Frequently Asked Questions

What is solar water heating?

What are the benefits of solar water heating?

How much of my total hot water requirements can a solar water heater provide?

By how much will replacing a conventional geyser with a solar powered system reduce electricity consumption?

What is Eskom's involvement in the solar water heating programme?

How hot can the water get?

What happens in winter or on rainy days, when there isn't enough sunlight to heat the water?

How does the programme work?

Do I need to install a new geyser, or can solar panels be added to the existing system?

What are the life-cycle expectation of the system and the total energy savings on it?

Where can I obtain information on accredited suppliers?

Why is it important that a solar system be tested by SABS?

Why is it important that solar systems get the SABS mark approval?

Can I install the system myself?

How do I ensure the quality of the system I have purchased?

How does this rebate work?

How much does a typical system cost and how much is the rebate?

How much can it save in your typical electricity bill?

Given our current electricity shortage, how much can solar water heaters help reduce demand?

What is the typical payback period for a solar water heater?

Where can I get registered as a supplier on the programme?

How do I know which system to choose for my climate?

Do solar water heaters with a test certificate only (and not the SABS Mark of Approval) qualify for the rebate?

Why is there an insistence on a 5-year guarantee in respect of Eskom's domestic electricity rebate programme when the industry norm is far less?

How do suppliers qualify to be registered on the programme?

How does the Eskom rebate work for clients who are purchasing solar thermal or photovoltaic panelling?

How long will the rebate remain at this level?

How easy is the process to claim your rebate?

What is the lifecycle of a solar water heating system?

When will legislation be ready on all new buildings and when will the tax rebates be available?

Does Eskom have a low pressure system on the rebate programme?

How are companies making use of solar water heating in South Africa?

What about bulk domestic installations?

For how long is the programme/rebate for installing solar geysers likely to run?

How does this translate into the power required to supply the average South African household for a day, month, or year?

What is solar water heating?

Solar water heating is a system for heating water using energy from the sun. Solar energy is collected by a panel/collector, which is then connected by pipes to a hot water storage device such as a hot water cylinder.

What are the benefits of solar water heating?

Solar water heaters can help save water heating costs by reducing the amount of gas and electricity needed to heat water. By using sunlight to heat water instead of combustible sources or fossil fuel-produced electricity, fewer pollutants are being introduced into the environment. Solar energy is not affected by the current shortage of electricity and does not stop providing hot water during load shedding.

How much of my total hot water requirements can a solar water heater provide?

A solar water heater can provide between 50% and 90% of your total hot water power requirements, depending on the climate and model of heater. When you don't use the element you will save 100% of your hot water power requirements.

By how much will replacing a conventional geyser with a solar powered system reduce electricity consumption?

The electrical geyser uses on average between 30 – 50% percent of your household's monthly electricity bill. Replacing your conventional geyser with a solar powered system will reduce that percentage of your electricity consumption by up to 70%.

What is Eskom's involvement in the solar water heating programme?
In order to reduce the growing demand for electricity, Eskom is embarking on energy efficiency and alternative energy programmes that promote energy savings on a large scale in order to mitigate system constraints. Eskom is working towards a goal to meet government's target of 10 000 gig-a-watt hours of renewable energy generation by 2013. Part of this is the financial assistance in the form of a rebate to assist hot water consumers to convert to solar.

How hot can the water get?

The ideal temperature of your geyser or tank is between 55 and 60^{o}C. Most solar systems heat the water to between 55 – 65^{o}C, but some can heat much higher than that. You need to be aware of over-performing systems so that you are not scalded by the hot water.
Unless otherwise required the water temperature at the point of use should be at, at least 38^{o}C for domestic fixtures such as baths, basins and showers and at least 45^{o}C (in order to melt fats) for sinks. The temperature is not meant to exceed 55^{o} C at any point of use.

What happens in winter or on rainy days, when there isn't enough sunlight to heat the water?
Solar water tanks are better insulated than electrical geysers and can keep water hot for a longer period of time. This ensures that there is always a tank full of hot water (and a backup of hot water) in the early evenings/mornings – provided the tank size is correct. An electrical backup system is allowed on the programme provided it has a timer switch that ensures it does not operate during Eskom's peak demand periods. Customers need to ensure suppliers/installers appropriately insulate all the pipes exposed to the elements to prevent freezing and heat loss.

