Industry-Wide Webinar

From Compliance to Sustainability: The Role of NRCS and NRS

Understanding how NRCS and NRS Requirements Shape Safety, Quality, and Renewable Energy in South Africa

Summary of the Q&A session

Understanding the Scope of NRS 097 vs. SANS 10142-1

As a trusted compliance and certification specialist in the renewable energy sector, Bravoscan is committed to providing clarity on regulatory frameworks affecting manufacturers, installers, and municipalities. Recent industry confusion surrounding NRS 097 compliance has raised concerns about which inverters require approval under this requirement and why some products do not appear on Small-Scale Embedded Generation (SSEG) approval lists.

To address these misconceptions, Bravoscan, in collaboration with the SAPVIA manufacturing working group, hosted a webinar titled *"From Compliance to Sustainability: The Role of NRCS and NRS."* The session provided essential insights into the distinct roles of NRS 097 and SANS 10142-1, ensuring that stakeholders fully understand how compliance is determined.

NRS 097 vs. SANS 10142-1: Defining the Scope

1. NRS 097 – A Specification for Grid-Tied Systems

NRS 097 is a technical specification designed exclusively for grid-tied embedded generation systems. It defines the safety and technical requirements for systems that export power back into the grid, ensuring stable and secure interconnection with municipal networks.

However, NRS 097 does not regulate:

- Off-grid systems
- UPS (Uninterruptible Power Supply) systems
- Backup systems that do not export power to the grid

Since NRS 097 applies strictly to grid-interconnected systems, inverters designed for backup and off-grid applications are outside its scope and do not require compliance under this specification.

2. SANS 10142-1 – The Legal Standard for All Electrical Installations

SANS 10142-1, enforced under the Occupational Health and Safety Act (OHS Act), is the legally recognized standard for all electrical installations in South Africa. Unlike NRS 097, which applies only to grid-tied systems, SANS 10142-1 governs the installation and safety of all electrical systems, including:

- Backup power solutions
- Off-grid renewable energy systems
- Standalone and hybrid systems

This national standard ensures that all electrical installations meet safety and operational requirements, regardless of whether they are connected to the grid. Future revisions of SANS 10142-1 are expected to further clarify interconnection standards for embedded generation systems.

Inverter Compliance and Municipal Misinterpretations

A key issue highlighted during the webinar is the misinterpretation of NRS 097 by some municipalities, which mistakenly require all inverters to be listed on SSEG approval lists—regardless of their functionality. This has created unnecessary barriers for compliant products, particularly for South African manufacturers producing backup and off-grid inverters that do not feed power into the grid.

Bravoscan emphasizes that NRS 097 should only apply to grid-interconnected systems, while backup and off-grid inverters must instead comply with SANS 10142-1. Correctly applying these requirements will prevent unnecessary market restrictions and allow compliant products to be used without undue regulatory burdens.

Product Compliance: NRCS and Regulatory Enforcement

1. NRCS Product Approval & LOA Requirements

The National Regulator for Compulsory Specifications (NRCS) is responsible for ensuring electrical product compliance in South Africa. The NRCS issues Letters of Authority (LOAs) to certify that products meet the necessary safety and performance requirements.

According to the Electrical Installation Regulations (EIR) 5(2):

- Inverters that fall under NRCS regulations must have an LOA.
- If an NRCS certification is not applicable, EIR 5(3) allows major suppliers (e.g., Eskom, City of Cape Town, City of Johannesburg) to approve products for installation.

This regulatory framework ensures that products meet national safety standards without unnecessary restrictions from municipal approval lists.

2. Why Municipalities Should Not Misapply NRS 097

Some municipalities have incorrectly extended NRS 097 enforcement beyond its intended scope, affecting installations that fully comply with SANS 10142-1 and other recognized international standards, such as IEC 62040 for UPS systems.

Key regulatory considerations include:

- SANS 10142-1 (7.12.6.1) already defines safety requirements for alternative power systems.
- EIR 5(7) prohibits excessive supplier restrictions, meaning municipalities cannot enforce NRS 097 compliance on non-grid-tied systems.

To ensure fair and consistent regulation, municipalities must align their enforcement practices with these legal frameworks.

A Balanced Approach to Compliance

For a transparent and standardized regulatory environment, compliance should be based on system functionality rather than broad misinterpretations:

✓ Grid-tied inverters must comply with NRS 097 to ensure safe interconnection.
✓ All electrical installations—whether grid-connected or not—must adhere to SANS 10142-1 for safety compliance.
✓ Product approval should follow NRCS regulations instead of being arbitrarily restricted by municipal approval lists.

By correctly applying these standards, the industry can maintain safety, quality, and compliance without stifling innovation and local manufacturing.

Conclusion: Ensuring Regulatory Clarity in the Renewable Energy Sector

Bravoscan remains committed to promoting accurate compliance standards and preventing regulatory confusion within the renewable energy industry. The SAPVIA and Bravoscan webinar helped clarify the correct application of NRS 097, SANS 10142-1, and NRCS requirements, ensuring that manufacturers, installers, and municipalities align their practices with legal and technical standards.

Moving forward, we encourage municipalities and regulatory bodies to apply these compliance requirements and standards correctly:

- NRS 097 applies to all grid-tied embedded generation systems, including those that do not export energy to the grid, and should not be used to regulate standalone off-grid systems.
- SANS 10142-1 remains the national standard for all electrical installations, ensuring safety and compliance for backup and off-grid solutions.
- NRCS product approval is the definitive benchmark for ensuring inverter compliance with national safety regulations.

By adhering to these principles, South Africa's renewable energy sector can continue to grow within a clear, fair, and well-regulated framework—encouraging local manufacturing, investment, and innovation.

Queries & Additional Information

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