HOW TO REDUCE YOUR ENERGY CONSUMPTION

MAKE YOUR CLUB MORE ENVIRONMENTALLY SUSTAINABLE AND REDUCE YOUR OPERATING COSTS

Please think carefully before printing this guide – can you read it on a device and save paper?

ECB

Improving energy efficiency and reducing energy consumption will help to reduce the environmental impact of cricket and reduce operating costs for clubs

Reducing energy costs will help to keep the cost of participation down at a time when people may face difficult choices about how they spend their money

The ECB recognises that Climate Change impacts on all our lives, the game we love and the places it is played.

We all have a role to play in reducing the impacts of climate change and as a game we will need adapt, so the ECB is working hard to develop a game-wide Sustainability Strategy that will help drive change for good in cricket in England and Wales.

Part of that strategy will be to support the game to reduce energy consumption. This will have the double-win of reducing greenhouse gas emissions but also reducing energy costs for clubs.

The current energy crisis means that clubs are likely to be paying more for electricity, gas and heating oil than ever before.

We are bringing forward this guide now so that clubs can take steps to reduce their energy consumption, cut their emissions and cut their bills.

If you are ECB-affiliated and manage your facility you could be eligible for funding support from the ECB County Grants Fund under the 'Tackling Climate Change' them.

To find out more about the ECB County Grants Fund, eligibility and how to apply visit: www.ecb.co.uk/be-involved/club-support/club-funding/county-grant-fund

ABOUT THIS GUIDE

This guide is designed to help clubs minimise their energy consumption, reducing greenhouse gas emissions that are harmful to the environment and helping to reduce cost at a time when energy prices are very high.

There is advice on:

- Making sure you are on the best energy deal for your club
- Making sure you are operating in the most energy efficient way
- Low-cost quick win investments to reduce consumption.
- Investing in larger scale projects to drive down consumption, emissions and costs.

The ECB is passionate about making cricket more sustainable and this guide includes information on the ECB County Grants Fund which could be available to your club for investment in sustainable, energy saving projects.

Energy efficiency is about dealing with the big wins first and then looking for every saving possible

This guide sets out a range of actions you can take as a club to reduce your energy consumption, cost and carbon footprint.

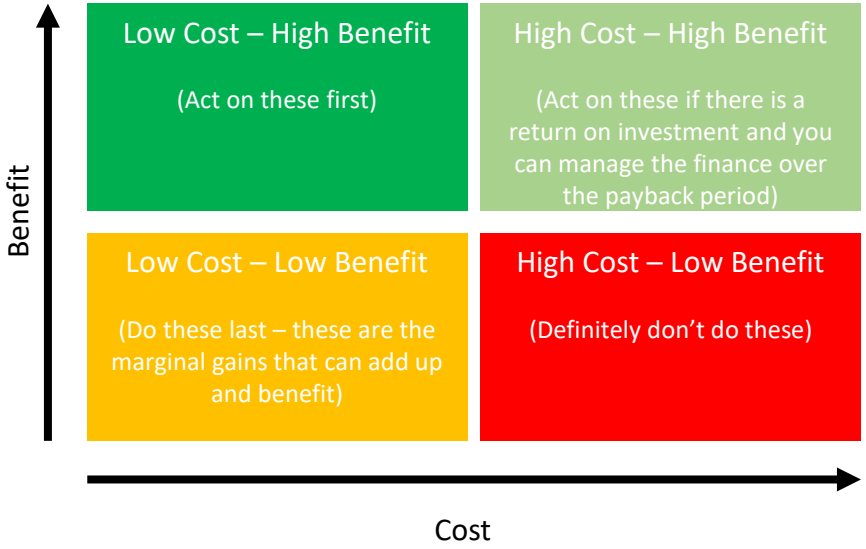
It is really important to do this in the right order – for example there is no point in investing in a heat pump until you have a well insulated building.

First of all you need to minimise wasted energy – that will involve a combination of energy efficient behaviours, controlling how energy is used and preventing waste (mainly by heat escaping from your building).

