

Market research report

Market Research for efficient lighting information label design in South Africa /
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1 REASON FOR THE RESEARCH

1.1 Broad context of energy efficient labelling in South Africa

The residential sector of South Africa (SA) is required by government to reduce its electricity consumption and carbon footprint. One of the initiatives is to remove electrical appliances that are not energy efficient and to promote energy efficient choices instead. This entails the manufacture of energy efficient technologies as well as the adoption thereof through policy and education. The Department of Energy (DoE), alongside the Department of Trade and Industry (dti), and the United Nations Development Programme (UNDP) are driving market transformation through introducing minimum energy performance standards for electrical items as well as labelling programmes and incentive schemes.

Now that the guide for energy efficient labelling has matured in strategy and information, the DoE and UNDP are set to conduct national communication campaigns to promote awareness and knowledge amongst the SA public¹. These will assist in educating consumers on the importance of making wiser, more efficient choices and how to make them; leading to more efficient environmental behaviours and practices.

The now widely accepted energy efficient (EE) label - similar to the international / EU label - has been adapted for use on various electrical appliances in South Africa and is mandatory for some appliances. As such, SA consumers are being exposed to the energy efficient labels as manufacturers seek to become more compliant.

1.2 Focus on energy efficient labelling in lighting

Although many light bulbs in the South African lighting category do carry the international / EU label adapted for lighting, the South African EE label has not been introduced as it is not mandatory and regulated as for other appliances. The label in mind that will be introduced is shown in Figure 1² below.

¹ United Nations Development Programme, Energy efficiency labelling campaign launched at the utility week conference, 17 May 2016.

² A guide for Energy Efficiency labelling, version 2.0. Department of Energy (2015)

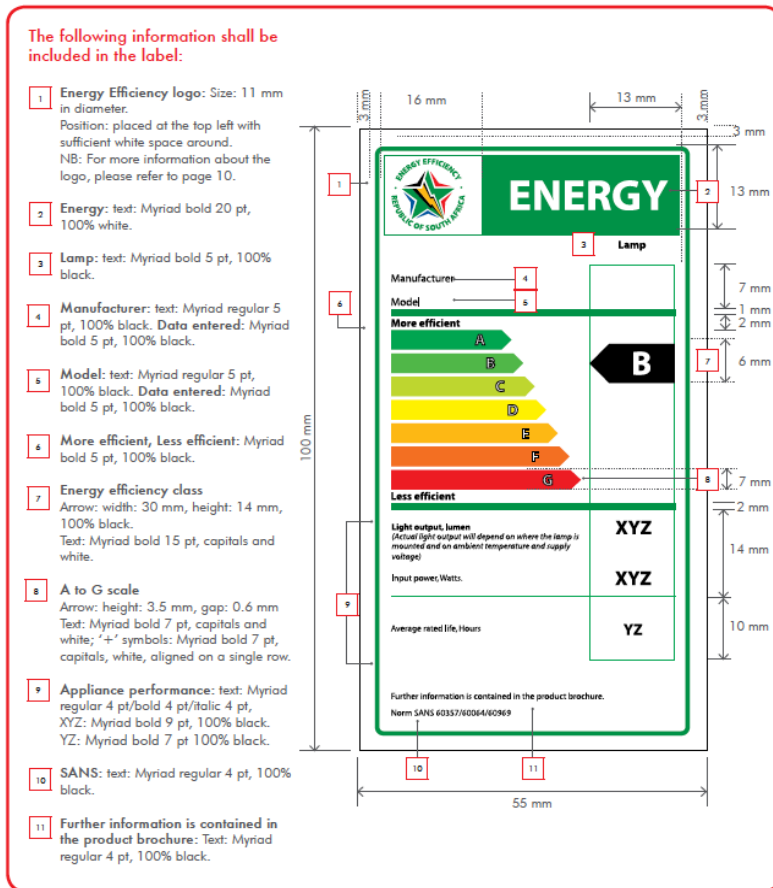


Figure 1: Formal Energy Efficient Label for SA Electrical Appliances

There are, however, behavioural lags in the uptake of efficient lighting technology where it appears that high-income households are converting rapidly and are reducing the use of old technology and lower to middle-income households tend to make choices based largely on price. Whilst there have been significant energy efficient advancements in the light bulb category, the current labelling (product information and formal EE label) on light bulb packaging does not clearly explain the criteria driving the performance of the various lighting technologies. As such, the confusion around key performance criteria could deter market movement towards more efficient choices.

Higher energy performing light bulbs are more expensive yet last much longer - but if people cannot understand the value offered through pack communication, they are unlikely to trade up. Ideally, if consumers experience an alignment between the information provided on light bulbs at point of purchase with the performance expected, they are more likely to adopt the new, more efficient technologies and reduce one of their top five residential electricity expenditure areas.

More market information around what drives value is required by the UNDP project team tasked with promoting and accelerating the adoption of energy efficient technology options for domestic applications. To drive their mandate of launching a trial incentive programme in Gauteng for light bulbs, education and communication are required to encourage consumer purchasing of more efficient technologies. National implementation is dependent upon impact of the pilot programme.

Therefore, the key reason for this research was to explore the effectiveness of communication devices so that South Africans purchasing light bulbs for domestic use – regardless of language, culture, education and literacy levels – can better understand the value which efficient lighting technologies offer them.

2 RESEARCH OBJECTIVES

The overall requirement of the research was to establish the effectiveness on consumer understanding of efficient lighting technologies through combining the current formal EE label on pack with a separate, stand-alone value label; and further to determine what role an endorsement label would play in decision making.

1. To evaluate the communication potential of two information/value labels; and how to optimise the design to support consumers with the purchase of light bulbs to best suit their needs, by helping them to understand what to expect from various options in terms of:
 - Light output levels – measured in light levels (lumens)
 - Colour rendering – colour temperature as in warm or cool;
 - Life expectancy – approximate number of hours use before light fails;
 - Energy usage – the efficiency relative to other types of light bulbs.
2. To evaluate which of a variety of endorsement labels best communicates that the light bulb pack under consideration is a superior performing product on energy efficiency and other performance needs (i.e., has met incentive specification).

To deliver upon the research objectives, the following information needs were identified:

- To test the understanding of the labels (value and endorsement) amongst the SA population against key messaging requirements:
 - To identify the most effective labelling option and elements of design within that for strongest understanding and ability to support a value led decision;
 - To explore the meaning, appeal, identity and credibility of endorsement brand logos and symbols; which are acceptable independent sources, i.e., not from the manufacturer;
- To identify the most appropriate size and placement of label to engage attention;
- To identify enhancements to design, size and placement to drive awareness and understanding;
- To understand the contextual environment of consumers to determine various maturity levels with regard to energy efficient behaviour, specifically in relation to light bulbs:
 - Attitudes towards and current behaviour around energy efficiency or energy ‘saving’
 - The purchase decision journey of light bulbs:
 - Needs for lighting and current usage habits;
 - Current factors used to decide what light bulb to purchase and reasons;

- Levels of knowledge about different types of light bulbs – incandescent vs. CFL vs. halogen vs. LED;
 - How is knowledge gained? What resources are sought?
 - Lifecycle vs. annual costs: current awareness of pricing vs. what is reasonable vs. out of reach;
 - Understanding of varied light output, colour rendering, life expectancy and energy efficiency levels;
 - If purchasing, in what quantities and for what purpose?
- To understand what different income segments in the consumer market perceive as an ‘acceptable’ price for an LED light bulb;
- What is the experience when purchasing light bulbs: where (location), when (frequency), who (store/online), what;
- To identify most effective media channels for communication:
 - Where – TV, radio, outdoor, online, social media, etc.
 - What – what programmes/channels/sites most frequently engaged with
 - When – most common media touchpoints through a day
 - How – best way to present information to drive engagement
 - Who – what is helpful and needed information for market sectors
- To establish level of willingness to engage in and learn about lighting technology and other energy efficient resources in general;
 - Identify specific information needs within and across the market
 - Identify most appropriate channels
 - Identify engagement tools, e.g., advertising, brochures, QSI, apps, etc.

3 RESEARCH METHODOLOGY

3.1 Approach to research design prior to engaging in the research process

The objectives outlined in the ToR were both exploratory and evaluative in nature, which therefore suggested a dual methodology using both qualitative (exploratory) and quantitative (evaluative) research methodologies.

As the ToR suggested a predominantly qualitative methodology, it did allow for alternative, innovative data collection instruments but accounting for no more than 15% of the total quoted cost. The ToR also stipulated that final labels for communication were to be understood by all South Africans regardless of language or literacy levels and, therefore, research design needed to reach as broad a range of languages, cultures, ages and incomes as possible – within a reasonable budget.

Consequently, the following research methodology was proposed, which consisted of three stages, which ran consecutively:

1. Stage 1: Primary Qualitative Research – 9 focus groups
2. Stage 2: Primary Quantitative Research – online survey
3. Stage 3: Follow-up Qualitative Research – 3 focus groups

It was recommended that those without access to electricity in the home were excluded under the assumption that there would be no need and therefore no awareness of the light bulb purchase process. The recommended sample, therefore, focused on LSM 3 as relatively new electricity users, through to LSM 10 as the most familiarised and more sophisticated user of varied lighting technologies.

Whilst qualitative focus group discussions with varied LSMs and languages are sufficient for an in-depth of understanding into the topic, they cannot sufficiently deliver confidence in the strategic communication direction at a nationally representative level. Quantitative research is better placed for this. However, the traditional face-to-face methodology at a national sampling level is both time and cost prohibitive, driving the recommendation to introduce an online data collection methodology as the alternate, innovative and cost-effective instrument. As online research is limited to those consumers with smart phones or access to electronic and digital devices, the appropriate target market was assumed to be LSM 6-10 upwards. Consequently, the recommendation was to conduct more qualitative focus group discussions with LSM 3-5 consumers, to engage in-depth with them on category understanding and behaviours; as well as their reactions to the meaning of various lighting label concepts. Fewer focus groups were suggested to reach LSM 6-10 sample, which was to be supplemented by the quantitative online survey data to substantiate communication directions and evaluate preference.

The recommendation was to pilot the qualitative discussion guide and stimulus concept label material with one of the LSM 8-10 focus groups to sense-check discussion flow and first response to materials. If comprehension was spontaneously poor across all consumers in the first group assumed to be most familiar with the category, it would be advisable to revise the lighting label concepts before the remaining groups were conducted. In other words, if the more sophisticated user of electricity and light bulbs did not understand the meaning of the concepts being communicated, we could anticipate even less understanding amongst more basic or new users of light bulbs.

3.2 Initial sample and recruitment criteria

The following table outlines the original sample that was proposed where the focus of qualitative groups for Stage 1 and 3 was LSM 3-5 with the balance LSM 6-10 supplemented by Stage 2 quantitative online survey.

