



Energy Partnership
Energiepartnerschaft
South Africa - Deutschland



sanedi
South African National Energy
Development Institute

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FACT SHEET

AN OVERVIEW OF ENERGY EFFICIENT LIGHTING RESEARCH IN SOUTH AFRICA

The South African - German Energy Partnership, in collaboration with the South African - German Energy Programme (SAGEN) appointed SMEC to provide an overview of current EE lighting research being carried out at South African Universities, Universities of Technology, Eskom, public and private research institutions. The objective was to determine common themes, identify possible gaps that are not being covered and make recommendations on possible future EE lighting research focal areas for South Africa. This was presented as a report with profiles of the EE lighting researchers actively working in the field.

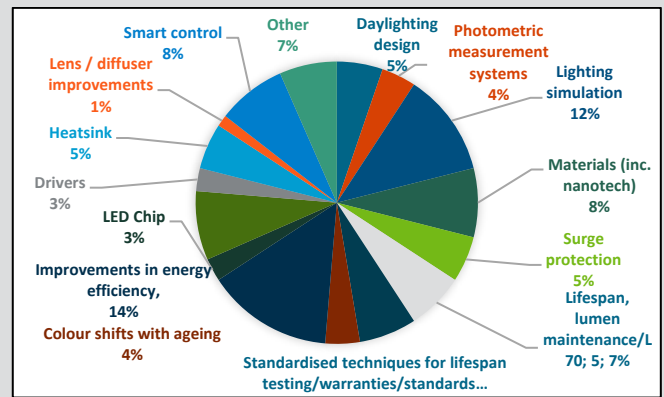


Figure 2: Analysis of questionnaires per research category (total received = 23)

ANALYSIS OF QUESTIONNAIRES

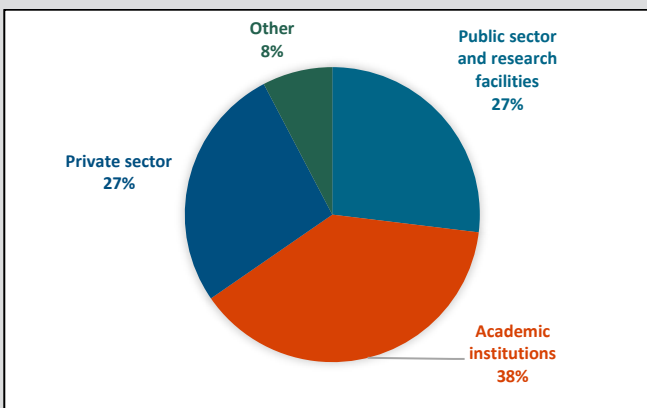


Figure 1: Analysis of Questionnaires received per sector (total received = 23)

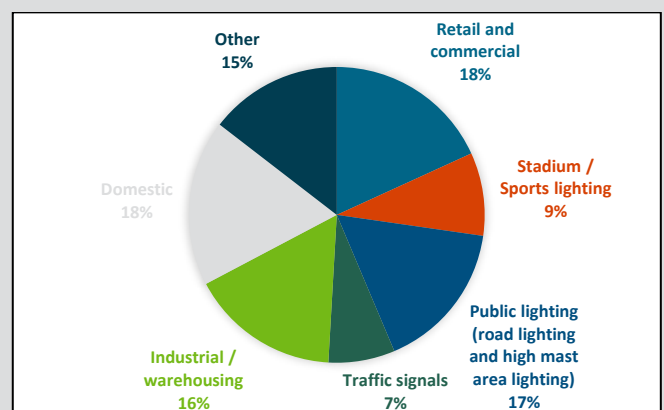


Figure 3: Analysis of questionnaires per lighting application (total received = 23)

ANALYSIS OF PUBLICATIONS

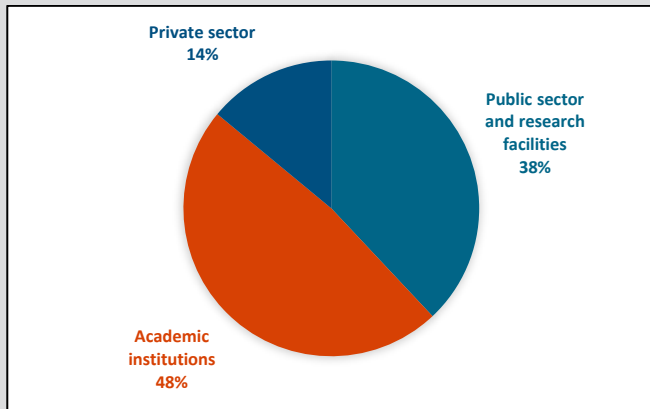


Figure 4: Analysis of publications per sector (total analysed = 31)

