GIDO GROUP (PTY) LTD
FREQUENTLY ASKED QUESTIONS

FAQ's – GENERAL:

1. **Q. How should I go about finding a contractor that is reliable, reputable and a good operator? I am concerned that the installation crew will give information about my property to criminals.**

   A. A difficult question. Concentrate on companies that have physical property addresses versus post boxes and a landline versus cell phone numbers. It is critical that the company should have their own installation teams. Many sub-contractors pick up casual labour on the morning of an installation! See sub-contractors.

2. **Q. Is there a governing body that regulates Electric Fence installers?**

   A. Yes. SAEFIA (South African Electric Fencing Installers Association). It is absolutely imperative that you deal with a company registered / affiliated with SAEFIA.

3. Q. **Do I need an Electric Fence Certificate of Compliance?**

   A. Yes, you do.

   It is important to note that Electric Fencing Legislation is nothing new, originally promulgated the 12th of August 1988 as per Government Gazette No. R.1593 to which ALL electric fences had to be in compliance with, including subsequent amendments, as published from time to time.

   Due to continued non-compliance, revised Legislation was promulgated the 1st July 2011 to which ALL electric fence installations now MUST comply with, requiring an EFC (Electric Fence System Certificate of Compliance).

   Said EFC is a statutory requirement, having come into effect the 1st December 2012.

   In addition, said Legislation now prescribes not just minimum, but also very specific material and installation specifications which ALL new electric fence installations must comply with in terms of the latest SANS directives.

   - The Gazette is the Act and the SANS (South African National Standards) document sets specifications / standards. They go hand in hand.

   In terms of current legislation, ALL electric fences installed prior to 1 July 2011 are deemed to be compliant, provided they were installed in terms of Legislation that prevailed at the time of installation.

   This deemed compliance has already cost some property owners dearly. There has been a dramatic increase in the number of repudiated / rejected insurance claims in recent months due to non-certified / incorrectly certified fences. Claims repudiated / rejected fall into three main categories:

a) **Homeowners insurance (Physical structure).** Should the electric fence itself get damaged either through a car going through your wall, a tree falling on your fence, a rain / hail storm, or the energizer getting damaged by lightning, etc. and your fence is NOT certified, your claim may NOT be entertained. **We get calls on a daily basis from clients whose claims have been rejected.** To read more about this, please click **here.**

b) **Householders' insurance (Contents). If you EVER listed your electric fence as a security measure with your insurance company, it must be compliant, irrespective when installed.** We recommend checking with your insurance company exactly what their policy stipulations and requirements are in terms of this legislation. **It has come to light that numerous insurers' now repudiate claims due to non-certified / non-compliant installations.** The last thing you want is your insurance company repudiating a claim after a burglary.

c) **Public liability. This is crucial in terms of your legal obligations and resultant public liability, specifically in view of current legal action involving some property owners.** To read more about it, please click **here.** This one is a lot trickier, as you will be held accountable and liable should somebody get shocked and or hurt and you are unable to provide current and valid Certification. **Remember, this is twofold: a criminal charge and civil claim.** Again, check with your insurer on their policy terms and conditions regarding your public liability and indemnity. Will they cover you in the event of a civil law suit? The last thing you want is criminal charges brought against you and having to pay out hundreds of thousands due to a civil claim should somebody get shocked. **(Civil cases have blossomed in recent years with "staff / visitors, etc." instituting civil action, claiming they got shocked).**

d) **This "deemed compliance" has also cost some property owners dearly in terms of criminal charges.**

Remember, your fence is "deemed" compliant. Thus, should somebody get shocked, e.g.: deliberately – criminal, or inadvertently – a child, visitor etc. And / or your fence is not legal, i.e. non-compliant, you can be charged criminally. To read about a 69 year old woman from Montagu in the Western Cape that got a thirty day prison sentence because her fence was non-compliant click **here,** and to read about her subsequent appeal brief, click **here.**

4. Q. Who can issue an Electric Fence Certificate of Compliance?

A. Only individuals / installers registered with the Department of Labour can do this.

So, when calling a company, ask them whether they are registered with SAEFIA and whether their installers are registered and accredited in terms of legislation. If the answers to both these questions are õYesô, you will be dealing with a reputable entity. Electricians, unless registered and accredited with the Department of Labour specifically in terms of electric fencing, cannot by default issue an EFC (Electric Fence System certificate of Compliance).