Once you have an energy efficient building, being operated in an energy efficient way, you will then be able to achieve all the benefits of new technology such as solar panels and heat pumps.

For each action, this guide considers impact (how much it will save), cost and how long it will take to recover that cost (payback period)

SUSTAINABILITY FUNDING



This guide will take you through a range of projects.

The aim is to reduce consumption before considering replacing one energy supply with another one (whether on grounds of lower cost or lower carbon footprint).

It starts with projects identified as 'Low Cost – High Benefit'. These are the quick wins.

It also includes 'High(er) cost – High Benefit' projects that require more investment but can make significant reductions in consumption or cost.

The guide also identifies when projects might fall into the 'High Cost – Low Benefit' category that we want to avoid.

The ECB County Grants Fund has been designed to support a number of themes, but every affiliated club with an asset to manage is eligible for every project outlined in the guide via the "Tackling Climate Change" theme.

Grants of up to £10,000 and Interest Free Loans of up to £50,000 are available to support your club to reduce your energy use, and subsequently your operating cost and carbon footprint.

More details are available here: https://www.ecb.co.uk/be-involved/club-support/club-funding/county-grant-fund

If you are interested in applying for funding – speak to your County Cricket Board for more information.

GETTY IMAGES

GETTING THE BEST ENERGY DEAL

MAKE SURE YOU ARE GETTING THE BEST ENERGY DEAL

1 KNOW YOUR CONTRACT

- Who is your supplier?
- What is your contract period?
- Is your contract fixed price or variable?
- Has your fixed price ended and now you are on an expensive standard tariff?
- What are the exit terms?

2 KNOW YOUR ENERGY COSTS

- How much did you spend last year
- What is your unit price for each kilo-watt hour of electricity and gas you use?
- What is your standing charge (pence per day)?
- When does, or when did your latest energy deal run out?

3 KNOW YOUR CONSUMPTION

- How many kWh of electricity and gas do you use?
- When during the day do you use your electricity?
- When during the year do you use your electricity?

4 GET THE RIGHT RENEWAL DEAL

- Shop around and compare deals
- Always check to see if dual-fuel deals are cheaper if you have electric and gas from the same supplier – its not always the case, using two different suppliers may be cheaper.
- You could use a price comparison website or a broker
- Make sure you are familiar and comfortable with all the key terms of the contract (e.g. the length, termination clauses etc.)
- Negotiate on the phone (if you don't ask, you don't get!)
- Be aware of high standing chargers for low unit rates – this may not work out cheapest!
- Always calculate the deal over the full year using your consumption data
- Using paperless billing and direct debit payment can help to reduce prices.

5 USE A RENEWABLE ENERGY SUPPLY

- Look for suppliers that offer electricity supply from renewable supplies such as offshore windfarms or large scale solar.
- These can often be found at no additional cost.
- This will help reduce your carbon footprint.

6 READ YOUR METER

- Read your meter frequently
- Always submit actual meter readings to your supplier before any price increase
- Get a smart meter fitted (usually at zero or low cost for clubs) and make sure everyone can see the live usage data!

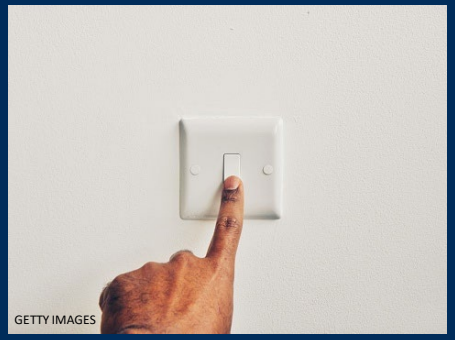

GETTY IMAGES

LOW COST, HIGH BENEFIT PROJECTS

MAKE SURE YOU DO THESE FIRST

DEVELOP ENERGY EFFICIENT BEHAVIOUR

Make sure you do this first – it can reduce consumption by up to 18% and most of it costs nothing to do!



WHAT DO WE DO?

