Obtaining a Power Supply Upgrade Quote

Summary: To have enough electricity supply to power a new decarbonised heating solution within a church or a church hall, the capacity of the existing supply may need to be upgraded. This guide helps you complete the online form to obtain a quote for this from your District Network Operator (not your electricity supplier).

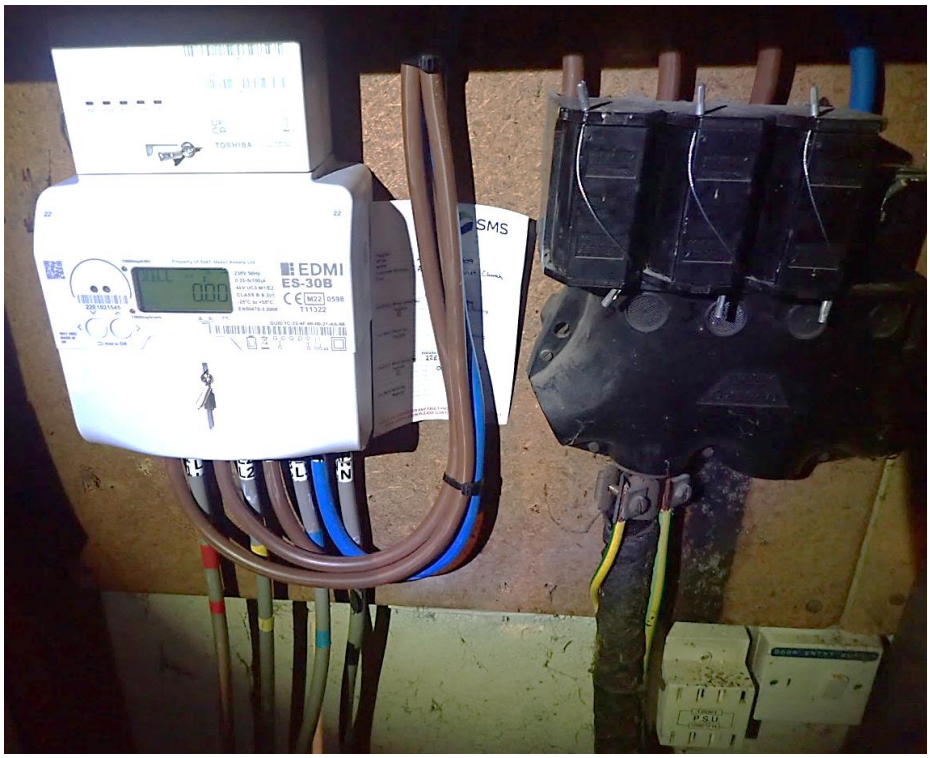
When you may need an upgrade

A church's electricity supply is either on a 'single phase' or a 'three phase'. Single phase is lower and has a maximum supply rate of 100 amps (100A). This means it has 23 kilovolt-amps (kVA) of capacity and can support around 21kilowatts (kW) of electrical load. In the context of a small church building, around 4kW should be allowed for, to provide power for lighting and small appliances, so this would leave around 17kW for heating needs. To put this in context, this could heat 30 to 40 under pew heaters, normally enough for around 50 people.

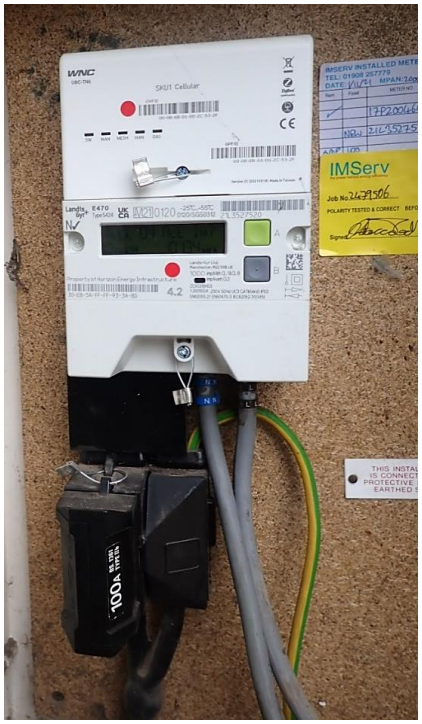
A three phase 100A supply has 69kVA of capacity (around 62kW of electrical load) and therefore has much more capacity for heating. This is generally sufficient for most churches and can power heat pumps as well as direct electric heating. On rare occasions, even greater capacity (three phase with a 200A supply) could be needed. For example, a medium-size church, relying on high intensity, overhead, infrared heaters that have a high electrical demand.

