SOLAR PV Guidance

DIOCESE OF TRURO
DISCOVERING GOD'S KINGDOM
GROWING THE CHURCH

Introduction
The Diocese of Truro is committed to the Shrinking the Footprint targets for the Church, and PV panels are part of the means to achieve these targets. However they are not appropriate for every church. All churches may make a contribution to the targets by considering total energy use and how this might be reduced, by for example the use of more efficient heating systems, or using a fabric door curtain to reduce drafts.

There are many things to consider as you explore whether solar PV panels would be appropriate for your church. This booklet sets out the DAC criteria and other factors you need to consider when thinking of PV panels for your church roof. Solar panels that are used to heat water are covered by the same DAC criteria.

What Are Photovoltaic Solar Panels?
Solar electricity systems capture the sun's energy using PV cells. The cells convert the sunlight into electricity, which can be used to run appliances, lighting and electric heating systems. PV cells don't need direct sunlight to work - you can still generate some electricity on a cloudy day – but they are most efficient when installed on south facing roofs. The energy generated can be used as it is being generated (e.g. in the day), exported to the National Grid or be stored for later use using batteries where there is no grid or for island systems.

What are the Feed-In-Tarriffs?
The Feed-In Tariffs (also known as FITs) are part of a government scheme that pays people for creating their own "green electricity". The tariffs have been introduced by the Department of Energy and Climate Change (DECC) to help increase the level of renewable energy in the UK towards our legally binding target of 15% of total energy from renewables by 2020 (up from under 2% in 2009).

The FITs have two tarriff components:

_ **Generation tariff** – a set rate paid by the energy supplier for each unit (or kWh) of electricity generated. This rate will change each year for new entrants to the scheme, but once signed up the same tariff will be received for 25 years.
_ **Export tariff** - a further 3.1p/kWh or more is paid by the energy supplier for each unit exported back to the electricity grid (e.g. when it isn't used on site).

Both the Generation tariff and the Export tariff are index linked, which means that the rate increases by inflation each year.

The FITs, therefore, potentially give churches three financial benefits:
_ A payment for all the electricity produced, even if used on site by the church;
_ additional payments for the electricity exported to the national grid;
_ and a reduction on the church's electricity bill, from using the electricity produced and used on site.

In general most installations on churches will be less than 4kw because these have a shorter payback period from the higher rate of FIT on retrofit installations of this size. Retrofit simply means the system was installed after the building has been constructed. The current rate of FITs can be found at www.decc.gov.uk.

IMPORTANT NOTE

The most important advice at the outset is that any installation of renewable technologies must be an outcome of a comprehensive project to reduce the carbon footprint of the whole church, rather than just
as a tariff-generator. Installation plans must include significant regard for the architectural integrity and historical significance of the church.

Eleven steps for PV installations

1. **Be encouraged -** Caring for the environment is a crucial part of the mission of the church. Christians have a unique role to play in environmental issues, which in turn provide opportunities to model, in practical ways, the love of God.

2. **Carry out an environmental assessment and energy audit –** using the parish church and associated buildings audit material available from the Diocesan Social Responsibility Officer. Complete the National Energy Audit of the Church of England, which is a simple walk through assessment of changes churches can make to reduce their carbon footprint. Think about changing to a green energy supplier such as Good Energy.

3. **Check the DAC guidelines -** PV panels can be visually intrusive and may damage building fabric so will not be advisable on every church building. Read through the guidelines from the Diocesan Advisory Committee (DAC), and ensure you will be able to comply with the criteria given.

4. **Follow the example of others –** There are case studies available on the Shrinking the Footprint website from other churches that have installed PV.

5. **Community involvement -** Winning the hearts and minds of your Community and stirring enthusiasm will help make your project run more smoothly and increase your funding opportunities. Meet and talk to as many people as you can – the local school, community groups (such as parents and toddlers), local environmental groups, the Parish Council, your PCC, your whole congregation. Help others see that becoming more 'green' is possible, desirable and relevant to the life and mission of your church.

6. **Feasibility study -** Get some quotes from installers and speak to the DAC Secretary and Diocesan Environmental Advisor who has looked at the practicalities of funding PV projects for schools and churches.

7. **Put together a proposal -** If the PCC is happy with the feasibility study findings then set up a group to prepare a proposal. This will be useful for obtaining funding and for the Faculty. Involve your Church Architect, the treasurer and the DAC. Look carefully at the DAC criteria for PV installations. Remember that you are more likely to be successful in gaining funding if you can show that there is communitywide involvement in your project.