Create an Energy Saving Plan, communicate it and get 'buy-in' from members and visitors.
Turn out the light when leaving a room and especially at end of the day
Open/close windows in hot/cold weather
Pull curtains and blinds to keep heat in during winter and to keep heat out on hot days during the summer.
Turn down the thermostat from 20°C to 19 °C
Delay start of 'heating season' from October to November
Don't leave TVs an other appliances on or on standby
Unplug devices when they are charged
Ask players and match officials to take shorter showers
Use energy and water efficient 'Eco' settings on appliances.

Impact — **High**

Depends on how much of this you are already doing already.

Cost — **Very Low**

Most of this is free but can take time to develop and change behaviour.

Payback Period — **Very Short**

Start saving straight away.

WHAT DO WE NEED TO CONSIDER?

These are all things that are zero or very low cost but they do require changes in behaviour for a large range of people, some of which are members, others are visitors.
The benefits depend on the size of your building and how it is used. The more room for improvement and the more often a building is used – the greater the benefit.
Think about how to create buy-in - emphasise the double benefit of helping the club and the environment.
People will need reminding and nudging towards good behaviour but be creative - don't just throw a notice or sign at every light switch!

NEXT STEPS

Walk through your building and look at opportunities for improvement. Discuss these within the club and see what is adoptable.
Build your energy saving plan.
Get commitment from leadership.
Communicate your plan, explain why you are doing this (it helps keep the club operational and it benefits the environment).

INSTALL ENERGY SAVING DEVICES & CONTROLS

If people are not improving their energy saving behaviour then this can help but behaviour change strategies are cheaper


GETTY IMAGES

WHAT DO WE DO?

Fit LED Lightbulbs
Fit Passive Infrared (PIR) sensors to control room lights in rooms that are not used continuously and where it is safe to do so.
Fit self-closing taps to basins and showers to reduce hot water usage by up to 50%.
Fit modern shower heads to reduce heated water flow rate.
Locate thermostat controls away from public areas.
In new buildings, consider fitting simple building management systems that allow you to control light, heating, air conditioning from a central location.
Fit timers to lighting and heating – but make sure that there is suitable lighting of access during hours of darkness.

Impact **Potentially High**
Depends on how much of this you are already doing already.

Cost **<£5000**
Costs will depend on how many controls are fitted and size of building.

Payback Period **Potentially short**
Usually less than 5 years but longer where behaviour is better already.

WHAT DO WE NEED TO CONSIDER?

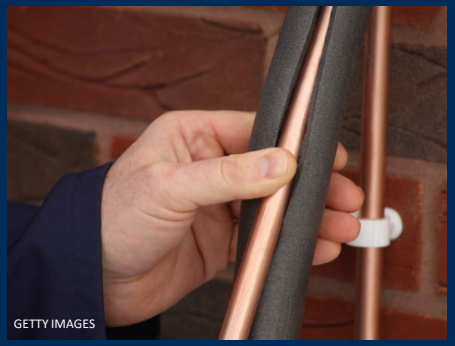
This approach has lower impact and longer payback periods but the impact will depend on how effective behaviour change is. This method forces better behaviour and could be the only way to achieve the savings identified in the section on improving behaviour if these cannot be achieved by persuasion alone.
PIR lighting control is ideal for rooms where people are coming and going, they are less suitable for environments where people are sat still for long periods (the lights will go off whilst they are still in the room). Think where people will be entering and exiting rooms.
Fitting self closing taps can reduce water consumption by 50% - this saves water and energy in heating water and pumping heated water.

NEXT STEPS

Try behaviour change before resorting to these methods (it costs less).
Walk through your building and look at opportunities for improving controls.
If you are going to fit energy saving controls make sure you get at least three quotes from electricians/plumbers to compare prices.
Invite electricians and plumbers to survey and price the work – don't let them price without seeing the site.

INSULATE YOUR HOT WATER SYSTEM AND FIX LEAKS

Insulating your hot water tank and pipes, and fixing dripping taps can save 17-18% of your energy costs and help to save water too.