How does the programme work?

The programme is structured around a rebate which reduces the selling price of a SABS approved or tested (limited time period) solar water heating system. The reduction in price is based primarily on the performance of the solar water heater and its associated electricity saving potential while taking into regard the prime interest rate, expected electricity increases. It also aims to bring the systems down to a 5-year payback period.

You receive a rebate directly from the facilitating auditors of the programme after submitting a completed claim form obtained from your installer. Only registered products, complying with the following criteria, qualify for the rebate:The system must have passed the South African Bureau of Standards (SABS) tests, and comply with the South African National Standards (SANS) for thermal, mechanical performance and safety requirements.

The supplier of the system must be registered with SESSA (Sustainable Energy Society of South Africa) solar water heating division – the industry's self-regulating body.The system must be purchased from a registered supplier/retailer and installed by a registered installer. You will only be able to claim the rebate once the facilitating auditors receive a complete claim form and an accurate invoice.

The system must have a timer to optimise energy savings and regulate everyday usage. The system must be appropriate for the household and area in which it is installed, in terms of size, frost protection and water quality compatibility. It must have a comprehensive guarantee of at least 5 years on all major parts.

Do I need to install a new geyser, or can solar panels be added to the existing system?
Standard geysers are not designed to be utilised with solar collectors as they do not have sufficient inlets and their linings are often not designed to withstand the temperature experienced from solar energy. The supplier should evaluate the existing geyser and, based on your needs, the supplier can evaluate the possibilities of using the existing system.

What are the life-cycle expectation of the system and the total energy savings on it?
Each piece of equipment has a different savings profile which depends on various elements such as geographical area, water usage profile, number of users and the size of the system. However, on a 200 litre system, the SABS average is 5.67kWh per day at 16MJ input power. The expected life of the equipment can range from 5 to 15 years; most systems are guaranteed for 5 years.

Where can I obtain information on accredited suppliers?

The suppliers that are part of the rebate programme (those that have passed quality and reliability tests) are listed in the supplier database on this website. There are other suppliers in the market, but if they are not part of this programme to reduce costs to the consumer, they may not have been passed through the SABS testing or approval or may not be part of the industry body.

Why is it important that a solar system be tested by SABS?

The specifications on solar water heaters focus on three main areas: quality, performance and safety. Testing systems verify these requirements. As the payback periods are very important it is vital that the solar water heater is of a quality that ensures system longevity.
The mechanical performance tests e.g. hail, freezing and pulsation test (testing of the valves) are conducted to ensure that the minimum quality standards are met.The performance tests are conducted to determine how well the system works. The safety test determines if all the safety requirements are met, including electrical and mechanical safety criteria.

Why is it important that solar systems get the SABS mark approval?

The SABS mark of approval takes the test report and adds an evaluation of the manufacturer's ability to consistently produce quality solar water heating systems. This means that if the testing indicated a high quality, durable and safe solar water heater design, and the manufacturing quality audit indicated that the manufacturing facility can manufacture high quality products consistently, the SABS will allow the manufacturer to use the SABS mark.

Can I install the system myself?
In order for you to qualify for the rebate, the solar system has to be installed by an approved installer. Even though the concept of the system may look simple, many areas can be damaged if the system is not installed by a qualified tradesperson. Accredited suppliers register their installers and undertake to oversee the installations to ensure that they comply with programme and building regulations and other applicable legal requirements. A new plumbing regulation body has recently been formed (PIRB) which will allow customers to identify qualified and licensed plumbers. Therefore, if you have purchased a qualifying system and your local plumber is registered on the programme to install that system, you will be able to make use of them. The guarantees can be lost if it becomes evident that someone without the correct technical expertise has tampered with the system.

How do I ensure the quality of the system I have purchased?

Purchasing a system that is registered on the Eskom programme ensures that the system and the supplier have been checked and audited to the SABS minimum standard for solar water heaters, not only safeguarding you as a consumer but also giving you greater assurance of the system's quality. Buying an Eskom registered system means you qualify for a rebate, making your purchase good value for money.

How does this rebate work?

You will receive the rebate directly into your bank account within 8 weeks after you have submitted complete and accurate claims forms, provided that the system and the supplier have been registered on the programme, and that the installation is done by an installer registered by the supplier. This relies on both you and the installer filling in the claim form 100% correctly and attaching the relevant documents requested.