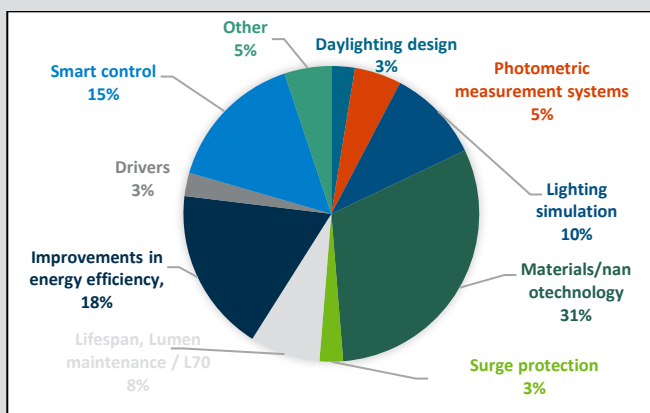


Figure 5: Analysis of publications per research category (total analysed = 31)

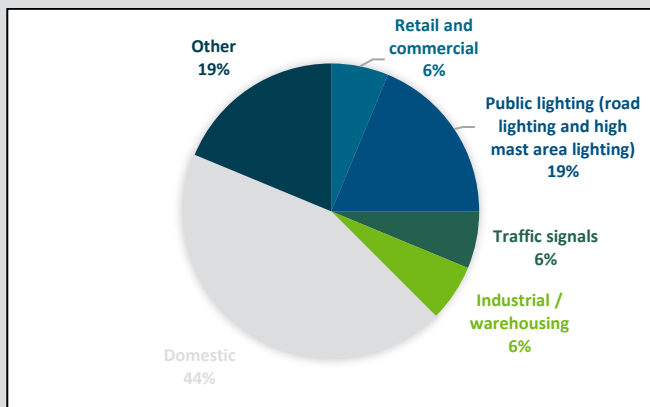


Figure 6: Analysis of publications per lighting application (total analysed = 31)

GAPS IN RESEARCH

Implementation

Two (2) researchers identified implementation as a gap. It was felt that there should be more research into the implementation of conducted research into practical applications, roll outs of programmes, etc. rather than just conducting research on the specific topics.

Efficiency Benchmarks

Another two (2) researchers identified the need for standard methodologies to determine “efficiency” as a gap. Development of a standard methodology to compute the savings and mathematical models to predict the techno-economic potentials of the EE lighting technologies is required. This also forms part of NMISA’s research focus, as they are developing national measurement standards.

Awareness Creation

South Africa has a very diverse profile for the recipients of energy services including access to affordable and efficient lighting. Appropriate motivation of the efficient lighting technologies and systems at work and at home is a key factor for sustaining all initiatives in this field.

One researcher at IESSA included in his response that he believes research should rather be conducted into how awareness of differences in energy efficiency can be created, and what the roadblocks are for implementing the research conducted, as well as how to overcome them.

Electronic Drivers

3% of questionnaires received were focusing on researching electronic drivers. In Dr. Arnold de Beer’s recommendation for EE lighting research, he explained that the efficiency and characteristics of the power electronics drivers for lamps is a topic which should be thoroughly investigated.

This is an aspect that OrbitX also addressed in its response, when listing what distinguishes its products from those of other manufacturers. “No Wi-Fi or radio interference, which is a common, but relatively unknown weak point of traditional LED drivers.”

Perception of No Gaps

Approximately 13% of researchers (3/23) felt that there are no gaps in research. It was expressed that there is not a lack of research into the different aspects of the lighting.

Electrical Network Interference

Two (2) researchers shared concerns of EE lighting causing Electromagnetic Interference (EMI). They are of the opinion that it is possible for EE lighting to “pollute” the electricity grid. Research in South Africa is necessary in this area.

The final report reflects a complete set of profiles developed for all 23 researchers including bibliographies and EE lighting research focus areas.