5. Q. Is an electric fence safe?

A. Yes. A properly installed electric fence in accordance with Legislation is absolutely safe.

The high voltage current is non-lethal because the electrical current is not continuous; it consists of pulses. Touching it will result in a very unpleasant experience.

The pulses are generated by a unit called an energizer that supplies a high voltage at very low amperage in short surges of power - usually around 3 milliseconds in duration. It is this millisecond pulse rate that provides the safety factor in low impedance energizers. The extremely short pulse rate prevents an electric fence from being easily shorted out and electrocuting a person or animal.

6. **Q. What happens if there is an attempted security breach?**

   A. All Gido fences come with an alarm system. Depending on the security grading of the electric fence, the alarm system is triggered from basic breaching such as: shorting of the wires, cutting of the live wire, cutting of the earth wire right up to alarm activation with any wire being touched. This is subject to make and model of the energizer and wiring circuit of the fence i.e. parallel or series. All new Gido residential fences are wired in series with earth wire monitoring. **This is the highest security grading of any electric fence**. **The siren will activate in the event of any live or earth wire being cut.** It is also a Legislative requirement that the live circuit is in series. In terms of basic residential security, do not invest in any system that does not offer earth monitoring.

7. **Q. Can it be linked to my armed response company?**

   A. Yes, provided your alarm system radio transmitter can accommodate the additional signal. Take note, the system is linked into your alarm systemôs radio transmitter and **NOT** into your alarm control panel. Gido highly recommends linking your energizer to the radio transmitter via a remote link. This prevents the possibility of lightning damage to your radio transmitter and alarm system in the event of a lightning strike and the subsequent power surge. Gido does this in conjunction with your armed response company, as they need to identify the link as ñElectric Fenceò on the control panel in their control room.

8. **Q. What are the monthly running costs?**

   A. You can expect an average increase of ± **R 60.00** in your monthly electricity bill.

9. **Q. What is the standard workmanship guarantee period on a domestic installation?**

   A. A very, very difficult question to answer, as there are so many variables. However, any reputable company worth its salt should be able to offer a minimum 3 years workmanship on a residential property. As always, subject to T&Côs.

10. **Q. How can I determine whether a company can honour its guarantee periods?**

    A. Tricky question. Common sense should prevail considering the following factors:

    - It is common knowledge that the average lifespan of new companies doing electric fencing is 9 ï 12 months. Their price calculations are incorrect, resulting in absurdly cheap prices that cannot sustain any business. The classic rate per meter advertisements. Although their intentions might be good, no money, or little money, equates to no business. In addition, more than three quarter of electric fence installation companies have closed down over the past 48 months, due to COVID19.

    - Guarantees from companies utilising sub-contractors are not worth the paper they are written on, e.g. the major armed response companies (It is common knowledge in the industry that they make use of sub-contractors). There is simply no financial incentive for the sub-contractor to honour any guarantee.

- Similarly, guarantees from owner operators are meaningless. Do you really expect the man to tend to your problem while he could be earning money installing another fence?

- Utilising one of the ñbakkie brigadeò installers. Well, installation quality and after-sales service cannot be big on your agenda.

- For the property owner serious about quality and service, do your homework. There are good reasons why some companies do millions of turnover per annum and others are starving. Check if they are VAT vendors, a dead giveway.

- Deal with a company that has an infrastructure e.g. offices, dedicated installation teams, dedicated repair and maintenance division, etc.

- Check if the company is open over weekends and or during the December period. You will be amazed at how many companies close down over December.

- Use plain old fashion common sense, if it is too good to be true, it normally is!