How much does a typical system cost and how much is the rebate?

Costs can only be provided taking into account your specific hot water usage habits but an approximate cost can be given here. Installing a 200 liter solar water geyser costs approximately R15,000 with an average installation cost of between R2,000 and R6,000. The upfront cost of a solar water heater (including installation) is higher than electric or gas water heaters but the savings on your electricity bill will compensate for this over time. Once you have paid back your system, your hot water is for free! .

How much can it save in your typical electricity bill?

A geyser uses between 30 – 50% of the electricity used in a home. Typically taking overcast weather and usage patterns into account, 70% of this energy can be displaced by a solar system.

Given our current electricity shortage, how much can solar water heaters help reduce demand?

If 100,000 geysers were to be installed this would offset 300 MW worth of connected load. However if we take diversity and usage into account this equates to a 63 MW load that is actually removed during our peaks.

What is the typical payback period for a solar water heater?

With the current rebates in place paybacks are typically between 5 years or less, depending on geographical area, water consumption patterns, number of people in the household, type of system chosen and energy cost.

Where can I get registered as a supplier on the programme?

Anyone interested in becoming a supplier can contact Deloitte by email on eskomswhprojectatdeloitte.co.za.Questions on the solar water heating programme can be answered by our DSM Help Desk: Email: solarateskom.co.za Tel: (011) 800-4744 during office hours

How do I know which system to choose for my climate?
Areas that experience frost (such as Gauteng) should only make use of freeze resistant systems. We do not have severe winters in South Africa, but we do have frost and temperatures below 4oC, which can cause systems to burst and fail.

One of the tests that the SABS does is a freeze test to ascertain whether the systems can actually withstand low temperatures. Non-frost areas tend to be in a narrow band of the South African coast line. All inland areas are prone to frost so if you live inland, you should buy a system that is tested to withstand frost conditions. Furthermore, water in South Africa can be very corrosive, especially when the water is hot. If systems are not manufactured to withstand our water quality then the components do not last for the guarantee period. Critical parts that need to be suitable to our water quality are valves, copper pipes, and the lining of the storage vessel. Indirect systems can handle both frost and poor water quality.
Finally, South Africa has very high levels of radiation and therefore system performance can decrease. Just because a system has an overseas test report does not imply it is designed to handle the high temperatures it will be exposed to here. Systems that get too hot are potentially very dangerous and should be configured for our radiation levels.

Do solar water heaters with a test certificate only (and not the SABS Mark of Approval) qualify for the rebate?

Yes – however the test certificate is only valid for 12 months and then the programme requests that suppliers move to the Mark of Approval as this is a far better form of quality assurance – it is not simply a once-off test on a system. The Mark of Approval ensures that components of a consistently good quality, due to the regular system tests and factory quality verification.The bulk of systems on the Eskom programme are very expensive – won't people rather buy outside of the programme.
The Eskom programme is open to all suppliers selling SABS tested or Mark Approved systems. Eskom does not control or set the prices of systems in any manner.
The aim of the programme is to set a minimum quality standard to protect the customer and industry as a whole. There are a range of systems registered with the programme and some lower cost systems that are busy being finalised for registration. You should research the technology as much as possible to ensure a good purchase.

Why is there an insistence on a 5-year guarantee in respect of Eskom's domestic electricity rebate programme when the industry norm is far less?

In South Africa the industry norm for a conventional electrical geyser was 3 to 5 years and that of solar geysers was between 3 to 10 years. Internationally the solar geyser norm is 5 to 10 years. The average expected life span of a solar system is between 10 and 20 years, depending on a number of factors. Eskom has chosen a 5-year guarantee as we require the quality of systems to provide you with sustainable energy savings. But it is important to note that the 5-year guarantee is on the collector and geyser only, with only 1 year on workmanship, pipes and pipe fittings.

Eskom's EEDSM strategic investment approach when selecting the energy efficient technologies to offer to the market is based on a number of aspects:
The technology's savings contributions in the specific market.
The load factor of the technology (the daily duration that technology is consuming electricity).
The need to provide technologies based on international benchmarks and standards to ensure a life span of between 3 – 5 years with a minimal impact on the environment – thus contributing to sustainability efficiency.
the cost of investment.The stipulated period is also a minimum requirement for the EEDSM programme to effectively contribute to increase the reserve power margin and to limit additional generation expansion programme.