Original research sample

| | LSM 3 | LSM 4-5 | LSM 6-7 | LSM 8-10 | TOTALS |
|--|------------------------------------|---------------------------------|----------------------------------|---------------------------------------|---|
| 12 x 2 hour QUALITATIVE FOCUS GROUP DISCUSSIONS | | | | | |
| Stage 1 sample | | STAGE 1 AND 3 | | Stage 3 sample | |
| KwaZulu-Natal | | Group 4 Black Port Edward | Group 11 Indian Durban | | 2 |
| Eastern Cape | Group 5 Black Kubha/Bushulas | | | | 1 |
| Western Cape | | Group 3 Black Grabouw | Group 2 Coloured Cape Town | Group 10 White Cape Town | 3 |
| Gauteng | | Group 12 Black Devon | | Group 1 Mixed Race Johannesburg | 2 |
| Limpopo | | Group 9 Black Seshego | Group 8 Black Polokwane | | 2 |
| Free State | Group 7 Black Thaba Nchu | Group 6 Black Mangaung | | | 2 |
| TOTALS | 2 | 5 | 3 | 2 | 12 |
| QUANTITATIVE ONLINE SURVEY | | | | | Stage 2 sample |
| STAGE 2 | | | | | |
| National sample with purchasers of light bulbs who have access to internet | | | | | 300 – 350 completed questionnaires |








Figure 2: Original research sample

The qualitative research sample was recruited against the following agreed recruitment criteria and some interesting observations emerged:

- All purchasers of electricity and light bulbs for domestic use;
- Age - a spread per group:
 - 18 – 21 vs. 22 – 35 vs. 36 – 49 vs. 50 – 65 years;
- Race – all races, either separate or mixed where appropriate;
- Gender – equal split males and females per group:
 - Lower LSM groups skewed towards females and younger males, as older males tend not to do the shopping. The few older males recruited tended to live alone and had to do the shopping.
 - Higher LSM groups were balanced male vs. female with a higher prevalence of shared shopping/home responsibilities as well as single fathers and mothers looking after home and children.
- LSM:
 - LSM 3 - new to electricity in the last few years:
 - Despite available information on original identified areas, when recruiters arrived many had been electrified for quite some time which necessitated changing the location for Group 5 and Group 9.
 - LSM 4-5 - had electricity for 4 – 10 years;

- LSM 6-7 – had electricity for as long as could be remembered;
- LSM 8-10 - had electricity for as long as could be remembered;
- Regions:
 - Gauteng; Western Cape; Kwa-Zulu Natal; Eastern Cape; Free State; Limpopo.

Respondents in the quantitative research online sample were screened as having purchased light bulbs for domestic use within the last year.

3.3 Living Standards Measure (LSM) groups

The Living Standards Measure is a multi-attribute segmentation tool, which is based on a household’s access to services and durables, and geographic indicators as determinants of standard of living. No personal demographics are used in the measure, nor is household income ever used.

Even though household income is not one of the variables used to determine into which LSM group a household may fall, there is a high level of correlation between the LSM groups and household income, i.e., the lower the household income, the lower the LSM group and vice versa.

Sampling for this research opted to use LSM rather than household income as a more stable measure in South Africa’s current economic depression. The high level of unemployment and retrenchment, particularly in low and middle-income groups result in variable household income levels month to month. This was particularly evident in LSM 3-5 groups where almost all respondents were unemployed and in LSM 6-7 groups where up to half had been retrenched.

Tables 3 and 4 below show a brief description of each LSM group.

| | LSM 1 | LSM 2 | LSM 3 | LSM 4 | LSM 5 |
|---|-------------------------|--|--|--|--|
| Size (2011) | 2% | 5% | 6% | 12% | 17% |
| Size (2015) | 1.1% | 2.7% | 5.7% | 12.8% | 16.8% |
| Community | Small urban/ rural | Small urban/ rural | Small urban/ rural | Small urban/ rural | Small urban/ rural |
| Head of household education (2015) | <i>Some high school</i> | <i>Some high school</i> | <i>Some high school</i> | <i>Some high school</i> | <i>Some high school</i> |
| Dwelling unit | Traditional hut | Squatter hut shack, matchbox and traditional hut | Squatter hut shack, matchbox and traditional hut | Squatter hut shack, matchbox and traditional hut | House, matchbox/matchbox improved |
| Average household income (2011) | R1 369 | R1 952 | R2 545 | R3 141 | R4 200 |
| Average household income (2015) | R2 225 | R3 352 | R3 357 | R4 156 | R5 636 |
| Access to services and durables | Minimal Radios | Communal access to water Radios, stoves | Water on plot or communal Radios, stoves | Electricity, water on plot or communal, non-flush toilet | Electricity, water on plot, flush toilet outside |

| LSM 1 | LSM 2 | LSM 3 | LSM 4 | LSM 5 |
|-------|-------|-------|-----------------------------|---|
| | | | TV sets, electric hotplates | TV sets, hi-fi/radio set, stove, fridge |

Table 3: LSM groups 1 to 5 by size, community, dwelling unit, average household income and access to services (Source: AMPS 2011; AMPS 2015)

| | LSM 6 | LSM 7 | LSM 8 | LSM 9 | LSM 10 |
|---|--|---------------------------------------|---|---|---|
| Size (2011) | 22% | 11% | 8% | 10% | 6% |
| Size (2015) | 22.8% | 6.8% | 4.3% | 4.9% | 3.1% |
| Community | Large urban | Urban | Urban | Urban | Urban |
| Head of household education (2015) | Some high school/ Matric | Matric | Matric and higher | Matric and higher | Matric and higher |
| Dwelling unit | House/ town-house/cluster house | House/ town-house/cluster house | House/ town-house/cluster house | House/ town-house/cluster house | House/ town-house/cluster house |
| Average household income (2011) | R6 454 | R11 022 | R14 877 | R20 667 | R30 559 |
| Average household income (2015) | R7 876 | R13 434 | R19 592 | R26 946 | R41 747 |
| Access to services and durables | Electricity, water in home, flush toilet in home, TV set, stove, fridge/ freezer, microwave oven, Pay TV | Same Pay TV, DVD, car Internet access | Same Pay TV, DVD, car, PC Internet access | Same Pay TV, DVD, car, PC Internet access | Same Pay TV, DVD, car, PC Internet access |

Table 4: LSM groups 6 to 10 by size, community, dwelling unit, average household income and access to services (Source: AMPS 2011; AMPS 2015)

3.4 The research journey and revised sample which unfolded

The initial plan as outlined in the inception report was to use the first focus group as a pilot and to use the findings from the first two stages of research to direct optimised label designs for final testing in Stage 3.

However, a highly iterative and collaborative process between research, design and strategy emerged based on what was learnt throughout the research process. The success of the final value label particularly is underpinned by the agility of this collaborative process, which despite the unexpected changes and time investment at this point, resulted in a highly impactful piece of communication material.

The overall response and comprehension in the pilot LSM 8-10 Johannesburg group to the original value label concepts was very poor. In consultation with the UNDP team and the graphic designer, a new concept was designed with a better, more cohesive layout, but no content changes were made. Additional endorsement labels were also designed and

introduced. New material, alongside original material was shown to Group 2 to Group 5, which together with Group 1 covered LSM 3-10.

Although comprehension of value label concepts remained very poor, significant category behaviour and perceptions emerged to explain knowledge gaps blocking comprehension. Again, in consultation with the UNDP team and the graphic designer, a new wave of material was designed. This resulted in a completely new value concept, then termed the infographic value label. Further iterations on endorsement labels were also introduced after Group 5.

The new infographic value label as well as the most consistently preferred value label concept (although regarded the best of a bad bunch), as well as new and stronger performing original endorsement label concepts were shown to Group 6 to Group 9, along with a much-revised discussion guide. However, the completely new infographic label with new content and layout, required revision to the remaining qualitative Stage 1 sample to again, explore comprehension levels across a representative sample of LSM 3-10.

Despite spontaneously positive engagement and a significantly higher level of comprehension with the infographic value label across all focus groups, a particularly important knowledge gap remained. Again, the collaborative process kicked in to revise two key elements of the infographic value label. This was put forward into Stage 2 quantitative online survey, along with the two top contenders and two new endorsement labels.

As the focus of the research through Stage 1 and Stage 2 was strongly around getting the key infographic value label to a point of successful communication, the collaborative process following results from Stage 1 and 2 also worked to optimise the endorsement labels. By this time there was strong direction on elements with most potential, which was used to produce three final endorsement label concepts tested in Stage 3, alongside the strongest contender from the first two stages. Again, the discussion guide was completely revised to reflect the switch in focus, testing endorsement labels first, with a quick back check on messaging emerging around the infographic value label. The sample was also changed to ensure a representative spread across LSM groups. However, as the quantitative online sample included a greater percentage of lower income levels than anticipated and enough in-depth behavioural exploration had been achieved in Stage 1, a strategic decision was taken to cover LSM 4 to **10+**. This extended the sample to include the perceptual and behavioural exploration of very high-income earners. Higher incentives and recruitment rates for 3 x LSM 8-10+ groups necessitated keeping the remaining two groups in Gauteng to remain within budget and to accommodate client viewing at this last, final stage of the research.

Figure 5 demonstrates the final and revised sample for all three stages of research.

Revised research sample

Guided by research objectives, the sample needed to be revised along the way to support recruitment as well as research findings and design directions.

| | LSM 3 | LSM 4-5 | LSM 6-7 | LSM 8-10 | TOTALS |
|--|-----------------------------|--|---|---|---|
| QUALITATIVE FOCUS GROUP DISCUSSIONS STAGE 1 AND 3 | | | | | |
| | Stage 1 sample | | | Stage 3 sample | |
| KwaZulu-Natal | | Group 4 Black Kwazimakwe | | Group 10, LSM 9-10+ Mixed race, 50% Indian Durban | 2 |
| Eastern Cape | Group 5 Black Bizana | | | | 1 |
| Western Cape | | Group 3 Black Grabouw | Group 2 Coloured Cape Town | | 2 |
| Gauteng | | Group 11 Black Mamelodi/Pretoria | Group 12, LSM 6-8 Mixed Race Johannesburg | Group 1 Mixed Race Johannesburg | 3 |
| Limpopo | Group 9 Black Seshego | | | Group 8 Mixed Race Polokwane | 2 |
| Free State | | Group 6 Black Botshabelo | Group 7 Black Botshabelo | | 2 |
| TOTALS | 2 | 4 | 3 | 3 | 12 |
| QUANTITATIVE ONLINE SURVEY STAGE 2 | | | | | |
| | | | | Stage 2 sample | |
| | | | National sample (excl. Northern Cape) with purchasers of light bulbs who have access to internet | | 254 completed questionnaires |

Figure 5: Revised overall research sample

3.5 Qualitative research implementation, analysis and reporting

Three of the focus groups (1 x LSM 6-7 and 2 x LSM 8-10) were held at a central viewing facility for stakeholders to observe, learn from and monitor the quality of discussions. As the more formal, business-like environment of this type of facility can be intimidating for those unfamiliar with the environment, the remaining focus groups were conducted in-home with a host respondent or at a local community meeting room. This strengthens trust and rapport, yielding more depth and better-quality data, particularly amongst lower LSM groups.

Only two moderators were used throughout the research to ensure a consistent flow of discussion and continuity of insight generation through the process. Although the discussion guide was adapted at iterative points highlighted above, consistency per stage was maintained.

All the focus groups were two hours in duration and audio-recorded from which transcripts were produced. Each respondent received a cash incentive for their participation as well as a meal and drinks during the discussion.

After Stage 1 was completed, the transcripts were analysed using both content and discourse analysis. From this analysis, attributes relating to the core quantitative objectives were identified and the quantitative questionnaire was designed with these attributes as a starting point. A top line directional report from Stage 1 was also prepared to inform recommendations on stimulus material changes for Stage 2.

Results from the quantitative research were used to inform Stage 3 discussion guide, stimulus material and sample changes.

After Stage 3 was completed, further content and discourse analysis was performed on the remaining three transcripts, which together with the overall field observations and formal research findings from Stages 1 and 2, informed the body of this report and final recommendations.