11. Q. What is the expected lifespan of the average domestic installation?

A. The average life span of a quality electric fence is 10+ years. The single biggest factor determining the ultimate lifespan of your electric fence is the insulators. Manufacturers do not guarantee them at all, merely stating that they have a life expectancy of ± 7 years. The reason for this is quite simple, the sunsô UV rays destroy the chemical compound, rendering the insulators brittle to the point of disintegration. **This fact has to be considered when opting for a restring and or add on, on fences five years and older.**

- The life span of insulators are ± 5 years for white and ± 7 years for black ones. Black last longer because they contain more carbon black to combat the suns damaging UV rays. The life span of insulators was so erratic in the industry that Legislation was introduced during 2016 requiring a minimum 5-year lifespan guarantee from manufactures against UV damage.

12. Q. What are the maintenance implications?

A. Vegetation is the single biggest cause of false alarms. Cut back and trim regularly!

As per Legislation: ñIn urban areas, care shall be taken that no vegetation could in anyway get nearer than 1 m above and 200 mm below the lowest electric fence wire of the case of the electric fence being installed on top of a structure, such as a building element. Vegetation shall not be closer than 200 mm on either side of the electric fenceò.

13. Q. Will touching my driveway gate result in a shock?

A. It shouldnôt. If your fence is installed correctly, there is NO risk of being shocked.

14. Q. Will it kill my cat or dog?

A. No. Cats are perceptive to the electromagnetic field caused by induction, which causes electrostatic energy, and as a rule avoid it. Think of rubbing a balloon along your arm and your arm hair standing on end. Cats experience the same thing and tend to avoid it. Dogs will touch the fence once and then leave it alone. The merits of cats versus dog intellect can be debated another time.

15. Q. How do I know which type of energizer to choose? Are some better and more reliable than others, and have better guarantees?

A. Yes, some energizers are better than others and have more features. Guarantees also vary. The sales consultant should be able to advise you on the most appropriate energizer for your specific needs. It is most definitely not one size fits all. In addition, ALL energizers now need laboratory test certification.

16. Q. What type of energizer will I need if I live on about a 500m², 1000m² or 2000m² stand?

A. The energizer size is dependent on the type of fencing cabling being used, size and layout of the property, and plant growth. All energizer outputs are governed by legislation not to exceed 10 000 Volts. The difference is in the Joule rating, one of Newtonôs laws, which quite simply put, is the calculation used to determine how far you can push a predetermined load, given over a predetermined resistance.

E.g. A 4 Joule machine can ñpushò ± 9000 volts for a distance of 16km over 1.6mm aluminium wire, 4km along 1.2mm galvanised braided cable and 900m over 1.2mm stainless steel cable. There is a massive misconception with the general public that stainless-steel wire is the best wire for electrified fencing, purely because it doesnôt rust. The fact of the matter is that nowhere in the world is stainless steel used as a conductor of electricity in any guise or form whatsoever, quite simply because pure stainless steel is a very poor conductor of electricity.

17. Q. I have been told that I should get a "powerful" energizer. What exactly is a "powerful" energizer?

A. A sales gimmick that is all it is. New generation 2 Joule energizers can energise around 99% of all domestic installations. And NO, a ñbiggerò energizer does NOT deliver a ñbiggerò shock! (See previous answer for more info). Yes, some energizers are better than others and have more features. Guarantees also vary. The sales consultant should be able to advise you on the most appropriate energizer for your specific needs. Again, it is most definitely not one size fits all.

18. Q. What about lightning strikes? Is there anything I can do about this?

A. Unfortunately there is nothing you can do about lightning. Some people switch off their energizers and or unplug them. It wonôt help you, because the electric fencing wires run straight into the energizer. In this case you are at the mercy of nature. In terms of legislation, lightning arrestors are now compulsory. Depending on the distance of the strike from your system, they are of tremendous benefit. However, if the strike is close by, nothing will help. As a rule, lightning damage is covered by your building insurance.

19. Q. What happens when it is my turn for "load shedding" i.e. power cuts?

A. All energizers supplied by Gido have an internal back-up battery as standard. Back-up periods vary as a rule from 8 ï 24 hours. Back-up systems are available to maintain power for up to 10 days. Ask your sales consultant.

20. Q. How many earth spikes do I need, how far apart should they be spaced and how deep should they be placed?

A. It is noteworthy that some companies indicate the exact number of earth spikes to be used for an installation on their quotations. Use the following details to calculate whether they are correct. The number of earth spikes required cannot be guessed!