WHAT DO WE DO?

Fit an insulating jacket to your hot water tank (and renew this in line with the manufacturer's instructions – they can reduce effectiveness over time).

Fit insultation to your pipework to reduce heat loss from pipes before the water gets to the tap or shower.

Fix leaks in your hot water system otherwise you are literally pouring money down the drain by heating water that then leaks and is never used.

Impact **High**

Most of the impact comes from insulating uninsulated water tanks.

Cost **<£250**

Low – hot water tank jackets are around £50 and pipe insulation can be DIY

Payback Period **<5 years**

Will depend on how insulated your tank is already.

WHAT DO WE NEED TO CONSIDER?

A tank jacket can reduce energy consumption by 17% in an uninsulated tank (modern tanks usually come with internal insulation). Jackets costs less than £50 and can be DIY fitted.

Lagging pipes reduce heat losses – especially in unheated spaces. It also reduces the risk of pipes freezing and bursting. Note that it does not provide full frost protection – you will need to supply some heat to pipes in unheated areas during winter. It might be cheaper to heat the pipe with a specialist heating cable fitted to the pipe than to heat the whole space just to prevent pipes freezing – speak to your plumber for advice.

NEXT STEPS

Find out whether your tank is self-insulating. If it is not size up your tank – get a jacket and fit it. If it is, consider fitting a jacket anyway – it is low cost and it will help. Speak to your plumber for advice on insulating pipes and frost protection.

INSULATE YOUR LOFT OR ROOF SPACE

Adding 270 mm of insulation to an uninsulated loft can cut energy bills by nearly a third!

WHAT DO WE DO?

Loft insulation is a low cost action you can take to reduce heat loss and your energy bill if your loft space is accessible, safe to access and suitably ventilated to prevent damp.

Even if your loft space is insulated – check the insulation depth and if necessary, add more.

Impact **High**

Highest impact in uninsulated lofts.
Marginal gains still to be had by adding more.

Cost **£500**

Costs will depend on roof area and whether DIY or contractor.

Payback Period **<5 years**

Will depend on how insulated your loft is already and costs.

WHAT DO WE NEED TO CONSIDER?

Adding 270 mm of insulation to an uninsulated loft can reduce energy bills by 32%. Increasing from 120 mm to 270 mm thickness will still save 2%.
Insulation does not necessarily need to be on the floor of the loft, you can also insulate the underside of the roof but this requires more expertise and specialist products.

Make sure access to your loft space is safe – be careful not to fall through the ceiling or from height. Asbestos can be a risk in roof spaces in older buildings. If you are unsure get a contractor in to do the work safely.

Be aware that if your loft space is not well ventilated, insulating can cause problems with damp – monitor your loft space carefully and if necessary speak to a roofing company about installing more ventilation.

NEXT STEPS

See https://energysavingtrust.org.uk/advice/roof-and-loft-insulation/ for more information on insulating your loft.
Plan your project – including a health and safety risk assessment for carrying out the work in the loft.

ECB funding is available to support projects of this type where there is a demonstrable benefit – speak to your County Cricket Board.

DRAUGHT PROOFING

Draught-proofing is one of the cheapest and most effective ways to save energy – and money – in any type of building.

WHAT DO WE DO?

Seal around the edges of windows and doors to remove draughts.
Fit escutcheons (covers) to key holes and fit brushes or flaps to letter boxes.
Seal around external doors and windows.
Seal unused chimneys (seek professional advice when doing this)
Seal cracks in floors and skirting boards
Seal under doors between heated and unheated areas.
Check for seals around pipework and cabling coming into the building
Seal any cracks in the building fabric (once you have investigated the cause with an expert)

Impact **Medium-High**

Depends on how draughty the building is.

Cost **~£500**

Depends on how draughty the building is. Costs for contractors more than DIY.

Payback Period **<5 years**

Depends on draughtiness and complexity of works.

WHAT DO WE NEED TO CONSIDER?