Your existing supply type

Determining the current supply capacity can be done by looking at the incoming supply fuses which will be next to the main meter for the building.



Three Phase Supply – note the three black fuse blocks and 4 wires (three (brown) live wires and one (blue) neutral wire running to the meter – colours will vary).



Single Phase Supply – note only one black fuse block and two wires (one live and one neutral) running into the meter.

It is possible for there to be a three phase supply with three black fuse blocks (generally known as cut out fuses) but only one live wire running into the meter. In this case, with checks that the supply cable has three live wires running into the fuse block, the supply can be increased simply by arranging for a new three phase meter to be installed. This can be arranged through your current electricity supplier.

Some older supplies can have 60A or 80A fuses rather than 100A fuses. Sometimes these can simply be replaced for an increased fuse. This must be done by the District Network Operator (DNO) and is arranged by requesting an increase in supply as noted below.

How to request an upgrade quote

Any increase in capacity will have to be carried out by the District Network Operator (DNO) in your area. This is different from your electricity supplier, which charges you for your usage. You can check which DNO supplies your site by entering the church postcode at Who's my electricity network operator? from the Energy Networks Association (ENA).

Details of how to apply for a capacity increase are detailed below for each of the three DNOs covering the Diocese of Oxford's area. The forms are filled in for the most common situation, which is upgrading a single phase supply to a three phase 100A supply. If a church needs more power than this, professional advice will be required.

The examples have assumed no heat pump and no solar PV panels. If you are considering these options, ticking 'yes' here leads to more questions, which can only be answered with a PV design or heat pump specification. For those with solar PV or heat pump projects, EMA and G99 forms can be completed later if needed.

Applications are free and result in receiving a quote for the works. Request a “fixed/full quote”, as “budget quotes” are rough estimates and can vary considerably when fixed. The application process can take up to 17 weeks. Quotes will expire in time (SSE quotes last 90 days) but can be used to guide fundraising, then be refreshed when needed.

In the application form, if you can’t find your church address via the postcode, it may not be listed on Royal Mail’s Postcode Finder. If the vicarage is nearby you may be able to use that instead, or you can ask Royal Mail to update your address.

If you need a grid reference the Grid Reference Finder website is useful. Give the grid reference for the church, even if you use a vicarage postcode.

Estimated price brackets

Power upgrades can range from £300 to £30,000 hence the value of obtaining a quote early on to guide your project and fundraising planning.

What permissions are currently needed under the faculty jurisdiction rules?

Diocesan permission will be required for upgrading your supply. Please consult the Diocese’s Church Buildings Team (ChurchBuildings@oxford.anglican.org) once you have your quote details, as the proposed works differ from case to case and will impact the type of permission required. Often, it makes sense to include the works to upgrade the supply with the works to install the new heating system it is intended to power, in one faculty application.

Contact details of the Diocese of Oxford Environment Team for further support and information

environment@oxford.anglican.org

Church House Oxford, Langford Locks, Kidlington, Oxfordshire, OX5 1GF

Scottish and Southern Electricity Networks (SSEN)

Apply for a quotation for an increase in capacity by using the 'Increase in Demand Load' form online at https://ssen.custhelp.com/app/answers/answer_view/a_id/1000375/CONN/increase-in-demand-load

Guidance on how to complete the form is below…

1A Application Details

Complete your contact details

1B Are you applying on behalf of your organisation? "Yes"

Please provide name of the organisation … "[*Church name*]"

Please provide address of organisation *<search using postcode> (If the church is not listed under the postcode search you can use a nearby rectory/vicarage address or ask for it to be added by Royal Mail.)*

2 Finding your site

Use postcode OR one of the search functions to find your site, and draw around the site boundary etc. *(Faculty Online shows the boundary.)*

3. Basic Information

Would you like a Budget Estimate, Feasibility Study or Formal Quotation?

Select "Formal Quote"

(As noted above budget estimates can vary considerably so a formal quotation is advised from the outset.)

Please tell us what type of connection you require

Select "Demand"

Please choose customer type from dropdown

Select "Commercial"

(Churches will be classed as a commercial supply because they are not domestic.)