In terms of domestic installations, legislation prescribes the following:

- The energizer must have three of its own earthing spikes, 1.2m in length, in close proximity, in pickable soil, spaced no more than 1.2m apart, either in a triangle or a straight line.

- In terms of the fence, one earth spike per 30 linear metres including the start and end of the fence.

- General agricultural electric fence systems shall have earthing spikes spaced no more than 100 m apart.

The above requirements are crucial for the effective functioning of the system. This is quite simply because unscrupulous installers, i.e. ñcheap quotesò, in a bid to save money, do not install sufficient earthing spikes for the system to operate effectively. These home owners are under the illusion that they are now secured. **NOT SO.** It is a statistical fact that **50% of all electric fences in Gauteng cannot shock you,** quite simply because they are not properly earthed.

21. Q. Can I install electric fencing on top of any type of boundary or does it have to be a wall? Can it be above a hedge, or railings, or on a wooden fence?

A. Electric fencing can be installed on just about any type of boundary and or perimeter fencing, as long as said fence is not lower than 1.5m on either the neighbour and / or street side. On your side of the fence it can be from the ground up.

NB! It is crucial to note that ALL electric fence installations are subject to the National Building Regulations and Building Standards Act, including subsequent amendments, No. 103 of 1977 regarding boundary walls.

This Legislation prescribes specifications for the erection of boundary walls including what can be attached / fitted to said boundary walls and in what manner.

Any structure fitted to a boundary wall cannot angle across said boundary wall towards a neighbour's property, or be fitted to the top or on top of a neighbouring boundary wall. This is termed "encroachment" and is highly illegal.

This law is now being enforced.

By way of example, round bar brackets fitted to the top of a pre-cast pillars between two properties is deemed illegal. So too are those little brackets fitted horizontally on top of boundary walls between neighbours.

This is applicable irrespective of who built the wall. There is case law on this and should you require further information, consult your attorney.

22. Q. I have seen electric fencing that is vertical, horizontal and slanted. Why this and what is the best angled bracket for electric fencing.

A. It is important to note that one size most definitely does not fit all. The design and type of wall will determine the type of bracket. There are different brackets for different applications. It is vital that the correct bracket be used for the relevant application.

23. Q. What is the difference between round bar and square tubing brackets?

A. Round and flat bar are the cheapest brackets on the market. Two of the major drawbacks of round bar are: Criminals slide the insulators apart to create an opening in order to get through and the design of the insulators does not allow for stepping up or down. As for flat bar; criminals simply push them flat or bend them to gain access. Square tubing brackets are the intelligent option for the person serious about his / her security. Gido will not install any fencing utilising either round and or flat bar as we cannot keep up with replacing flat bar and round bar fences that have been breached.

Gidoôs consultant will be able to advise you on the most appropriate bracket for your type of boundary wall based on your specific requirements and budget.

24. Q. Most fencing brackets seem to be black or white. Is there any other colour i.e. green? I've been told black lasts longer and is better than white. Is this true, and if so, why?

A. As a rule, fence brackets are manufactured mainly in black or white. The reason Gido advocates the use of black brackets is that white brackets will develop a black circle around the live insulators due to the bracket being charged electro-statically. That is the build-up of static electricity which attracts dust particles.

- Also, as a matter of interest, black insulators last longer than white, as black contain a lot more graphite to combat UV breakdown.

25. Q. I believe there are different types of wire? What are the differences and which is best?

A. The most common type of wire is galvanised braided cable. It is effective for most properties and a fairly good conductor of electricity.

The following chart is a guideline to conductor resistance. The lower the resistance of the conductor, the better the electricity flow.

NB. Please note that this chart is based on a 4 Joule energizer and gives the recommended live wire distance for a security fence wired in series. (Longer distances can be achieved in parallel).

