

Knysna Business Chamber welcomes municipal initiative to register Small Scale Embedded Generators (SSEGs)

The Water, Waste, and Energy Subcommittee of the Greater Knysna Business Chamber welcomes the initiative of the Knysna Municipality's Electrical Department and the municipal manager regarding registration of all energy output devices.

This request is not unusual, and Cape Town is doing the same.

Registering Small Scale Embedded Generators (SSEGs) is a safety issue at its core. We have to support this initiative in order to ensure we don't run into issues like the rooftop fire at Vodacom's Century City offices in Cape Town during July, <https://www.esi-africa.com/renewable-energy/solar/vodacom-fire-solar-installation-safety-measures-come-into-sharp-focus/> or exposing electrical support staff to live connections when everything should be off for maintenance.

While it cannot be confirmed that the solar PV (solar photovoltaic) system itself caused the fire at Vodacom, there are a few things that can be done to reduce possible fire risks from solar PV installations.

It is important that solar PV installations are done under the control of, are tested by, and are signed off by persons registered as electricians with the Department of Employment and Labour (DoEL). Secondly, solar PV industry accreditation (South African PV GreenCard) provides a further level of quality assurance to improve the safety of installations. (The South African PV GreenCard is a safety certification, quality assurance standard, and training programme for solar PV installers <https://pvgreencard.co.za>)

Some municipalities opt for persons registered with the Engineering Council of South Africa (ECSA) to sign off on the solar PV installations, but it should be kept in mind that they cannot sign certificates of compliance, as this can only be done legally by registered persons.

The benefit of requiring or using industry accredited installers in addition to registered installation persons, is that they are trained and sensitised to the fire risks of solar PV.

This includes, but is not limited, to:

1. Understanding the risk and behaviour of DC power as different to AC.
2. Not installing solar PV components on or close to flammable materials.
3. Allowing for space between the PV modules and roof surfaces for heat dissipation.
Spacing solar PV modules for access and maintenance.
4. Applying proper DC protection, wiring, wireways or cable routing and joint requirements (Bad or loose DC joints being one of the leading causes of solar PV fires worldwide).
5. Proper DC testing during commissioning (not included in current certificate of compliance according to SANS 10142-1)

6. Regular maintenance (the system owner's responsibility) which includes actively monitoring and responding to inverter alarms for fault conditions before a DC arc or fire occurs. Cleaning PV modules and physical inspection of installation.
7. An optional check would be to redo the DC commissioning tests every 3-4 years and to make use of technology like infrared cameras to identify possible faulty connections and/or solar PV modules.

Municipalities should however limit their involvement and participation on the electrical installation on the customer side as far as possible. Municipalities should rather check that the relevant responsible person was involved who provided the sign-off and will take responsibility for the installation if something goes wrong.

Having a well-working SSEG application process in place will improve the safety of solar PV installations as a result of the checks and requirements put in place to obtain approvals for SSEGs.

The SSEG application process will also help the municipality to develop the municipal sub-grid appropriately. It will allow the Knysna Local Municipality to consider the energy usage over peak and off-peak times. This should be monitored by the Knysna Municipality .

One understands that it is important for stability and maintenance of the grid infrastructure that the municipality knows exactly who has installed what and where. What people don't understand includes which systems are approved and which aren't.

CLARIFICATION

Questions in need of clarification include:

- What is the turnaround time/ response time required for the registration and approval of installations by Knysna Municipality?
- Are there any specifications or minimum technical and/or safety requirements that must be factored in – e.g. CoC (certificate of compliance) for the installation; adherence to SANS 10400 with regard to the installation and securing of panels and/or solar water heating systems on roof trusses, etc.
- Many domestic and commercial users will not be in a position to afford additional professional consulting engineering services. Should this be required - who would be required to conduct inspections? At whose expense? What qualifications/registrations would such inspectors need to demonstrate? How do we ensure the quality and legitimacy of this service?
- What are the major risks/ concerns regarding substandard installations? Examples? What risk assessments have been conducted? Conclusions drawn?
- What are the proposed remedial actions where installations/connections pose an unacceptable risk?
- How can the Greater Knysna Business Chamber and its Water, Waste, and Energy Subcommittee assist the Knysna Municipality and our community to better understand

the potential benefits and risks of SSEG (benefits to individuals and to Knysna Municipality of safe installation and risks of substandard installation)?

- Knysna Municipality to detail technical specifications/ requirements for grid-tie installations, including meter specifications.
- Propose public workshops for ECB, IEE, Solar PV, and other renewable energy suppliers and installers, where these details are tabled and discussed, and where opportunities exist to clarify details.
- Who is approved to actually install these systems? There is a list of approved Inverters but this list excludes a lot of models that have been approved for import.
- It also seems that no system can be installed from this month unless the installation is approved by the municipality.
- The costs for all the approvals and the approvals framework is not understood.

All these comments and or questions will be discussed in a joint forum with Knysna Municipality's Department of Energy during an ongoing process to improve the Municipality's Energy efficacy and effectiveness.

In conclusion: whilst the principle is sound, the details raise concerns.

The Greater Knysna Business Chamber is in a position to provide one channel of queries, which can be forwarded to ward councillors, who can in turn share this with their wards.

People are requested to join the Greater Knysna Business Chamber to raise their concerns and support in solutions to the Knysna Municipality's Quest for Energy.

The Greater Knysna Business Chamber also welcomes owners and installers of SSEGs to take hands with Chamber as we aim to provide a channel for people to raise their concerns, and to publish responses in a FAQ format – if you like, a knowledge base.

- For more information, see the Knysna Municipality website Renewable energy: SSEGs <https://www.knysna.gov.za/live-here/electricity/renewable-energy-sseg/>

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