How do suppliers qualify to be registered on the programme?

If a supplier does not provide a 5-year warranty it cannot participate in the Eskom programme.To participate in the Eskom rebate programme, the solar supplier/retailer system has to abide by the following:
The system must have an SABS Tested or Mark of Approval certificate.
The system components must carry a 5-year guarantee.
The system must be installed by an accredited installation team.
(This is now being altered so that it can also be installed by an accredited solar water heater plumber as classified under the new PIRB board. Each system will in future need to have a plumbing certificate of compliance on completion).The system must be installed with a load management

device or timer.All standards and regulations must be adhered to under OSHACT, Building regulations, SANS 10142 and SANS10106.
The supplier must the registered with SESSA industry body.

How does the Eskom rebate work for clients who are purchasing solar thermal or photovoltaic panelling?

Eskom is not currently involved in offering photovoltaic panels or systems to homeowners. This technology is currently still expensive and not that widely available in SA.

How long will the rebate remain at this level?

The rebate has already been increased by up to 120% in some instances. In monetary terms this amount can be up to R12 500, depending on the system you buy. Every year following 2010, the rebate will decrease. The increase in the rebate is in line with governments drive to increase the uptake of solar in the country and in so doing reach their renewable target. The aim of the rebate increase was also to provide a consumer with a payback of 5-years or less.

How easy is the process to claim your rebate?

The process for claiming is very simple. The reasons people think it is difficult is the market perception of Eskom and customers are being misled by suppliers that are not prepared or unable to join the programme as they are unable to meet the minimum requirements. There is one form to fill in (about half a page), which is supplied to you by your installer on the day of installation. The form requires you to attach a copy of your identity book, your invoice, your proof of residence and a copy of your utility bill.
We give you a self-addressed envelope in which you can mail it to the facilitating auditors or drop it off in a drop box within 6 months. Within 8 weeks the rebate is paid into your bank account directly – if the requirements are met. The facilitating auditors will email or sms you to inform you of receipt of your claim or if the claim form is not completed in full. Please note: claims are only processed once they are complete. Therefore if you have outstanding information, your 8-week period will start once the rest of the information is received.

What is the lifecycle of a solar water heating system?

A solar system has a lifespan of 5 to 20 years depending on the system and the maintenance on the system.

When will legislation be ready on all new buildings and when will the tax rebates be available?

The regulation for new buildings has already been gazetted. Soon all new buildings will have to be energy efficient by law. As for the tax rebates; once the application has been submitted to SARS, but there were no timelines or guarantees provided.

Does Eskom have a low pressure system on the rebate programme?

The SABS is finalising the testing issues and standard alignment around low pressure systems. We expect the availability of tested low pressure system to increase going forward.

How are companies making use of solar water heating in South Africa?

Eskom is planning to offer solar systems for industrial and commercial applications with financial incentives. Commercial applications are those that make use of boilers and large arrays of solar collectors. These include larger property developments that have the roof space and that require hot water to be created using a green environmentally-friendly energy generation method. Hotels and bed and breakfasts, which are measured on their energy efficiency and their conservation efforts in terms of water and energy, are looking to solar solutions. Industrial applications such as mining houses that require large quantities of sanitary hot water are looking at solar power to generate the large volumes of hot water required per shift.

What about bulk domestic installations?

Bulk installations such as when a developer builds a complex of townhouses or flats, can claim an incentive per installation. Contact our Solar Help Desk for information around these installations.

For how long is the programme/rebate for installing solar geysers likely to run?

It is envisaged that the rebate programme will run for the next 5 years or until such time as Eskom believes the market has been adequately stimulated and the required energy savings have been achieved. The rebate is currently the highest it has ever been and the highest it will ever be. This is because it is worked out to be an incentive against the current electricity tariff. Next year when the tariff increases again the rebate will be decreased. Every year thereafter, as the electricity price increases the rebate will decrease.

According to the Eskom facts provided, 6.4 GWh are saved by the solar water geysers currently. How does this translate into the power required to supply the average South African household for a day, month, or year?

Every household uses different amounts of power, depending on the income, sector and region. The average middle-income home uses between 600 and 800 kWh per month. At a consumption of 600 kWh per month the saving from the solar programme to date will supply 889 homes with electricity for a year.