Figure 6 outlines the final qualitative sample achieved over Stage 1 and Stage 3, in which a total of 94 respondents participated between 7 June and 7 August 2018.

| Group No | WEEK DAY | DATE | DESCRIPTION | LOCATION | LSM | RACE | GENDER/AGE |
|----------------|----------|--------|-----------------------|--------------|-------|------------------|------------|
| Stage 1 | | | | | | | |
| 1 - pilot | Thurs | 07-Jun | Metro Gauteng | JDI Research | 8-10 | Mixed | Mixed |
| 2 | Mon | 11-Jun | Metro WC | Cape Town | 6-7 | Coloured | Mixed |
| 3 | Tues | 12-Jun | Rural WC | Grabouw | 4-5 | Black | Mixed |
| 4 | Wed | 13-Jun | Rural KZN | Kwazimakwe | 4-5 | Black | Mixed |
| 5 | Thurs | 14-Jun | Deep Rural EC | Bizana | 3 | Black | Mixed |
| 6 | Mon | 18-Jun | Rural/peri Free State | Botshabelo | 4-5 | Black | Mixed |
| 7 | Tues | 18-Jun | Rural/peri Free State | Botshabelo | 6-7 | Black | Mixed |
| 8 | Wed | 20-Jun | Metro Limpopo | Polokwane | 8-10 | Mixed | Mixed |
| 9 | Thurs | 21-Jun | Deep Rural Limpopo | Seshego | 3 | Black | Mixed |
| Stage 3 | | | | | | | |
| 10 | Mon | 6-Aug | Metro Durban | Umhlanga | 9-10+ | Mixed/50% Indian | Mixed |
| 11 | Tues | 7-Aug | Peri Urban Gauteng | Mamelodi | 4-5 | Black | Mixed |
| 12 | Tues | 7-Aug | Metro Gauteng | Johannesburg | 6-8 | Mixed | Mixed |

Figure 6: Qualitative sample achieved

3.6 Quantitative research implementation, analysis and reporting

For the quantitative stage, use was made of a single, cross-sectional, descriptive methodology using a structured questionnaire.

3.6.1 Questionnaire design and testing

The design of the questionnaire commenced once the Stage 1 qualitative analysis was completed. The questionnaire was designed using the consumer findings and language from the qualitative data to finalise attributes required for measurement, as well as to define the flow and structure of the questionnaire to ensure that the quantitative objectives were addressed. These focused briefly on establishing awareness and purchase frequency across different lighting technologies as well as identifying the drivers of purchase decision; then primarily on engagement and comprehension of the concept labels, which was the focus of the research.

The questionnaire was piloted amongst a small sample of qualifying respondents, mostly those known to the research and stakeholder teams. The final questionnaire took approximately 12 minutes to complete.

3.6.2 Sample

Broadly speaking, sampling methods are classified as either probability or non-probability samples. In probability sampling, each member of the population has a known chance of being selected and statistical inference can be drawn as the sample is representative of the population from which it is drawn. A non-probability sample is one where a random selection method has not been applied and the probability of inclusion in a sample is unknown³.

As the only way of contacting respondents online was purchasing lists, it was not possible to make use of probability sampling. For the purposes of this research, therefore, convenience sampling was used. Convenience samples are susceptible to selection bias and influences beyond the control of the researcher, a high level of sampling error and a low response rate⁴.

The response rate may be influenced by respondents refusing to participate at all; not completing the questionnaire in full; not being a qualifying respondent; refusing to answer the questions in a serious manner. These questionnaires were eliminated from the final number of questionnaires analysed.

As response rates are generally low for online surveys, efforts were made to improve the rate of response by offering an incentive in the form of a lucky draw for three cash prizes of R1 000, R500 and R300 respectively. At least two reminders were sent every two to three days to those who had not yet responded.

Lists of potential respondents with email addresses were purchased and invitations sent out to all to participate in the survey via the selected online survey programme, Qualtrics. Qualtrics is a reputable and widely used online survey platform in local and international academia and business. As a response rate of approximately 5% was expected, a list of 6 000 consumer names with email addresses was purchased initially with the expectation that an estimated 300 completed questionnaires would be received.

³ Bryman & Bell, 2011:176

⁴ Bryman & Bell, 2011:187

In line with the Protection of Personal Information (PoPI) Act, those to whom an invitation was sent were given the option to opt out of the research which resulted in their names and contact details being deleted from the database.

There were approximately 2 317 bounce backs from a list of 6 010 email addresses which led to the list supplier providing an additional 5 797 contacts. The response rate was significantly lower than anticipated at 1.27%. The lists were, therefore, further supplemented with contacts sourced from team members and qualitative recruiter databases. Of the 305 email addresses supplied, the completion rate was 33%. The overall response rate was 2,1%.

Screening questions were asked to ensure that respondents qualified for the research, i.e., to ensure that all respondents are purchasers of light bulbs for domestic use.

Table 7 below provides a breakdown of the number of respondents invited versus those who completed the survey.

| Date | Invited | Failed | Started | Finished | Bounced | Duplicate |
|-----------|--------------|-----------|------------|------------|-------------|-----------|
| 16-Jul-18 | 6010 | | 166 | 88 | 2317 | |
| 17-Jul-18 | 30 | 5 | 15 | 12 | 2 | |
| 19-Jul-18 | 104 | 2 | 34 | 25 | 19 | |
| 20-Jul-18 | 5797 | 23 | 106 | 62 | 2195 | 42 |
| 22-Jul-18 | 4 | | 4 | 2 | | |
| 23-Jul-18 | 118 | 1 | 52 | 46 | 10 | |
| 24-Jul-18 | 26 | | 13 | 9 | 3 | |
| 25-Jul-18 | 19 | | 8 | 7 | 2 | |
| 26-Jul-18 | 2 | | 1 | 1 | 1 | |
| 29-Jul-18 | 12 | | 2 | 2 | 1 | |
| | 12122 | 31 | 401 | 254 | 4550 | 42 |








Table 7: Quantitative response history

3.6.3 Data preparation and analysis

Data quality for any research project starts with quality design and project management. The script allows for data downloads at any given time. The data validation process begins from the time of the design of the questionnaire when logic checks are built into the script, i.e., cannot move to the next screen without an answer or skip to appropriate question. This means that before the questionnaire is sent out to the qualifying respondents’ devices, the script is refined until it meets best standards.

Consistency checks were carried out on the data before running the analysis and 254 usable questionnaires were obtained. The quantitative data was analysed using descriptive statistics from which a PowerPoint report was drawn up based on the quantitative Stage 2 results only. Frequency distribution and cross-tabulation of data was used as basic techniques to provide insights into the data.

Results have been analysed in total and by the main demographics breaks of age (four groups), gender (males and females) and gross monthly household income (four groups).

As the majority of the responses came from Gauteng, base sizes were not large enough in other provinces to analyse the data by province.

The results for all questions where use was made of a rating scale have been analysed excluding the ‘don’t know/cannot answer’ responses.

Figure 8 below shows details of the final sample achieved.

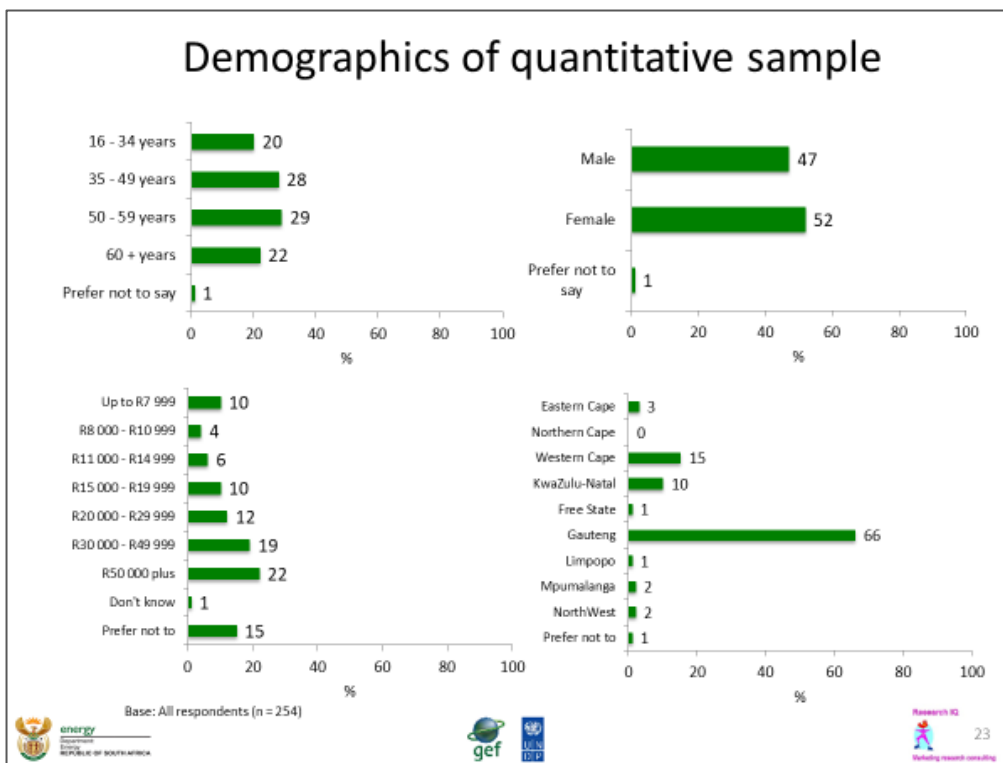


Figure 8: Quantitative sample demographics

The supervisory measures of the lead quantitative researcher ensured the highest quality of data possible under the circumstances. The online platform (as with any available in the market), was constrained in terms of stimulus material and the amount of visual graphics required for testing after revising the original labels.

The data sets are available to the UNDP and DoE for interrogation and safekeeping. However, respondent confidentiality is essential and thus identity of respondents (personal details) cannot be disclosed. Data sets are available in Excel files.

Main findings

The quantitative findings and report have been merged with the findings of the qualitative Stages 1 and 3, which inform the main findings of this report and final recommendations.

The main findings first discuss current attitudes towards energy efficiency to set the context within which perceptions and behaviours in the lighting category can be understood. The key purchase drivers of light bulbs highlight some of the knowledge gaps impacting on uptake of more efficient lighting technologies, which together with initial responses to value label concepts explain the need for and design of an educational infographic value label. The role and value this label plays in driving understanding of the energy efficient (EE) label in the general appliance category also becomes clear. Both these factors further establish the requirements of an appropriate endorsement label and strategic recommendations around a choice that has both purpose and longevity.

Note to reader: the report is written to blend the findings from both qualitative and quantitative research stages but it is important to bear in mind that the qualitative sample was weighted towards LSM 3-7, with only three focus groups in LSM 8-10+; the quantitative sample is weighted towards LSM 6 +.

4 INCREASING ENERGY EFFICIENT AWARENESS AND BEHAVIOURS

Both macro- and micro-environmental factors are driving South African consumers to value energy efficiency more than previously. There is an almost unanimous sentiment that South Africa needs to use electricity more efficiently as there is high misuse amongst both the residential and commercial sectors. LSM 3-7 respondents frequently comment on the high level of illegal connections where those who do not pay for electricity are unfamiliar with the costs. This contrasts to LSM 6-10 respondents, who comment more on over-use through unnecessary wastage, as if the cost does not really matter, until they start running out. This view was evident through a couple of comments implying ‘if I pay for it, I can use it as I feel’.

“I don’t know. I think it is like saying buy a car but don’t drive it at 100. You are saying I must buy electricity, but you say I must save it. I don’t know if that makes sense? I pay R400 on my electricity ... and I then utilise it.” (8-10/Mix/G/E)

“Saving electricity is not priority to be honest, until I notice that I don’t have money to buy it – that is when I start saving electricity” (6-7/B/FS/SS)

Urban dwellers living and working in and around commercial zones are critical of the number of large organisations that keep the lights on all through the night, which is regarded as unnecessary.

Whilst daily misuse is perceived as mostly driven by ignorance and a lack of education, many across the sample acknowledge the growing crime rates driving higher needs for electricity:

from flood lights over townships; to brighter light bulbs required for residential homes as well as lighting up commercial areas.