Please tell us the type of works that you project requires

Select "Increase in Load under 69kVA"

Name of your project

Are you installing an EV Charger Answer "No"

Are you installing a heat pump Answer "No"

Are you The Landowner / The Tenant / The Occupier/ An IDNO / None / Unknown

Select "Landowner"

Have you appointed a connecting customer (the person or company who will ultimately use the connection) Yes/No Select "No" (*The church is the connecting customer*)

Description of the works:

"To increase the supply capacity from a 100A single phase to a 100A three phase connection to provide sufficient capacity to install direct electric heating into the building which is a listed church." *(Edit to suit your circumstances.)*

Is the connection Single, Split or Three Phase? Answer "Single Phase"

Please provide electrical meter serial number Answer "xxxxxx"

Is any Generation being installed? Answer "No" *(we are assuming no solar PV in this example)*

4A. Property Details

Property Type =	"Other"
No of Properties =	"1"
Re/Add Load per Property =	"46" *(this makes the total of existing plus additional load = the maximum of 69 which is a three phase 100A supply)*
Existing Capacity =	"23" *(from existing single phase supply)*
Phase of Connection Required	"Three Phase"
No. of Bedrooms per Property =	"0"
Heating Method =	"Electric"
Tick if Abnormal Loads =	<Leave unticked>

4B. Additional Details

If Other, please enter a description: "Church"

If you are installing electric heating please provide following details:

Direct acting heater	Number = xx *(estimate the number of heaters you will be installing)* Rating in kW of heating appliances = *(divide 46 by the number of heaters and insert a rounded down figure).*
Electric Boiler	Leave blank
Storage Heaters	Leave blank
Wet Storage System	Leave blank

Is the working being done in connection with the construction of new building? "No"

Is the work outside the scope of VAT? "Yes"

5. Key Contact Roles for your Request

Proposed payer and Main contact — Put applicant for both (or could add church Treasurer for payer)

('Commercial Contact' is the person or company appointed by the Connecting Customer to manage the job on their behalf. 'Payer' is the person or company appointed by the 'Connecting Customer' to manage the finances on the job.)

6. Address details

You may need to put the vicarage/rectory address if church not listed and can explain in the location description box. You can put the correct grid reference for the church though (see Grid Reference Finder).

On the next page of address listings you can skip on without selecting if the church is not shown.

National Grid (used to be called Western Power Distribution)

An application for a new three phase connection can be made online at https://connections.nationalgrid.co.uk/small-connections/

Guidance on how to complete the form is below…

Connection Requirements

Page 1	Select "An increased load (including fuse upgrade)"
Page 2	Select "Connection Offer" Then select "All connection works" Use the drop down to select "Commercial properties" Enter "One" for the number of connections Enter "No" for the requirement of a temporary connection
Page 3	For Maximum power capacity enter 69kVA Choose suitable date
Page 4	Leave Motor and Welder blank Enter 'No' for EV and Heat Pumps
Page 5	Enter 'No' for onsite generation (solar PV)
Page 6	Ignore this page and press 'Next'
Page 7	Enter 'No'
Page 8	Upload boundary plan – available from Faculty Online
Page 9	Additional information – Enter "Note that the existing supply comes on an overhead route from a pole at the edge of the churchyard on which there appears to be a three phase connection. Due to the presence of multiple human burials and other archaeology within the churchyard, a new overhead supply, following the same route as the existing supply and using the same entry location into the church, is requested." *(Edit to suit your circumstances.)*
Page 10	Complete your contact details

UK Power Networks (UKPN)

An application for a new three phase connection can be made online at www.ukpowernetworks.co.uk/i-already-have-electricity-domestic/upgrade-under-70kva-application-start

Guidance on how to complete the form is below…

Enter Postcode

Check the box 'I need more power'

Check the box 'Upgrade my supply to three phase'

Check the box 'Up to 100A (up to 69kVA)'

Check the Box 'One'

Click 'Continue'

Click 'Book you site visit'

(UKPN usefully offer site visits early in the process, this is well worth doing as it saves a lot of discussions later.)

Are you applying on behalf of a company? – Check the 'yes' box

Fill out the church's address details in the 'Where do you need the work done' section

Fill out your contact details in 'Your contact details' section

Postal address – click 'yes'

What are you planning to do? "To increase the supply capacity from a 100A single phase to a 100A three phase connection to provide sufficient capacity to install direct electric heating into the building which is a listed church." *(Edit to suit your circumstances.)*

Click Submit