Type of wire	Diameter	Resistance (Ω/Km)	Recommended live wire length
Stainless steel	1.2 mm	770	700 Metres
Braided cable	1.2 mm	330	3 Km
Aluminium wire	1.6 mm	31	8 Km

Many installers advocate the use of stainless-steel wire purely because they donôt know any better. Stainless steel is **NOT** a good conductor of electricity. There is a massive misconception with the general public that stainless-steel wire is the best wire for electrified fencing, purely because it doesnôt rust. The fact of the matter is that nowhere in the world is stainless steel used as a conductor of electricity in any guise or form whatsoever, quite simply because pure stainless steel is a very poor conductor of electricity. Thus, the stainless steel being offered to the public by the so-called electric fence fraternity is an alloy, which defeats the object. It can only be used effectively on very small installations, and in the end will, and does, rust.

The best conductor to use is aluminium wire, in conjunction with aluminum ferrules and aluminum HT (High Tension cabling - used to carry the current from the energizer to the fence and back again). You would also be in compliance with legislation and not need additional work done on your fence to bring it in line with legislation. Besides being extremely rust resistant, is it also the **ONLY** super conductor on the market. As a matter of interest, all Eskomôs overhead high voltage cables are coated with aluminum.

Fencing conductors of different resistance (ohms) should NEVER be used on the same fence, as it affects the performance and effectiveness of the energizer.

Legislation prescribes:

Joints on bare fence conductors shall be:

- Ferruled or line clamped (or both);
- Soldered, where wire wrap joints are used; and
- Sealed with paint, bitumen or by soldering, to reduce the galvanic effect caused by using dissimilar materials.

26. Q. I notice people have different numbers of wires. Why is this, and how many does the average person need?

A. Fifteen years ago the norm was a 4, 5 or 6 strand fences. 6 Strand equals 60cm. Go on, measure 60cm from the ground up next to your leg and see if you can lift your leg over. This was when electric fencing was still relatively unknown.

Unfortunately, with our current crime situation the need is for effective security, not just a token fence. The norm is 8, 10, 12 and higher. **THE BRACKET CHOSEN MUST BE AN EFFECTIVE PHYSICAL BARRIER, NOT A TOKEN FENCE THAT CAN JUST BE CLIMBED OVER! And saying your boundary wall is 4 metres' high is meaningless. During 2005 Gido secured a client's balcony, 10 floors up. They kept on stealing his Cadac gas braai and patio furniture!**

If you are going to install any security measure, get it right the first time.

27. Q. What should the distance between brackets be? Does the distance between these brackets make any difference?

A. This is regulated by legislation, maximum 3 m apart (Note. There are exceptions in terms of SANS). Because of the tensile elasticity of most metals, the further brackets are spaced apart, the easier it is to separate the wires. The distance between brackets is critical for the effectiveness of the electric fence.

28. Q. I've heard the fence is better if one long continuous piece of wire is used to make the fence instead of joining wires. Is this true and why.

A. It is not practical to run one continuous strand of wire. What is, however, critical in domestic applications is the fact that all joints should be ferruled and / or line clamped to ensure effective conductivity.

29. Q. Are all the wires live? Is it possible to touch one or two wires and not get any shock at all?

A. NO, NOT all wires on an electric fence are live. So yes, you can most definitely touch an electric fence and NOT get shocked as you in all probability touched a earth wire. Earth wires are run in between the live wires to facilitate an alarm if a perpetrator attempts to lift or depress the wires i.e. live shorting against earth. You need earth wires to ensure the shock capability of the system. The better the fence is earthed, the greater the shock. If the electric fence is not adequately earthed, it will not shock you.

30. Q. Is it possible to step over an electric fence?

A. Yes, if the fence height is low enough and there is a stepping area on the other side of your classic 4, 5 and 6 strand fences. Besides having the ability to shock, an electric fence must also be a physical barrier and be designed in such a manner that it provides maximum height thereby eliminating stepping areas on the inside.

31. Q. Stories abound about criminals placing blankets over the fence and then climbing over. Is this true?

A. Absolute rubbish. A normal blanket cannot insulate you from an electrical shock. Also, with a correctly installed fence the wires will short out, activating the siren.

32. Q. Is it possible to cut the fence wires?

A. Absolutely. This is why it is critical to wire your electric fence in series, live and earth. It is crucial to install an energizer with earth monitoring capabilities (Domestic applications). This is a phenomenal feature that, when correctly installed and wired, will activate the siren when any single strand of conductor on the fence gets cut. However, the number of installers out there that can wire the live and earth wires of any electric fence in series is limited. Gido Group (Pty) Ltd has never interviewed any installer that has been able to wire a fence correctly during aptitude testing. This includes prospects from major opposition companies.