“Some do, like switch lights off at night but others don’t, they are having lights on in the middle of the night or go away for the weekend and leave the lights on” (4-5/B/FS/SS)

“I spend a lot of time alone at home and I am very security conscious. So, when I sleep alone at home I can have every single light in the house on ... I will pay more just to have all my lights on, all my flood lights on, all of that.” (8-10/Mix/G/E)

The majority are hyper aware that SA is short of electricity, having experienced heavy load shedding some years back and although less frequent, power outages still occur. Whilst most acknowledge the inconvenience of this on a personal level, lower LSMs demonstrate higher awareness that the growing SA population, and particularly those in rural and outlying areas, remain without supply or without 24/7 supply as ‘there just isn’t enough to go around’.

Most believe it is everyone’s responsibility – government, municipal, commercial and residential sectors – to use electricity wisely. Electricity is regarded as a critical resource that keeps life moving forward, from charging cell phones, to freezing leftovers, convenient quick cooking, to keeping business functioning. The mismanagement by Eskom – or ‘Eishkom’ – is top of mind universally as a key reason for both SA’s current shortage as well as the increasing cost of purchasing electricity. Whilst some are deeply angry with Eskom, others accept that ‘what is done is done’. This is expressed in different ways: some take the attitude of ‘why should I care’ whereas more care to learn about what can be done to help the situation.

“Am I supposed to save because Eskom did something wrong. That’s going to be my first thought ... I do none of that [saving electricity]” (8-10/Mix/G/E)

With a strong majority in support of curbing wastage, there is an opportunity for energy efficient campaigns. These are more likely to be better received now than in the past with higher awareness of a dwindling resource and the need to reduce overall electricity costs in the home, particularly in the current economic downturn where overall living costs continue to increase.

Current unemployment and poverty were blatantly visible in the lower income areas visited during the research, where respondents expressed significant concern about related growing social problems such as drug use, crime, teen pregnancies and reliance on grants. On the other hand, financial pressure is being experienced in LSM 8-10+ groups, trying to maintain living standards.

“We would save a lot of money if people were educated with energy efficiency” (6-8/G/Mix/E)

Amongst lower LSMs, there is a plea for stronger municipal efficiency and enforcement of regulations to curb illegal use.

“Some people are using electricity for free, like in the shacks, they have it on all the time ... they don’t care how they use it because they are not paying for it” (4-5/KZN/B/ZX)

In comparison to the foundation research conducted in 2011⁵, the overall perceptions around energy efficiency haven't much changed although the need to reduce national usage appears to have become more urgent across all market demographics. Whilst LSM 3-7 remain more community focused than LSM 8-10+, there is also some indication of increased awareness of global environmental impact at a lower LSM level.

Whilst reducing costs also remains the overall and most common driver of adopting energy efficient behaviours, there are a couple (LSM 8-10+) respondents in this study who aim to 'get off the grid'. However, what has changed significantly is the substantial growth in what are now regarded as energy saving practices by residential SA consumers in 2018 as demonstrated in Table 9. Please note that demographic skews are only recorded on the table for the current research study.

| <i>Mentioned 2011 research</i> | <i>Mentioned 2018 research</i> |
|--|---|
| HIGH FREQUENCY [mentioned in majority of groups] | |
| | Switch lights off when leaving room (across) |
| | Turn off plugs of appliances not in use (across) |
| | Unplug appliances not in use (across) |
| | Use gas to cook (across) |
| | Use gas heaters (LSM 4-10+) |
| | Switch off geysers (LSM 4 – 10+) |
| | Prepaid meters installed to monitor consumption (across, except for those receiving municipal bills) |
| | Installed geyser timer |
| MEDIUM FREQUENCY [mentioned in +/- 50% of groups] | |
| | Using 'energy saver' light bulbs (across) |
| | Some LED (across) |
| | Use alternative heat sources for 'long cooks' (somp, beans, tripe, trotters) – fire outside, paraffin cooker [LSM 3-5] Wonder box [LSM 4-7] |
| | Cook only once a day / cook in bulk less often & freeze [LSM 3-5] |
| | Only leave the fridge on all the time [LSM 3-5] |
| | Reduce use (some stopped using) of tumble dryers and air-con [LSM 8-10+] |
| LOW FREQUENCY [1-3 mentions across all groups] | |
| | Shower instead of bath [LSM 6-7] |
| | Use heat pump [LSM 8-10+] |
| | Use pressure cooker more often [LSM 6-10+] |
| | Iron in bulk rather than everyday [LSM 4-5] |
| | Geyser economiser [LSM 9-10+] |
| | Purchase energy efficient appliances, e.g. kettle, TV [LSM 4-10+] |
| | Using solar geyser [LSM 4-8 – Gauteng skew] |
| | Sensor lights outside [LSM 8-10+] |
| | Using solar lights [LSM 4-10+ - Gauteng skew] |
| | 1 x built wind turbine to power lights [LSM 8-10, Polokwane] |
| 1.1.1.1 | Using solar panels |
| 1.1.1.2 | Using geyser blankets |

Table 9: Comparison of 2011 vs. 2018 behaviours regarded by consumers as energy efficient practices

⁵ Pr Amber by T.Blumeris (KLA), for IDC in conjunction with Unlimited Energy, *Energy Performance and Labelling Requirements for Specific Electrical Appliances*

Shifts in lighting technologies, LED, solar and sensor lighting (as denoted by the blue font) were mentioned for the first time in the current study albeit at very low levels. What is interesting to note is that while consumers are economising with alternative sources of power (gas, solar, paraffin, wood), there is little mention of switching to energy efficient appliances. This may be related to less disposable income, although it is more likely to be driven by a lack of awareness of the growing range of appliances manufacturers are regulated to produce.

5 NEEDS FOR LIGHTING AMONGST SA CONSUMERS

Despite the fact that needs for lighting are as varied as level of access to lighting technology options between urban and rural consumers, the level of awareness and knowledge is not as variable. One of the key insights from this study is that the ‘gap’ in knowledge of lighting technologies is not as wide as might be expected between low and high LSMs.

Needs for lighting are dependent on levels of income and the size of the home.

LSM 3 have very basic needs such as one light bulb per room which may sometimes total three to four light bulbs for two to three rooms and one outside security light. Most of the time, low-income earners can only afford to replace on a ‘needs must’ basis with the cheapest light bulb, infrequently purchasing in bulk on promotion. The majority purchase from and rely on the closest spaza, with limited shopping trips to larger, retail grocers in nearby towns, such as Shoprite (mainly), Checkers, Spar, etc. Smaller towns and spazas especially, carry a limited range of light bulbs and offer little to no assistance in selecting the right light bulb.

Shopping at spazas is evident from LSM 3 through to LSM 7, the latter including outlying suburbs of major metros, e.g., Group 2 where most respondents were from Lansdowne in Cape Town. It is more convenient and saves transport costs to visit the local spaza instead of travelling a little further to the closer retail grocer. In addition, the retailers tend to stock according to the income demographics and preferences of their surrounding consumers with a more limited range of energy efficient technologies on hand.⁶

In comparison, LSM 10/10+ have more sophisticated needs with multiple light bulbs and sizes per various rooms, as well as fit-for-purpose light bulbs such as downlights or sensor light bulbs, as well as multiple higher wattage security lights outside which may have timer or sensor functionalities, e.g., for the garden, garage, gate, etc. These respondents also purchase from major retail grocers, which stock a much wider selection of lighting technologies and sizes. Upper LSM consumers also frequent outdoor and building retailers such as Builders Warehouse, Builders Express, etc., as well as speciality lighting stores such as Lighting Warehouse and Voltex. A few also shop online for light bulbs, e.g., Takealot.com. Upper income consumers are more likely to seek assistance in selecting light bulbs from

⁶ In August 2018 the lead qualitative researcher observed a fairly wide selection of Incandescent light bulbs in the local Linden (Johannesburg) Spar, including the same cheap Britolux brand found in smaller towns such as Port Edward (KZN) and Grabouw (Western Cape) alongside more reputable brands, as well as halogens, CFLs and LEDs.

outdoor/building/speciality stores and can also afford to stock up on a few spares or purchase in bulk more frequently.

“You have got to say it is a downlight you need or an LED globe or for a bedside table lamp or outside ... you give a description of the type of light you need” (8-10/Mix/G/E)

While urban consumers have access to a much larger range and selection of light bulb types and brands, similarly to rural and peri-urban consumers, they mostly tend to rely on purchasing light bulbs that are ‘familiar’. In other words, the lighting category is a highly habitually shopped category. For the majority, especially but not exclusively women, selecting a new type of light bulb is very confusing. The majority do not understand the product information that is supplied on the light bulb packaging. Consequently, even amongst LSM 8-10+, many still have very limited knowledge of light bulbs in comparison to other appliances shopped less frequently, e.g., buying a new kettle/iron/washing machine/stove is easier than purchasing light bulbs.

The frequency of purchase of light bulbs is highly dependent on what type of light bulb is purchased and within that, the quality of the brand selected. Typically, better quality brands in any type last longer. However, those purchasing the poorest quality ‘ordinary’ (Incandescent) light bulbs claim to have to replace them monthly or weekly (skewing towards lower income, but not exclusively) whereas those purchasing ‘energy savers’ are shopping for light bulbs less frequently, and good quality LEDs may last a few years. However, as a sub-category of appliances, it appears to be the most frequently shopped category in comparison to other appliances.

*“I only buy the round ones when no money – they don’t last more than 1 week” ((4-5/B/WC/X)
“I haven’t changed light bulbs in 4 to 5 years” (9-10+/Mix/KZN/E)*

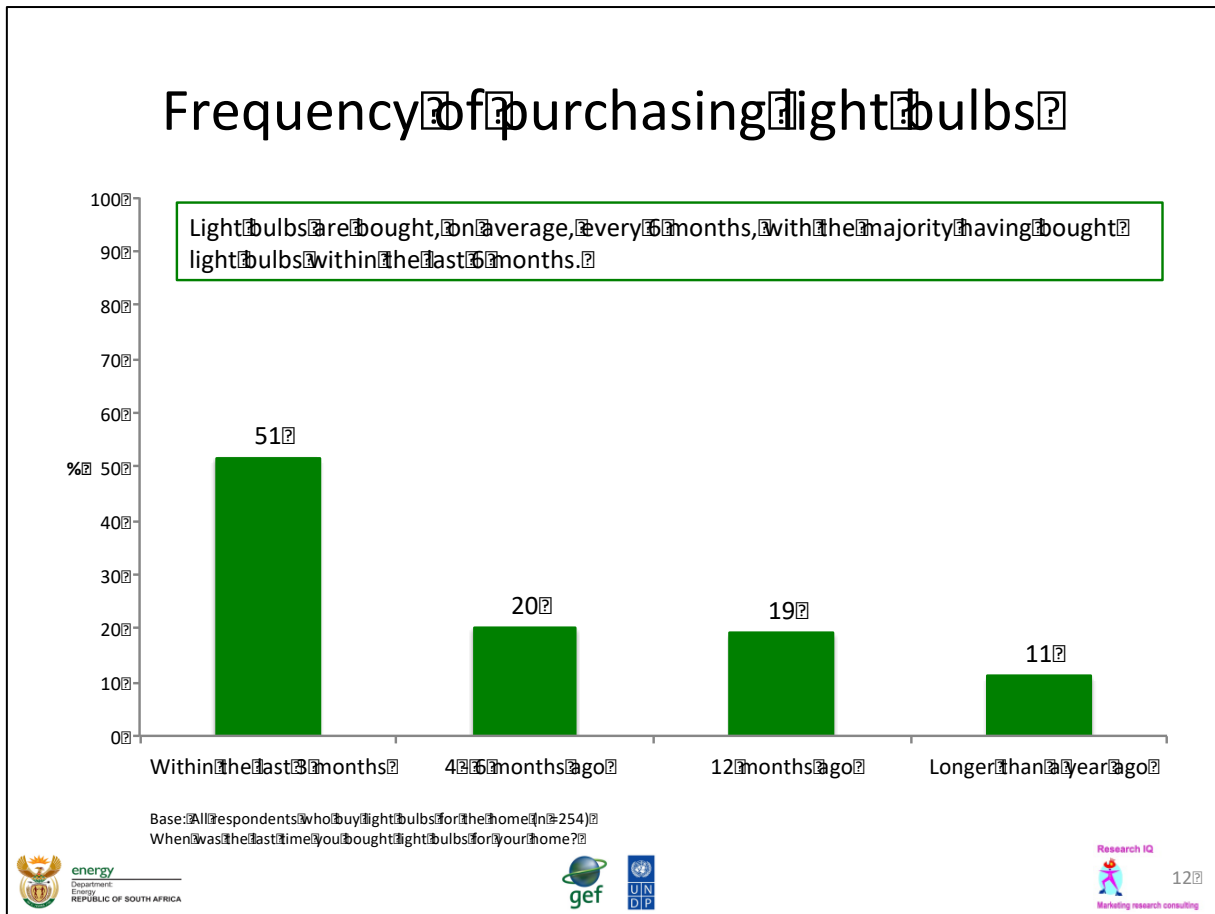


Figure 10: Frequency of purchase of light bulbs

6 PERCEPTIONS OF TYPES OF LIGHTING TECHNOLOGIES

CFL is by far the most popular type of light bulb that the majority either use or want to use but cost, dimness [especially with high need for security lighting] and lack of widespread availability are barriers that encourage continued use of incandescent light bulbs, particularly in middle to lower income homes in SA.

