express interest in becoming a volunteer or Director. Intentions to engage in ECOE in the future is strongly

associated with past involvement, and that some members take great pride in their involvement in the cooperative.

In conclusion, findings show that members view ECOE in a very positive light. There is strong support for the future development of new renewable energy projects, for networking with other community groups and for targeting vulnerable households to reduce fuel poverty. Given the relatively narrow profile of members in social and environmental terms, it underscores the value of ECOE's Community Fund as well as projects such as Healthy Homes for Wellbeing, to reach members of the community in Exeter that are younger, less educated and have different political views. The full report of survey findings is available on the website.

SUMMARY FINANCIAL POSITION AT 31 JANUARY 2018

The accounts for this financial year show a deficit of £3,796, taking the total accumulated deficit to £46,135. This figure takes account of the proposed 5% interest payment on members' shares and the payment to the Community Fund of £3,000 agreed at the AGM in 2017. The main reason for the deficit in the year is the underperformance of some of the solar PV installations, which in financial terms amounts to a loss of about £5,000. However, the cashflow has been positive, such that cash reserves have been building up that will enable us to repay some of the loan funding now and more in the months to come. From 2019 we expect to have sufficient cash surpluses generated from the PV installations that we will be able to start repaying some of the share capital too. As we repay more of our loan and share funding, so interest payments will reduce and the accumulated deficit will start to fall. More details about the deficit for the year, the proposed interest payments and Community Fund allocation can be found in the report on the Annual Accounts.

COMMUNITY FUND

Benefiting the wider community in Exeter is a key aim of ECOE and our Community Fund is one way we do this. It is available for local community groups to apply for funding for projects that help to save energy and/or help to alleviate fuel poverty. We were excited to open the Community Fund this year for the first time. At the 2017 AGM, members agreed to make £3000 of the profit from our Solar PV 1 and 2 projects available to the Community Fund. Along with donations of their own interest from members, the total fund available was £4200.

The allocation event took place on January 16th 2018. Following presentations from each of the applicants, Wonford Community and Learning Centre received £996 for a new display that will provide information about their ECOE community-owned solar installation. Pinhoe Road Baptist Church received £1275 for replacement LED lighting in one of their large meeting rooms. Music in Devon received £2000 for a solar sound system. All three applicants will keep us informed of their progress. The presentations from the allocation event are available on the website. We intend to

repeat the process in 2018 and the amount to be made available from this year's surplus profit will be discussed as an agenda item at the AGM.



Fig 7: LED lights installed at Pinhoe Road Baptist Church

GOVERNMENT POLICY UPDATE

Yet another year of mainly consultations and little policy. The Clean Growth Strategy unveiled last year aims to put the UK on course to meeting its target to cut emissions by at least 80% of 1990 levels by 2050. Bursting with more than 50 pledges to help boost renewable power production and increase energy efficiency, even the independent Committee on Climate Change was impressed but many are concerned by the lack of detailed actions involved as part of this strategy.

The new Energy and Clean Growth Minister, Claire Perry has engaged with community groups and seems to be supportive. The minister is considering onshore wind in parts of Scotland and Wales but her statement that “no onshore wind should ever be imposed on a community” would suggest it will be kept to the remotest areas of the country. Future subsidies for offshore and PV could be unlikely as well under this government as they believe we're close to subsidy free generation.

UPDATE SINCE 1ST FEB 2018

Since the start of our new financial year, work has been continuing to develop all of the projects described above.

In addition we have investigated making a Rural Community Energy funding application for the out of Exeter solar sites alongside a small hydro possibility in East Devon. We have been helping Wonford Community and Learning Centre investigate the possibilities for a LED project at the centre.

ECOE attended the Devon Community Energy Spring Gathering at Dartington Hall again this year. The formation of a Devon Community Energy Network has been developing over the last 18 months and we are taking an active part.

We have also been liaising with Art and Energy, a new exciting innovative start-up organisation who have received funding from Velocities. Their vision is to transform the look of solar panel energy generation through art in order to brighten up our communities, celebrate our diverse culture and inspire others to consider renewable energy. We are investigating a potential partnership between Art and Energy and ECOE to create a solar art installation in Exeter.

FUTURE STRATEGY

Following discussions at the directors Strategy day in April, we realised that resources are finite and our aspirations have perhaps exceeded our resources in recent years. In part related to this, Gill Wyatt has held the two roles of Chair and CEO. We've always known this is an interim measure and after the AGM in June, Gill will step down as Chair and it will be held on an annual rotation basis with Patrick Devine-Wright as Chair for the first year. Gill will continue in the position of CEO. In addition, for the coming year the directors have decided to focus primarily on Trews Weir, Healthy Homes, the Open LV project and a potential partnering with Art and Energy unless there is significant additional funding and/or additional resources.



Fig 8: Trews Weir on the River Exe