Air needs to flow in and out of your building so that it remains fresh, dry and healthy. You should only seal unintended draughts. Do not seal intentional ventilation such as extractor fans in high moisture environments (showers, changing rooms, kitchens), underfloor grills or air bricks, wall vents or trickle vents above windows.

Be very careful to maintain ventilation where there are open fires or in high moisture environments.

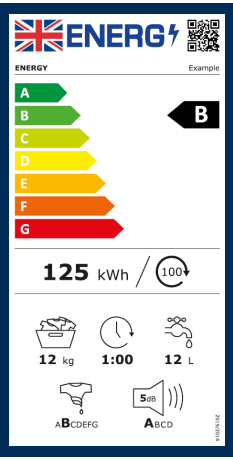
NEXT STEPS

See https://energysavingtrust.org.uk/advice/draught-proofing/ for more information on draught proofing your building.
If you are not sure about whether a vent is required – seek professional advice.

ECB funding is available to support projects of this type where there is a demonstrable benefit – speak to your County Cricket Board.

REPLACE EXISTING APPLIANCES WITH ENERGY EFFICIENT NEW MODELS

Do this as part of your replacement cycle for appliances and equipment



WHAT DO WE DO?

It is probably not economic to replace appliances until they have reached end of life and can be taken for recycling.

But as you replace your appliances look for more energy efficient versions. Look for water efficient as well as energy efficient appliances.

Consider also whether different appliances could save energy – for example a glass washer rather than a large dishwasher for the bar.

Follow manufacturer recommendations for operation and maintenance – always use the most energy efficient operating program ('Eco mode').

Impact **Low-Medium**

Impact will depend on the old machine but it al adds up over time

Cost **Low-Medium**

Depends on the appliance.

Payback Period **Variable**

Depends on cost and benefit.

WHAT DO WE NEED TO CONSIDER?

Do your research on your existing appliances and when choosing new appliances.

NEXT STEPS

Speak to suppliers and understand the energy efficiency of their appliances – shop around for the best deal on the most efficient appliances.

HIGHER COST BUT STILL HIGH IMPACT PROJECTS

INSULATING WALLS AND FLOORS

Up to a third of heat can escape through poorly insulated walls and floors

WHAT DO WE DO?

After you have draught sealed and insulated your loft space, the next area of your building envelope to look at is your walls and floors – particularly in older buildings that do not benefit from cavity wall insulation or insulation between the wall and interior lining material.

Cavity wall insulation can be injected into the cavity between walls commonly found in brick-brick or brick-concrete/breeze walls.

Insulation can also be retro-fitted to the interior or exterior of solid walls.

For floors – generally speaking you only need to insulate the ground floor or floors above unheated spaces such as maintenance sheds.

Impact **Medium-High**

Depends on existing wall type and insulation

Cost **High**

Depending on the size of the building, the type of walls etc costs can range from £10-£25k.

Payback Period **20-30 years**

Depends on cost and benefit.

WHAT DO WE NEED TO CONSIDER?

The first thing to identify is the wall construction of your building. We strongly recommend that you consult with reputable builders and insulation specialists. Always select products carefully and ensure that products are fire safe.

These are larger cost projects which will depend on the size of your buildings. You will be able to reduce costs and payback periods if you incorporate insulation works into any planned building improvements – particularly the walls.

You should determine whether or not you need planning permission particularly if you are changing the exterior appearance.

Do not block up air bricks under floors – they are there to prevent your floorboards from rotting.

ECB funding is available for suitable projects. Funding will significantly reduce cost and payback periods.

NEXT STEPS

See https://energysavingtrust.org.uk/advice/cavity-wall-insulation/ for more information on cavity wall insulation.
See https://energysavingtrust.org.uk/advice/solid-wall-insulation/ for more information on solid wall insulation.
See https://energysavingtrust.org.uk/advice/floor-insulation/ for more information on insulating floors.

ECB funding is available to support projects of this type where there is a demonstrable benefit – speak to your County Cricket Board.