The terminology ‘**Incandescent**’ is NOT widely known and this light bulb is mostly referred to as the “Ordinary”, “Old”, “Fake”, “Bright”, “Clear” light bulb. It is either perceived as cheap or economical in price, but known for poor quality as it breaks easily, can ‘explode’ when finished and uses a lot of electricity. This is the most frequently replaced lighting technology but is cheap enough for lower income homes to carry a little extra stock at times. It is easily accessible across the marketplace, except in retailers that serve a higher income demographic and/or cater to specific needs such as outdoor, DIY and specialist lighting stores.

In mid- to lower-income areas, the market is flooded with cheaper brands that continue to encourage purchase, especially when cash is low and/or in an emergency.

“You don’t know where they come from” (6-7/B/FS/SS)

“If the situation comes and that was the last one and I had to go to the garage, I don’t want to drive around all the garages trying to find an energy saver. Then I am just going to buy a normal one” (8-10/Mix/G/E)

The 100W incandescent is most popular for its brightness and serves outside security needs well in comparison to the perceived cost of halogen light bulbs which some people (although limited) use for similar levels of brightness. Lower wattage light bulbs that use less electricity are not perceived to deliver on brightness required, and the limited number of respondents who are aware of lower wattage/high brightness options perceive them as too expensive.

*“People are reverting to the 100 watt because the lesser watt now is more expensive” (4-5/B/WC/X)
“I use 40 where I live because I don’t want it to be too bright, like the bedroom. And then in the open areas, outside and living area, then I will get 60 or 100 watts” (4-5/KZN/B/ZX)*

The majority set a price for incandescent between R5 and R10 per light bulb, or at a bulk purchase price of three or four for R20. For most consumers, except some new electricity users who first started with ‘energy saver’ light bulbs, incandescent were the first type of light bulb ever used and these are still in use by many, either as main choice or on occasion when nothing else is available. Importantly, **it is due to the incandescent light bulb that consumers equate brightness with wattage** – that 100W is brighter than 60W which is brighter than 40W. This mental framework holds true for many consumers in South Africa who apply the same concept to how they understand newer technologies.

Likewise, the terminology **CFL** is unknown to the majority who call this type of light bulb an “energy saver”, “new” or “fluorescent” light bulb although the latter is hardly mentioned. “Energy savers” are universally known following the Eskom swop out and whilst this initiative was successful as the market has experienced they last longer than incandescent light bulbs, there was little mainstream education done simultaneously that it also uses less electricity.

CFLs are recognised by their distinctive spiral shape and selected as either ‘long’ or ‘short’, with the former being more popular for mainstream ceiling or wall fittings as it is perceived brighter than the short one. Key disadvantages of CFLs are that they are perceived to be expensive; not bright enough for security, kitchens and bathrooms; the ‘length’ of brighter ones deters use in certain fittings, particularly lamp shades; and they are not well stocked in spazas and garage shops. Consequently, CFLs are preferred options for frequently lit areas not requiring higher levels of brightness.

The quality of CFLs is gaining awareness in that they are stronger and more durable than incandescent light bulbs, gradually ‘fading’ as an indication of the need to replace and that they use less electricity than incandescent (although the latter is not widely recognised yet). In other words, the overall value purchase drivers of CFLs are increasing. The majority perceive CFLs to cost between R18 and R40 per light bulb.

*“I also buy them even though I’m not rich” (4-5/B/KZN/ZX)
“I know it will last so I will pay R30” (8-10/Mix/L/E)
“I haven’t changed a globe since last year” (8-10/Mix/G/E)*

Halogens are the least known and purchased light bulb type in the market, where, in common with incandescent light bulbs and CFLs, the name is not widely known. Particularly amongst LSM 3-7, but not exclusively, there is lots of confusion between incandescent and halogen technology as the shape is identical. The confusion is particularly evident amongst two of the LSM 8-10 groups who price incandescent at between R15 and R20 per light bulb but unknowingly placed the halogen options in the same group they called “ordinary light bulbs”. So, it is highly likely that halogens are being purchased by consumers thinking they are incandescent light bulbs, just better quality choices! Those who know, and purchase halogens tend to do so more for outdoor security as they deliver good levels of brightness and are identified by the tubular, straight coil inside – one respondent referred to it as a “capsule” (6-8/G/Mix/E). Halogens are regarded as better quality than incandescent as the glass looks stronger, they use less electricity and last longer, but they get very hot when they burn and are more expensive than incandescent. Most respondents in the qualitative research did not know what halogens cost, but those who do price them between R28 and R43 per light bulb and up to R80 for a dimmable light bulb.

LED is the only lighting technology known and referred to by its proper name, however, of all the types, perceptions of LED are the most polarised in the market, with accurate knowledge dependent on engagement and purchase in the category. There is a strong skew towards purchasing in the upper income market. Qualitatively, 50% of Group 10 (LSM 9-10+) predominantly use and are in the process of switching to LEDs, with only one or two purchasing these light bulbs in the other two LSM 8-10 groups. Figure 11 below further indicates that LED purchasers skew towards upper income, older homes. However, whilst lower income consumers typically do not purchase LEDs, those who have the most recently electrified homes (since 2017) show greater awareness of LEDs.

“I buy a bulb from LED, the plastic one” (3/B/L/NS)

For those who have up-traded to LEDs, it is a preferable option to CFLs in terms of value, taking overall life expectancy and energy efficiency into consideration. There is also awareness that ‘bright’ LED options are available over incandescent and halogen light bulbs and that the pricing of LEDs has reduced substantially over time, with LEDs now more affordable than CFLs. Pricing however, is influenced by brand, with lesser quality and cheaper brands available that compromise performance. Consumers purchasing the category have experienced significant savings on their monthly electricity costs and have established usage throughout the home, both indoors and outdoors. Perceptions of pricing start at R22 for downlights, R25-R45 for general usage light bulbs, and R45-R65 for those with dimmer/day-night capability, and up to R120 for more specialised light bulbs.

“New LEDs give off same brightness, can put them outside” (8-10/Mix/L/E)

“LED prices have come down ridiculously they’re cheaper than energy savers. They last longer and are brighter with longer guarantees” (8-10/Mix/L/E)

“I haven’t changed a light bulb in 5 years” (9-10+/Mix/KZN/E)

Across the market, LSM 3-10+, are those who either know very little or nothing about LEDs but, in general, those who dismiss the technology do so because of perceptions that LEDs are

very expensive. Price perceptions range from R50 to R250 per light bulb, which understandably deters consumers across the board if they think one LED, is equivalent to between 5 and 10 incandescent light bulbs. LED identifiers that distinguish them from other types are “plastic covers”, “milky/tinted covers” and the “triangular shape” (more limited). Similarly to CFL, there are also perceptions that LEDs do not supply the same level of relative brightness as the incandescent 100W and 60W light bulb. This perception is influenced both by the low wattage of LEDs as well as introductory awareness driven by LED downlights where multiple light bulbs are required for the same brightness as a 100 W or 60W single light bulb.

“For me it is the first time I see them, I don’t know them” (4-5/B/KZN/ZX)
“I would look past it because I know it is going to be expensive” (8-10/Mix/G/E)

“They last long but I can’t afford” (3/B/EC/X)

“Its for people with sensitive eyes. Then you wouldn’t mind those because there is like a white tint over it” (6-7/C/WC/E)

Together with the qualitative data, what figure 11 below demonstrates is that LED purchasing is happening mostly from LSM 10/10+, which is a very small percentage of SA’s total population. This is the demographic that also purchases light bulbs in stores beyond general retail grocers (Builders Express, Lighting Warehouse, etc.), and in stores where assistance in the category is more accessible.

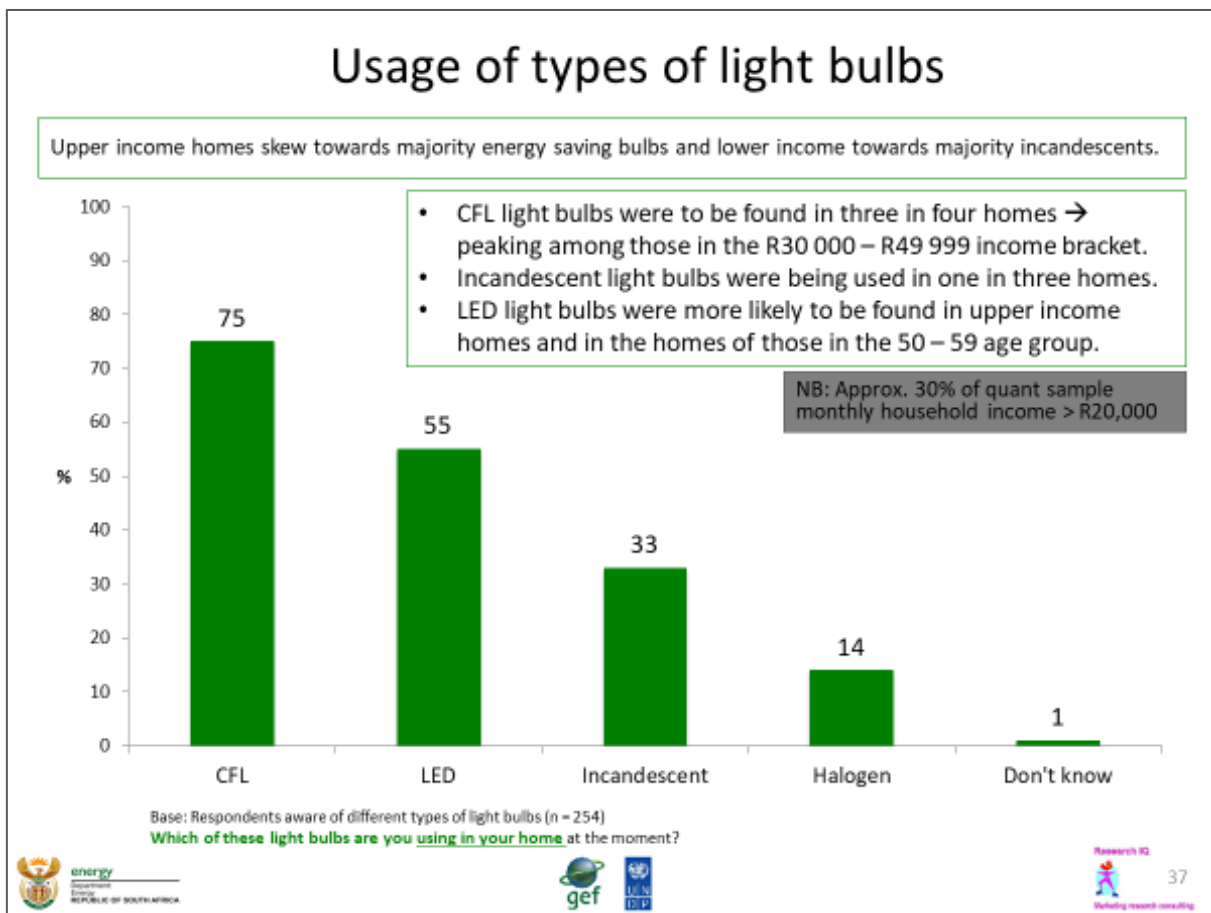


Figure 11: Usage of types of light bulbs

Furthermore, as the value proposition of LEDs measured in overall savings on lighting and electricity is experienced, consumers become more inclined to only purchase LEDs, switching to the technology as previous light bulb types end their lifespan.