8. **Work with English Heritage, SPAB and Cornwall Council -** If your building is listed then you will need to work alongside Historic England (English Heritage) and SPAB (Society for the Protection of Ancient Buildings).This will involve a number of visits to

prove that the panels do not harm the building and are not visible. A Faculty from the DAC will probably take about 4-6 months to achieve. Planning permission is given by Cornwall Council and your Church Architect should be able to help with this. A planning screening opinion letter should be sought and submitted with the application for a faculty.

9. **Work with your electricity supplier -** You will need to register your church as an electricity generator. You do this by speaking to the energy company that supplies your church with electricity. The supplier will provide you with a Feed-In-Tariff application form. To register your church will need its own postcode (not shared with any other building) – therefore you may need to generate a new postcode. You can assess whether you will be eligible as a generator at this point, but it will not be confirmed by OFGEM until you have had the panels installed. Ensure you use an Microgeneration Certification Scheme (MCS) accredited manufacturer and installer of panels and systems. If you do not you will not qualify for FIT. Further information about MCS can be found at www.decc.gov.uk

10. **Installation -** Having received your Faculty, approvals and planning permission, gained your funding and become confident you are eligible for receipt of Feed-In-Tariffs, you are in a position to install your PV panels.

11. **Celebrate -** Throw a party, thank the community for their help, tell your local media, hold a special service of thanksgiving with some guests.

Funding

The more than 30 Churches that have successfully installed solar PV panels have so far managed to access grants and raise the remaining funds locally. Financially you will be better off funding the installation yourself, as you will then be able to keep the FIT payments. However, there are other ways to fund an installation, you may consider using an ethical co-operative that matches investors with 'green' projects, splitting the profits of the FITs between the investors and yourself. Some banks may lend you the money. Alternatively there are companies offering schemes that will install solar panels on your roof in exchange for the FITs. There are several grant organisations which could help you with a significant proportion of your funding. Start exploring funding options at the same time as starting the process of gaining a Faculty.

-**Grants** –Community Energy Plus is a good source of information on grants and funding (see links)

-Local fundraising – Many people are happy to contribute to projects of this nature, especially if it has a strong community link. They will also like the fact that the project will provide a long-term income for the church through the FITs.

-**Cooperative or community funded options** – It would also be possible for a group of people to fund the installation under a community share issue, or similar funding mechanisms, in return for the FIT payments. An example of such a scheme would be *The Solar Co-op* (www.thesolar.coop).

-**Investor funded options** – there are a number of schemes, sometimes referred to as 'rent your roof' schemes, that will pay the costs of installing PV panels in return for the FIT payments and export benefit. The owner of the building will usually in return benefit from the electricity generated by the panels (but note you would need to be using the building in the daytime to benefit from this electricity and listed buildings are not eligible

for many of these schemes). See the Diocese of Truro 'Church Solar PV scheme' document for further information. Shrinking the Footprint have produced a list of useful questions to ask when considering such schemes.

Installers and professionals
The Diocese of Truro recommends parishes consult the DECC website (see links) to find Cornwall based installers. Community Energy Plus is also a good source of information about local installers.

LINKS
Church building resources:
-**Truro DAC –** http://www.trurodiocese.org.uk/diocesan-information/looking-after-your-church.php
-**Shrinking the Footprint website:** www.shrinkingthefootprint.org/best_practice.php?CC
-**Church Care website:** www.churchcare.co.uk
-**Eco-Congregation website:** www.ecocongregation.org
-English Heritage: http://www.english-heritage.org.uk/professional/advice/advice-by-topic/places-of-worship/climate_change_pow/

Feed-In-Tariff resources:
-**Energy Saving Trust:** www.energysavingtrust.org.uk/Generate-your-own-energy/Sell-yourown-energy/Feed-in-Tariff-scheme
-**Department for Energy & Climate Change:**
www.decc.gov.uk/en/content/cms/what_we_do/uk_supply/energy_mix/renewable/feedin_tariff/feedin_tariff.aspx

Installers and professionals:
- **Micro generation certification –installers search**
www.microgenerationcertification.org/mcs-consumer/installer-search.php

Funding and Grant sources:
-Landfill Communities Fund www.entrust.org.uk
- Community Energy Plus www.cep.org.uk

Church House contacts:
01872 274351

Sue Thorold – DAC Secretary
James Hetherington – Environmental Advisor
Andrew Yates – Social Responsibility Officer

Other sources of help

Extra advice and help to prevent your church from having to re-invent the wheel can be sought from the Anglican Methodist Environment Group (AMEG) or from your local Deanery Environment Champion. They may well be able to put you in touch with another church who has experience of installing PV panels. Main contact for AMEG is the Social Responsibility Officer – Andrew Yates.

THANKS

With thanks to Matt Freer and the Diocese of Oxford for the kind use of some text and material from their publication 'Your Church and Solar PV'.