INSTALLING NEW WINDOWS AND DOORS

Replacing single glazing and poorly insulated doors can cut energy consumption by up to 10%

WHAT DO WE DO?

Replacing single glazed windows and poor quality doors with modern double or triple glazed windows and highly insulated doors can reduce energy costs by 10%. Even some older double glazed windows can be draughty or not provide insulation comparable to modern windows.

Impact — **Medium**

Depends on existing window and door type.

Cost — **High**

Depending on the number of windows and doors but typically £12-15k.

Payback Period — **30+ years**

Depends on scale of cost and how much can be saved compared to the existing windows.

WHAT DO WE NEED TO CONSIDER?

You should determine whether or not you need planning permission to replace windows (typically required for listed buildings and in conservation areas).

Replacing windows and doors is specialist work. Speak to a number of suppliers to understand product performance and costs for supplying and fitting the windows.

Replacing windows and doors can significantly improve security but review your security requirements as part of the project.

ECB funding is available for suitable projects. Funding will significantly reduce cost and payback periods.

NEXT STEPS

Identify whether or not you have single glazed, draughty or poorly performing windows and doors.
Consult with at least three suppliers to review different products and to compare prices and service levels.

ECB funding is available to support projects of this type where there is a demonstrable benefit – speak to your County Cricket Board.

REPLACE YOUR OLD BOILER WITH A MORE EFFICIENT ONE

Replacing a G-rated (low efficiency) boiler with a new A-rated (high efficiency) boiler can reduce energy consumption by 22%

WHAT DO WE DO?

If you have an older gas, LPG or oil fired boiler it is likely that it is not as efficient as a more modern boiler. Boiler efficiency is measured as the amount of heat produced for the amount of energy put in. It can be measured on your boiler by a gas engineer.

Boilers are rated for energy efficiency on a scale of A (best) to G (worst).

Replacing a G rated boiler with a modern A rated boiler reduces energy consumption by 22%. Replacing a D rated boiler with an A rated one still saves 13%.

Impact — **Potentially High**

Depends on the contrast in efficiency of the old and new boiler but up to 22%.

Cost — **Medium**

Very dependent upon the size of the boiler and building but at least £5k.

Payback Period — **15-30 years**

Depends on boiler cost and contrast in efficiency between old and new boiler.

WHAT DO WE NEED TO CONSIDER?

It is important to understand the efficiency of your existing boiler. Ask your Gas Safe engineer to determine this at your next boiler service.

Gas, LPG and Oil fired boilers all use fossil fuels. Consider a lower carbon heat pump (air-source or ground-source) as an alternative as these use electricity which can be generated using renewable energy from the grid, or even on-site renewables such as Solar PV.

If you are fitting a new fossil fuel boiler consider technologies such as passive flue gas heat recovery and solar water heating to help reduce consumption further.

NEXT STEPS

Get the efficiency of your existing boiler.
For gas and LPG boilers, the installer must be Gas Safe registered. For oil boilers, we recommend that you use an OFTEC registered installer.
Speak to a number of registered suppliers and obtain at least three quotations. Understand their products and aim to fit the highest efficiency models.
ECB funding is available to support projects of this type where there is a demonstrable benefit – speak to your County Cricket Board.

INSTALL AN AIR-SOURCE HEAT PUMP

An air source heat pump transfers heat from outside air to water to heat your building and water tank.

WHAT ARE THEY?

Air-source heat pumps use heat from the air passed over a refrigerant to help heat water in a building (a bit like a reverse refrigerator). They are a lower carbon replacement option for gas boilers. Potentially they have very high efficiency (they output three times the energy they consume) but require:

1. A well insulated building to retain the heat generated.
2. Hot water storage (they will not provide hot water on demand like a gas combi-boiler)

They are suited to highly efficient radiator designs or under-floor water heating systems.

Impact **Variable**

Depends on existing heating system, building insulation and heating type.

Cost **Very High**

At least £12,000 for a small pavilion and much higher for larger buildings.