“My bill dropped R300 and all I’ve changed is my lighting to LED” (8-10/Mix/G/E)

This is not the case yet for the majority below LSM 10, who whilst wanting to purchase CFLs more frequently, still largely buy incandescent and, sometimes, halogen. In other words, awareness and education is critical to convert the SA market towards LEDs, which ideally need to be available where consumers are most accessing the category – general retailers and spazas.

7 THE LED VALUE PROPOSITION TO LOW AND MIDDLE INCOME SA

The average stated electricity spend per month across the target market is highly variable, but within this, the majority estimate that 20-30% is consumed by lighting. As low to middle income SA is predominantly a prepaid electricity market, there is fairly high awareness of which appliance consumes the most electricity. As was shown in Section 4, Table 9, South Africans are economising on electricity through greater use of alternative energy sources and they are shifting their behaviour to reduce usage of inefficient appliances. The average electricity spend⁷ is shown in Table 12 below:

| LSM | Average spend per month | Average spend on lighting |
|-------|---|---------------------------|
| 3 | R100 – R300 [average of R10 per day] | R3-R4 per day |
| 4-5 | R250 – R1000 | 20-30% pm |
| 6-7 | R800 – R1300 | |
| 8-10+ | R300 (single person ⁸) – R3000 (family) | |

Table 12: Approximate average electricity spend vs. lighting spend per month

LSM 3-5 are substituting indoor lighting with candles when necessary, but in line with the rest of the market, they ensure there is enough electricity to keep lights on outside all night for security purposes. There is, therefore, very close monitoring of the number of units remaining in the meter to get through the night. In many homes, electricity is being topped up almost daily with R10 worth of units and depending on the time of month and total number of units purchased, one unit of electricity is costing this market between R2 and R3.

“If I keep the 100W bulb outside on all night it takes 1 unit of electricity” (4-5/B/WC/X)
“If I look at the meter then I can see when electricity went quickly with this one and slowly with the other” (3/EC/B/X)

⁷ As claimed to spend approximately per month by respondents in qualitative focus groups

⁸ This particular respondent worked in the sustainability field and intended to be off grid within the next year

The minimal income in these markets currently requires consumers to purchase the cheapest light bulbs possible, creating the demand for low quality incandescent light bulbs in the marketplace, regardless of regulations. Consequently, light bulbs may need to be replaced on a weekly to monthly basis in the poorest of areas, depleting consumers of the ability to save up for a CFL alternative. However, when they manage to purchase a CFL it eases the burden on their pockets significantly. Consequently, for the majority on the breadline (as opposed to those not monitoring electricity/lighting spend as closely), there is good understanding of the value of lifespan and energy efficiency of better lighting technologies.

*“We bought that two days ago and then last night when we put it on it just blew.” (6-7/C/WC/E)
 “I only buy the round ones when there’s no money – they don’t last more than 1 week” (4-5/KZN/B/ZX)
 “If you took a 100W bulb it can go for a while and 60W only lasts for a few days” (3/B/L/NS)*

As such, whilst the market, in general, stands to gain significant value from conversion to LEDs, it is the low to middle income market that will benefit the most through investing in LEDs. But while the incorrect pricing perception is the biggest barrier to up-take of LEDs across the market, awareness, available income and accessibility are further barriers restricting category entry in the low-income markets. As observed from some of the field pictures below in Figure 13, incandescent, halogen and CFL light bulbs are more commonly found than LEDs – only one out of 3 retail stores had stock of LEDs.

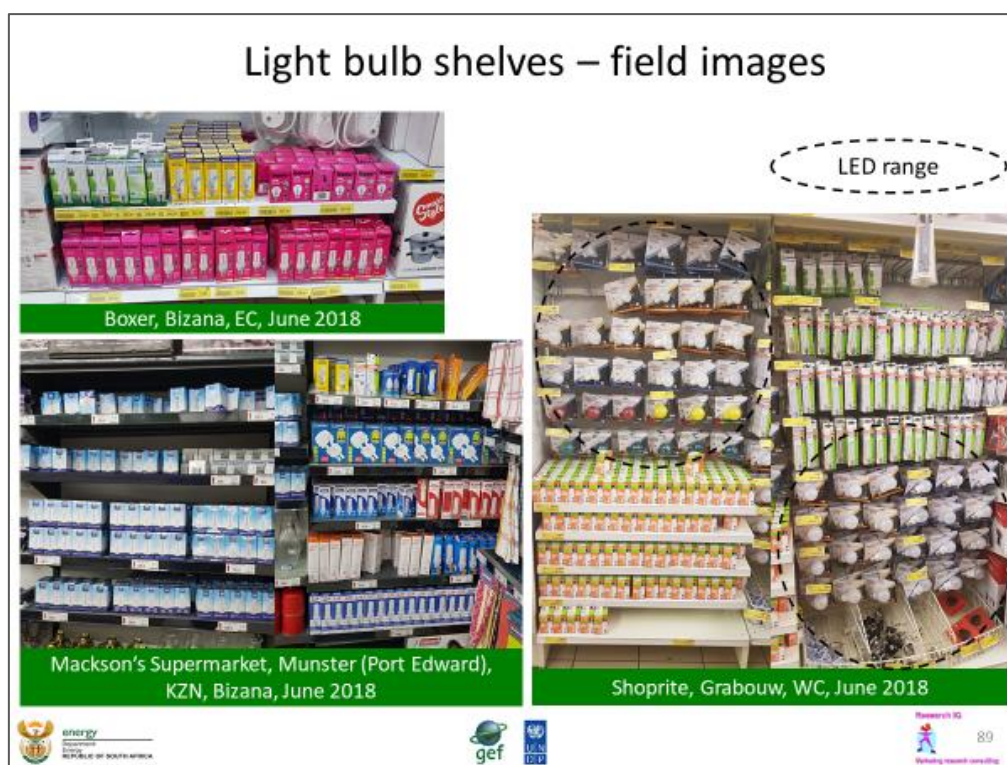


Figure 13: Light bulb shelves in retailers, June 2018

In summary, from current perceptions and behaviours around lighting, awareness and educational campaigns to encourage up-take of LED need to focus on the following:

- Introducing LED technology as superior to CFL in both life expectancy and energy efficiency;

- Creating awareness that LEDs are cheaper than CFLs for mainstream in-home lighting needs;
- Creating awareness that LED options deliver the same level of brightness as current incandescent and halogen technologies;
- Together with a retail distribution strategy, ensuring that LEDs are available in major national retailers and in both urban and small outlying towns.

8 PURCHASE DRIVERS OF LIGHT BULBS

Spontaneous and unaided responses in the focus group discussions demonstrated that, at an overall level, there is poor market understanding of the different types of light bulb names, the technologies themselves as well as light output factors. Respondents, in this context, were asked how they would explain to someone what kind of light bulb they needed to purchase on their behalf. Thereafter, they were asked to evaluate a variety of light bulb packs to explain indicators used, as well those they did not understand. This provided an indication of how familiar or not consumers were with the product information provided on light bulb packs. Many were honest in saying they hardly ever looked at the pack in detail and selected their ‘usual’ pack based on familiarity and habit.

When the drivers are prompted through the quantitative questionnaire, i.e., a list of key elements provided by product information on pack, there is a slightly different order of response, bearing in mind these were prompted responses rather than the spontaneous responses mentioned in the focus groups, however, the ‘cluster’ of key drivers remains the same.

The most common and universal first spontaneous driver mentioned is **fit** – whether a ‘screw’ (winding) or bayonet/‘pin’ (‘clip on’, ‘ears’, ‘hooks’, ‘stick’) is required. As needs for light bulbs increase through the size and sophistication of applications, there is also a requirement for big or small/skinny globes which have various different size bases.

“I always seem to buy the wrong size” (8-10/Mix/G/E)

Type of light bulb – most spontaneously mentioned is ‘ordinary’ or ‘energy saver’, followed by ‘LED’ – suggests awareness that different technologies, which use varied levels of electricity exist in the market. In the prompted survey list, both ‘type of light bulb’ and **‘how much electricity it uses’** emerged as the two single most important factors when purchasing light bulbs. Type of light bulb is also synonymous with what respondents in the qualitative research referred to as quality, which is measured by **how long a light bulb lasts**. This emerges as an additional important factor in the quantitative survey.

“I go into Pick n Pay and buy what looks like Frankenstein and which screws in. Get the cheapest and that’s it” (8-10/Mix/G/E)

“I buy a globe called energy saver” (9-10+/KZN/Mix/E)

“I buy the long one not the short one [CFL]” (4-5/B/WC/X)

“I buy a globe from LED ... the plastic one” (3/B/L/NS)

“I would love to buy quality but sometimes I can’t afford it” (4-5/B/WC/X)

Whilst **price** is not the single most important factor in upper income purchase decisions, it is a strong driver in low and middle-income markets where affordability frequently determines choice. But, even in upper income markets, some frequently select the cheapest light bulb.

“It depends on how the budget looks, because energy savers, LED, Phillips are more expensive” (9-10+/KZN/Mix/E)

“When you have enough money, you want the new ones that don’t finish quickly” (4-5/KZN/B/ZX)
“When you get there and 100 is cheaper than 40, that’s what you take. Price is the most important” (4-5/KZN/B/ZX)

Finally, purchase is driven by **watts as an indicator of brightness** determined by the room or area in which it is to be used. As previously mentioned, outside areas need very bright light for security, followed by a brighter light bulb for kitchens and bathrooms and a duller light bulb for bedrooms. The majority across the target market use level of wattage on pack as an indicator of light bulb brightness, i.e., high watts (very bright) vs. low watts (dull).

The lesser-mentioned drivers of purchase were colour rendering, a guarantee of quality, brand, shape of light bulb and number of lumens.

In the qualitative discussions there were only a few mentions of the tone or mood required by lighting as related to **colour rendering**, skewing towards LSM 8-10+ and aligning to the quantitative survey results.

“I want white crisp light, not yellow light” (8-10/L/E)

Likewise, purchase using **brand** as an identifier emerges predominantly in upper LSM (both qualitative and quantitatively) with highly limited mention and mostly when purchasing LEDs. What this suggests is that as consumers engage more in understanding lighting technology, their awareness of product information increases to guide selection. Brands mentioned include Eurolux, Osram and Phillips.

“Eurolux 14W bayonet ... have been using Eurolux for a long time and I save more than using the curly ones” (8-10/L/E)

Shape of light bulb is not spontaneously mentioned as a purchase driver, yet in discussions around the different types of light bulbs, consumers use shape subconsciously when trying to find the light bulb on shelf they are familiar with and habitually purchase. This accounts for the confusion between incandescent and halogen technologies, as well as immediately identifying CFLs on the shelf. Respondents in the group discussions frequently used their hands to ‘draw’ the CFL shapes in the air as a descriptor of the technology. It is also evident that as awareness of LEDs grows, they are being identified through their ‘V’ or triangular base shape and plastic covers.