Again, the importance of using a reputable company with fully trained staff.

33. Q. I know legislation prevents a charge that will kill someone. But what are the limits and how will it affect someone?

A. All energizer outputs are governed by legislation not to exceed 10000 Volts. A 10000 Volt shock is nasty, very nasty. However, the shock capability of the energizer is determined by its earthing. See notes under earthing.

34. Q. How long will it / should it take to install a fence around the average 1000m², 2000m² and perhaps 3000m² property?

A. Technically, a single day. This is based on straight and level walling, straight as in a straight line and level as in level along the top of the wall, e.g. pre-cast walling.

35. Q. Is installing electric fencing something I can do as a DIY project?

A. At Gido we have never come across a decent DIY installation, but it is not impossible. However, in terms of **Legislation, this is illegal.**

36. Q. Are there any legalities?

A. YES. All new electric fence installations must comply with legislation as per **Government Gazette No: 34154 dated 25th of March 2011.**

All electric fences must comply with SANS (South African National Standard) 10222-3:2011 Edition 4, Electrical Security Installations, Part 3 including subsequent amendments. Topics covered by the legislation include the following:

- Energizer and energizer placement specifications;
- Fence and energizer earthing specifications. E.g. besides the fence, the energizer having its own earthing spikes, 3 x 1.2m in length*;
- Fence construction, e.g. the placement and positioning of brackets;
- Specifications regarding the joining of fence wiring / cabling etc.;
- Warning signs, specification, type and application;
- **All new electric fence installations must have an EFC (ELECTRIC FENCE SYSTEM CERTIFICATE OF COMPLIANCE), to be produced on request to an Inspector. THIS CERTIFICATE IS VALID FOR A PERIOD OF 2 YEARS AND MUST BE RENEWED.**
- Etc.

All **do-it-yourself electric fence installations** are now illegal and **outlawed**.

All Electric Fence System installers must be registered with the Department of Labour.

Only **registered electric fence installers, registered with the Department of Labour,** are **allowed to do installations and or work on electric fences – this includes repairs and or maintenance.**

* It is a statistical fact that **50% of all electric fences in Gauteng cannot shock you** because they are not properly earthed. This is quite simply due to cheap, substandard installations, hence new legislation. It is there to protect you, the consumer.

FAQ's – TECHNICAL:

1. **Q. What is the difference between a volt, an amp and a joule?**

   A. Volt (Unit of electric potential difference)

   The unit of electromotive force and electric potential difference equal to the difference between two points in a circuit carrying one ampere of current and dissipating one watt of power.

   Ampere (SI unit of electric current)

   The basic unit of electric current in the SI system, equal to a current that produces a force of 2x10-7 newtons per metre between two parallel conductors in a vacuum

   The more amperage contained in the pulse of electricity on the fence, the more intense and severe the shock.

   Joule (Unit of energy)

   One of Newton's laws.

   The SI unit of energy or work, is equal to the work done when the application point of a one Newton force moves one metre in the direction of application

   In laymanôs terms: The amount of energy required to push a predetermined load over a predetermined resistance.

   E.g. A 4 Joule machine can ñpushò 10000 volts for a distance of 12km over 1.6mm aluminium wire, 4km along 1.2mm galvanised braided cable and 700m over 1.2mm stainless steel cable.

   A joule is a unit of electric energy. It is basically a combination of how the three variables of voltage, amperage, and on-time are combined to produce energy. One joule is equal to one watt of power for one second of time.

2. **Q. Why does my fence lose its ability to "shock" when vegetation touches the fence?**

   A. When vegetation touches an electric fence it draws a certain amount of voltage and amperage from the fence to the earth. If a lot of vegetation touches the fence it may draw all the voltage and amperage that is being produced on the fence by the energiser. When this happens, we say that the vegetation has "shorted" the fence.

   Other circumstances can cause an electric fence to lose voltage and amperage. If an insulator breaks and causes the electric fence wire to touch the fence post, the fence post will draw a certain amount of voltage and amperage from the fence to the post and ultimately to earth.