Payback Period **20-30 years**

Very long but potentially much shorter with funding.

WHAT DO WE NEED TO CONSIDER?

Air-source heat pumps are more expensive than a gas boiler but less expensive (but also less efficient) than a ground-source heat pump. In the wrong building, with the wrong heating system they will be more expensive to run than a gas boiler too.
They are more cost effective when combined with on site Solar PV renewable electricity generation.
The majority of heat pump installations fall under permitted development but if you have a listed building or you are in a conservation area you may need planning permission.
Installation is less disruptive than ground-source heat pumps but external units do create noise – so locating the pump units away from neighbours or users of the ground is important.
Because they are a low carbon alternative, they are eligible for ECB funding in grant and loan form subject to being fitted into a well insulated, suitable building, with a suitable heating system. This will be assessed on a case-by-case basis.

NEXT STEPS

For more information on air-source heat pumps see: https://energysavingtrust.org.uk/advice/air-source-heat-pumps/ and https://energysavingtrust.org.uk/advice/in-depth-guide-to-heat-pumps/
Speak to reputable, suitably qualified and experienced installers and do your research carefully to see whether this is the right solution for your club.
ECB funding is available to support projects of this type in suitable buildings but applications will be reviewed on a project-by-project basis – speak to your County Cricket Board

INSTALL SOLAR-PV PANELS

In the right conditions, solar photovoltaic (PV) panels can save you having to buy electricity from the grid.

WHAT ARE THEY?

Solar photo-voltaic panels capture the sun's energy and convert it to electricity that you can use in your club instead of buying that electricity from the grid. In general, the more sun falling on the panels, the more electricity generated.

It is important to install enough panels and install them facing the sun, with minimum shade. That can mean that they face the playing area – so need to be robust enough to not be damaged by ball strike if they are in range.

Any unused energy can be sold back into the grid – but prices vary among companies, and can be variable.

Impact **High**

Well located panels will cut your energy bill and your carbon footprint significantly.

Cost **High**

Costs are £6,500 for a 4.2 kWp, 25 m^2 system. You might be able to (and need to) add more to your building.

Payback Period **20-30 years**

Long but potentially much shorter with funding (and shortens as energy prices rise).

WHAT DO WE NEED TO CONSIDER?

Work out the area you need, the roof area available and identify the optimum orientation – the Energy Saving Trust have a calculator that can help you (see link below). In most cases roof-mounted Solar PV is permitted development but you may need permission on a listed building or in a conservation area – consult with your local planning authority. This only applies to roof-mounted. If you are planning ground-mounted panels, you will need planning permission.

Think carefully about when electricity is used – if you are using most of your electricity after dark then the benefit will be less than using it during the day. You can install battery storage to help to capture electricity generated during the day and use it after dark. Batteries can also be used to store energy overnight when it is cheaper, to use during the day. Speak to suppliers about costs, space requirements, maintenance and lifespan of the batteries they supply.

Solar PV is of particular benefit when using air or ground source heat pumps or when charging electric vehicles and machinery. So you can time charging and heating to when electricity is being generated.

NEXT STEPS

Use the Solar PV tool on the Energy Saving Trust website to explore the area you need and the best orientation. You can find this tool and more information here: https://energysavingtrust.org.uk/advice/solar-panels/

ECB funding is available to support projects of this type where there is a demonstrable benefit – speak to your County Cricket Board.

GETTY IMAGES

WHAT DO WE DO NEXT?

Having read the guide:

1

Think about what solutions you could apply at your club and build a plan.

The biggest gains are when you can combine as many of the measures as possible to add up all the energy savings.

2

Cost your plan – speak to reputable suppliers and get costs for your buildings. Quiz them hard on potential savings and get them to show (and explain) their working!

3

Visit www.ecb.co.uk/be-involved/club-support/club-funding/county-grant-fund to find out about funding from the ECB.

Speak to your County Cricket Board about grant and loan funding for your project. They will be able to support you and draw on expertise from the ECB Facilities Team.