Importantly, there was no mention in the group discussions of **Lumens** and a very low percentage in the quantitative results. This contrasts to the high mention of using wattage on

the pack to determine brightness and reveals why, to a large extent, CFLs and LEDs are perceived as unable to deliver the brightness required by the target market.

As such and through substantiation in discussion, there is overall a very low engagement with light bulb packaging. Firstly, the information is difficult to read as font size is so small but more importantly, many consumers do not understand what the elements mean. Even if familiar with the element’s presence (i.e., wattage, ‘warm/cool’ white, energy efficiency label) most do not understand the value of the information in directing a purchase that will satisfy their lighting needs.

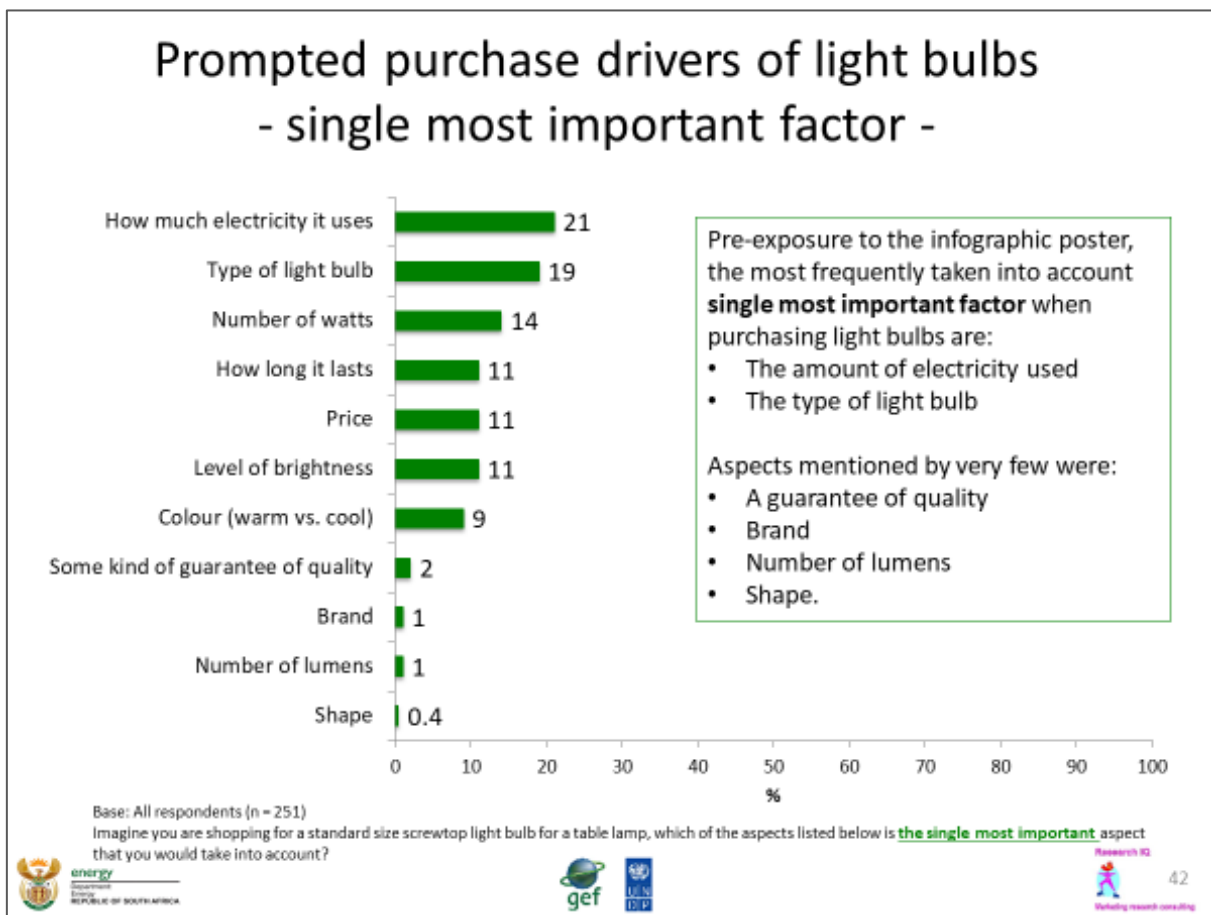


Figure 14: The single most important factor driving light bulb purchase

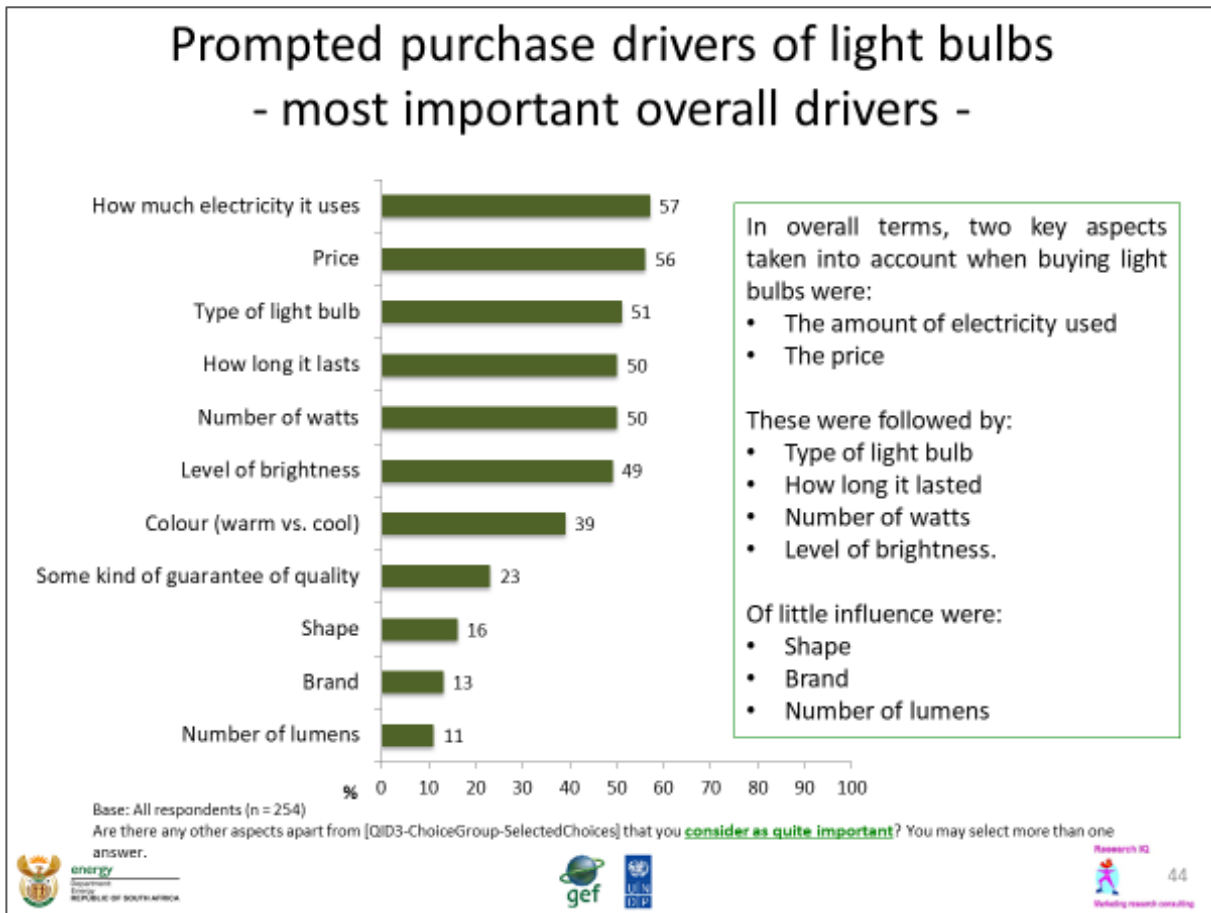


Figure 15: Other important factors driving light bulb purchase

Consequently, the key learning is that despite light bulbs being appliances that contribute significantly to overall electricity costs, they fall within a low engagement category, characterised by a lack of knowledge and, therefore, shopped at a highly habitual level. An awareness and educational campaign needs to establish accurate baseline category knowledge first, before the value proposition of energy efficient technologies will be understood and within this, LED specifically. Without this knowledge, consumers will revert to type and continue to mainly purchase either incandescent or CFL light bulbs.

“Sometimes I take about half an hour because I look at different prices and I look at all the watts and I don’t understand that” (9-10+/KZN/Mix/E)

9 REACTIONS TO VALUE LABELS

9.1 Key insights leading to infographic value label design

Initial concepts were visually off-putting and did not tell a story to engage in the learning process, however, through explanation of the material’s content and intent, awareness and knowledge levels shifted, indicating a desire to learn more about lighting to make better energy efficient lighting choices.

Initial reactions confirmed that the baseline knowledge of lighting technologies across the target market, up to and including some LSM 10+ respondents, is immature. As such, the content of concepts first tested in the research was too technical and the layout was cluttered and difficult to understand. For the majority, the journey was synonymous with that of trying to read a light bulb pack.

“It is more like buying a car and somebody telling me about what the carburettor does. I don’t really care, I just want to drive.” (8-10/Mix/G/E)

“It looks like I need physical science or maths (to understand this).” (6-7/C/WC/E)

“I would like to think I am learned person but when I look at it, it is just confusing” (6-7/C/WC/E)⁹

In such a low engagement category, an unsuccessful value label that does not engage interest, will not shift consideration away from familiar ‘type’ choices, which for the majority of the target market are incandescent or halogen light bulbs, selected for price and brightness or CFLs as the energy saving option.

Important knowledge gaps that the value label needs to address came to the fore:

1. High familiarity and frequent engagement with incandescent technology has established a mental conceptual framework that brightness equates to the number of watts. Therefore, the value label needs to educate on Lumens for consumers to believe that a low watt LED light bulb can deliver the same level of brightness.
2. Similarly, high wattage incandescent (and halogen) light bulbs are associated with light bulb heat and ability to ‘warm a room’, i.e., referencing colour temperature as ‘warm’ vs. ‘cool’ white results in literal take-out, preventing majority from understanding colour rendering as mood/tone. Therefore, the value label needs to build both awareness and relevance of colour rendering, measured by Kelvins.

These insights, together with those gleaned from perceptions and behaviours in the category, led to the development of the infographic value label. The design journey is demonstrated below in figure 16, which outlines the various iterations in design from original value concepts to the new infographic value label (Concept N) that emerged through the first five focus groups of the Stage 1 qualitative research.