   If the fence wire is rusted the flow of electricity over the fence wire will be impeded, causing less voltage and amperage to flow along the rest of the fence. Even poor ñjointsò in the electric fence will cause a disruption in the flow of electricity and both voltage and amperage will be lost at every splice / joint along the fence.

   All of the circumstances described above are commonly referred to as "fence load".

3. **Q. What is a continuous current fencer?**

   A. Some electric fence energisers do not cycle or pulse electricity out to the fence. Instead, they produce a continuous AC current. We call these fences "continuous current" fences.

   In order to make these fencers safe to use, continuous current fencers develop very low voltage and extremely low amperage. The low voltage and amperage will not cause humans or animals to "lock on" to the fence. Continuous current fencers are not UL listed. Because these fencers produce such low voltages and amperages, they do not work well on long fences, weedy fences or wet fences. They also have little effect on longhaired animals, such as sheep and goats.

4. **Q. What does low impedance mean?**

   A. Low impedance fence energisers have the capability of increasing their energy output as a fence load increases. This means that as growth touches the fence and draws voltage and amperage to earth, a low impedance energiser will begin to produce higher amounts of energy or joules. These higher energy levels will overcome the voltage and current losses caused by the growth and maintain energy levels on the fence.

5. **Q. What is a "solid state" fence energiser?**

   A. Solid State refers to a high impedance type fence energiser. High impedance fence energisers do not have the capability of increasing their output energy as fence loads increase, the way low impedance energisers do. High impedance energisers cannot overcome high levels of fence load; they "short out" when too much growth touches the fence.

6. **Q. How long will a solar fence operate without direct sunlight?**

   A. Any fence energiser used during extended periods of cloudy weather (usually 2 weeks or longer) should be turned off to allow the battery to recharge. Normal recharging takes 3 days of good sunlight.

7. **Q. How long should the solar battery last, and how do I know when to replace it?**

   A. Normal life of the internal battery is typically 3 to 4 years. Properly maintained batteries will last much longer. A stored fence energiser should be taken out of storage every three months to allow the sun to reach the solar panel and keep the battery fully charged.

   To test the battery, measure the battery voltage with a voltmeter.

   12 Volt batteries should measure 12 to 12.5 volts

   A fence energiser with a low battery should be turned off and placed in the sun for 3 days to recharge. If, after this, the battery voltage is not at the top of the voltage range, you should replace the battery.

8. **Q. How important is good earthing?**

A. Improper earthing causes 90% of the problems found in an electric fence system. Here's why . . . most electric fence systems are ñearth groundò systems. This means that the electricity produced by an electric fence energiser must travel from the energiserôs output terminal, through the fence. A certain amount of the electricity goes through the human body and into the earth.

This electricity then travels through the soil back to the earth spikes of the system. From this point the electricity travels from the earth spikes, through the ground wire, back up the fence energiserôs ground terminal, thus completing the circuit.

The electricity transmitted through the soil is moving in the most direct path of least resistance back to the energiser. Electricity does not travel very well through certain soils. Moist soil with concentrations of conductive minerals is the most suitable transmitter of electricity. Recommended depth for earthing spikes is 1.2 m. The deeper it is knocked into the ground; the greater the chances of reaching subsoil moisture. It is a good idea to ñwaterò your earth spikes once a week as this greatly increase shock intensity.

9. Q. My energiser itself is making a ticking sound, is this normal?

A. Yes, it is the capacitor discharging the electrical impulse to the fence.

10. Q. My fence clicks, is this normal?

A. When it rains, clicking can occur. Water is an excellent conductor and some could have accumulated on or in a bobbin, support stay on a corner bracket etc. During rain and / or inclement weather vegetation is the single biggest cause of clicking. Determine where the clicking is coming from and check your fence. There could be a branch, leaf, insect etc. on the fence causing the clicking. Switch off the energiser and remove the obstruction. In dry conditions there should be no clicking sound.

Unfortunately, there is no short cut in sorting out clicking during rain. Someone has to go out in the rain and physically identify where this is happening to sort out the issue when dry. NO technician is able to locate said arching / clicking once the rain has stopped and the weather cleared.