⁹ This respondent was a senior school teacher

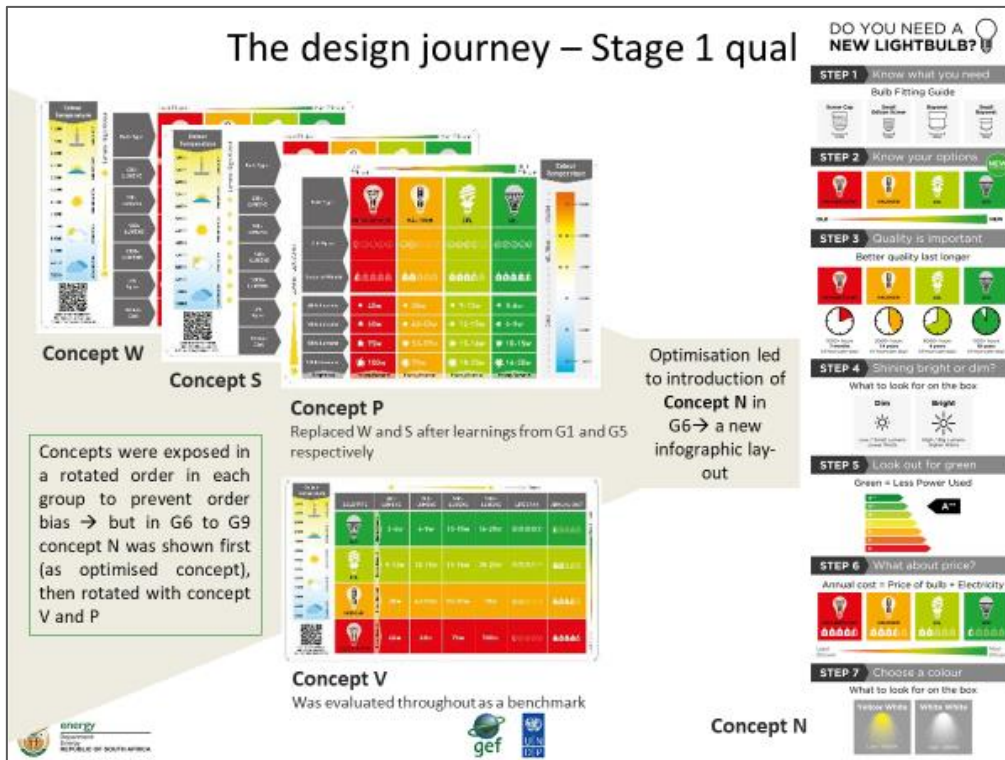


Figure 16: The design journey through Group 1 to Group 5 of Stage 1 qualitative research

9.2 Performance of the first infographic value label Concept N

In the remaining Stage 1 qualitative research (Group 6 – Group 9), Concept N was successful in spontaneously engaging attention and raising awareness of LEDs. In particular, it helped the following new awareness and knowledge emerge for many:

- There are different fitting sizes for light bulbs;
- New lighting technologies are available;
- Higher awareness of LEDs and that the LED value proposition is a better option.

But, the following key message was still coming through:

- The brightness of a light bulb is dependent on its level of watts, i.e., the value label failed to educate on Lumens. Consequently, low LED light bulbs would be interpreted as having very ‘dim’ lighting capability and would be overlooked as not satisfying lighting needs. On the flip side, the perceived expense of high wattage LED light bulbs would continue to deter engagement with the category, even if, in reality, the mainstream target market does not need speciality light bulbs such as these.

At this point in the research, it was clear that if the most important underlying misunderstanding in the marketplace went unaddressed, it would prevent widespread adoption of LED technology.

Whilst Concept N did not drive further understanding of colour rendering, the need for tone/mood created through lighting was not a high priority or frequently mentioned need in the mainstream. Whilst important for some LSM 10/10+ (as evident in Figure 15) there seemed to be some understanding of how to determine this already on pack. For research purposes, the concept needed to be legible on an A4 layout and the recommendation was made to exclude further testing of colour rendering at this point – it could be redesigned and introduced for final production. It was more a priority to address the Watt/Lumen issue.

Again, using insights from Stage 1 qualitative research, as well as collaborative input from all stakeholders and the graphic designer, the infographic value label was re-designed and put forward for testing in Stage 2 quantitative online survey.

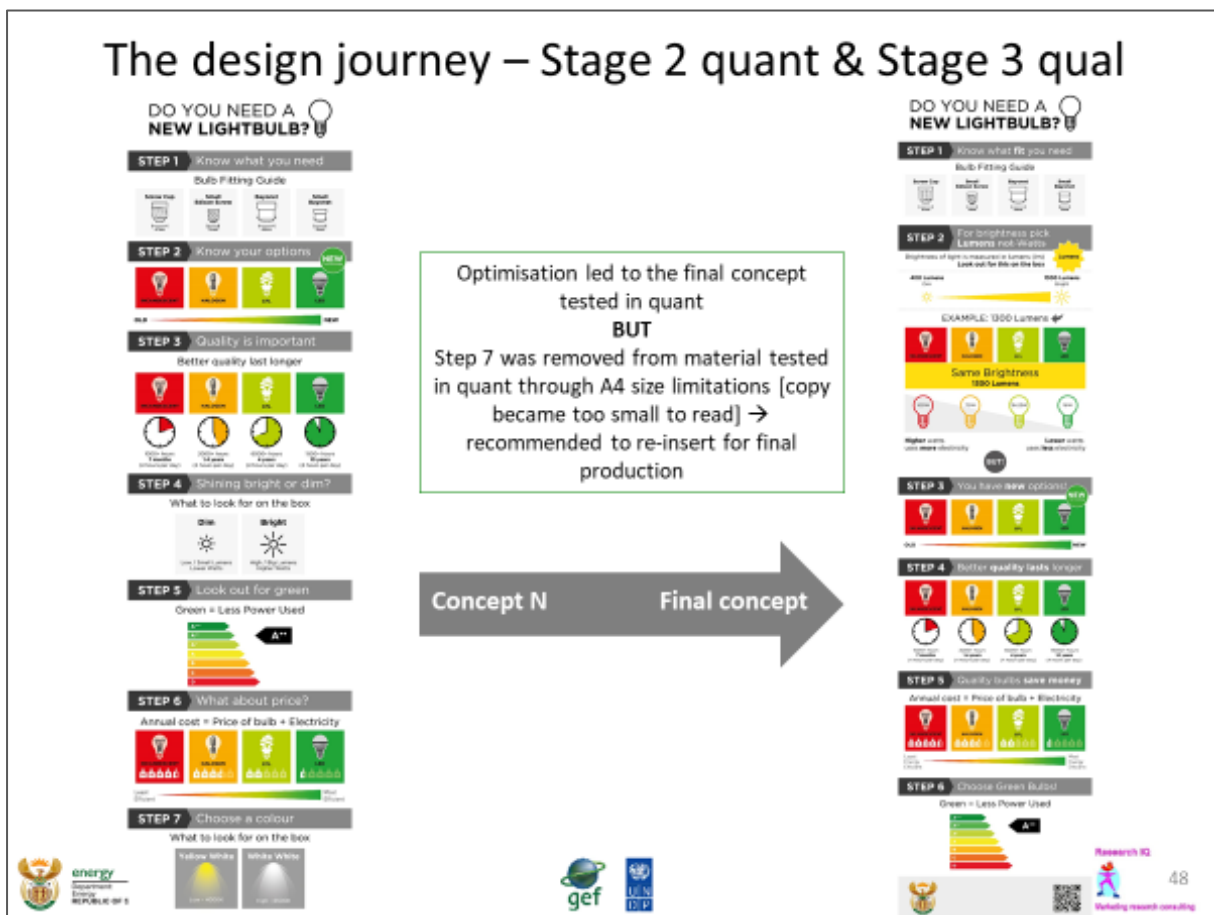


Figure 17: The design journey resulting in revised infographic value label tested in Stage 2 and Stage 3 research

9.3 Overall performance of the revised infographic value label

Overall responses to the final infographic label were very positive as demonstrated in Figure 18 below with 91% agreement that the information displayed in the poster was useful, especially to younger respondents, females and those in the lowest income group. Further, most found the information easy to understand and informative.

Younger (16-34 years) and female respondents in particular, strongly acknowledged they learnt about light bulbs, lumens and wattage, encouraging trial of different light bulbs. Just in

reading through the label the first time, commentary from qualitative Stage 3 respondents yielded a similarly high level of usefulness. The layout in a sequential, logical story format built the necessary steps through which to educate around lighting technologies and relevant indicators.

“So why was this not done before ... you only need to read it once then next time you come back you’ll know.” (9-10+/KZN/Mix/E)

“Interesting information - very informative - like it’s telling a story that guides you.” (6-8/G/Mix/E)

“Tells you to use the one with a green label.” (4-5/G/B/Z)

Whilst some younger respondents (23%) found the information provided too technical, typically this is a market that prefers not to read and absorbs information better through video/audio delivery, i.e., YouTube. This suggests the opportunity to engage an emerging youth market through video content available through the <https://www.savingenergy.org.za> website.

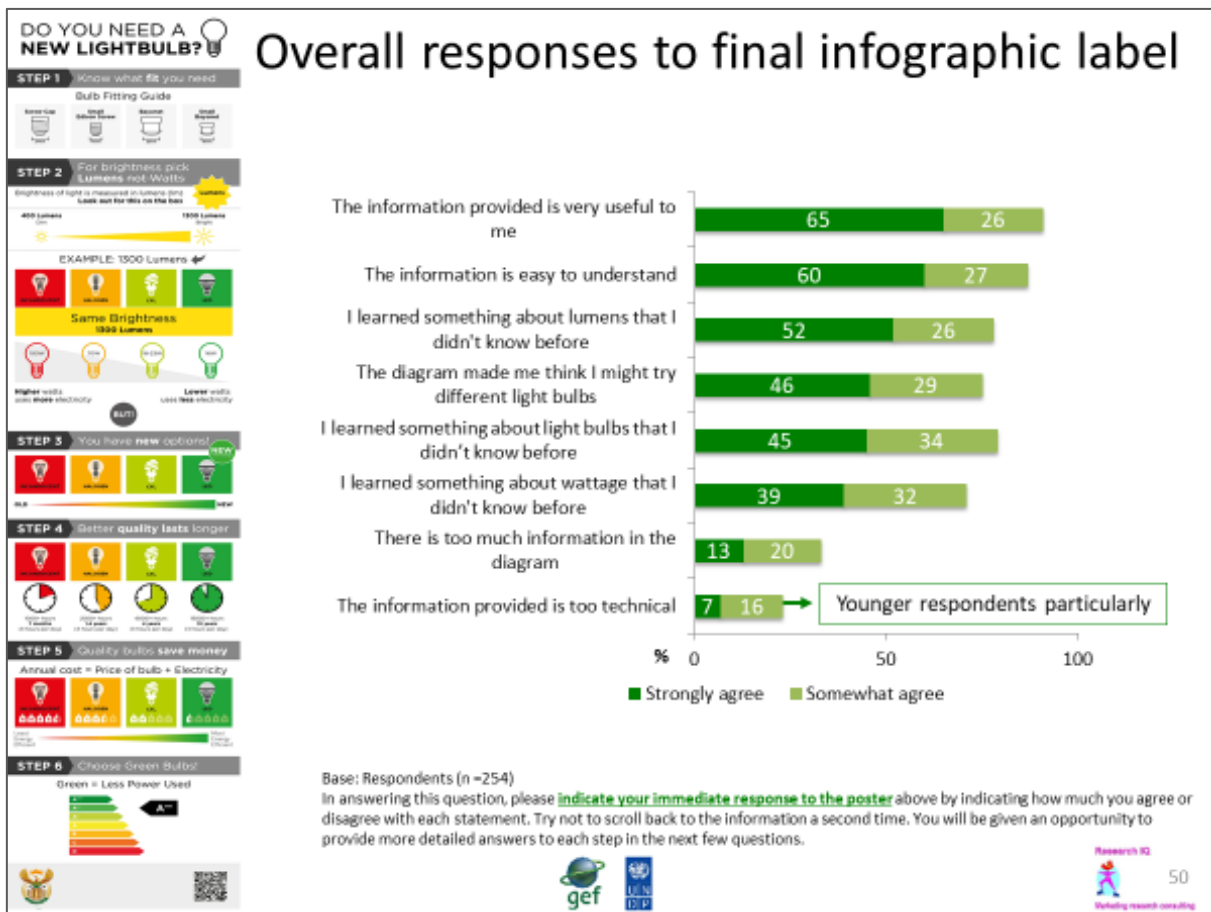


Figure 18: Overall responses to revised infographic value label

9.4 Performance and impact of each step of the infographic value label

The following Figures 19 to 24 evaluate the impact of each step of the infographic value label, presented in sequential order. Findings from both Stages 2 and 3 are highly consistent and, where appropriate, additional meaning and insight from the qualitative focus groups is included.

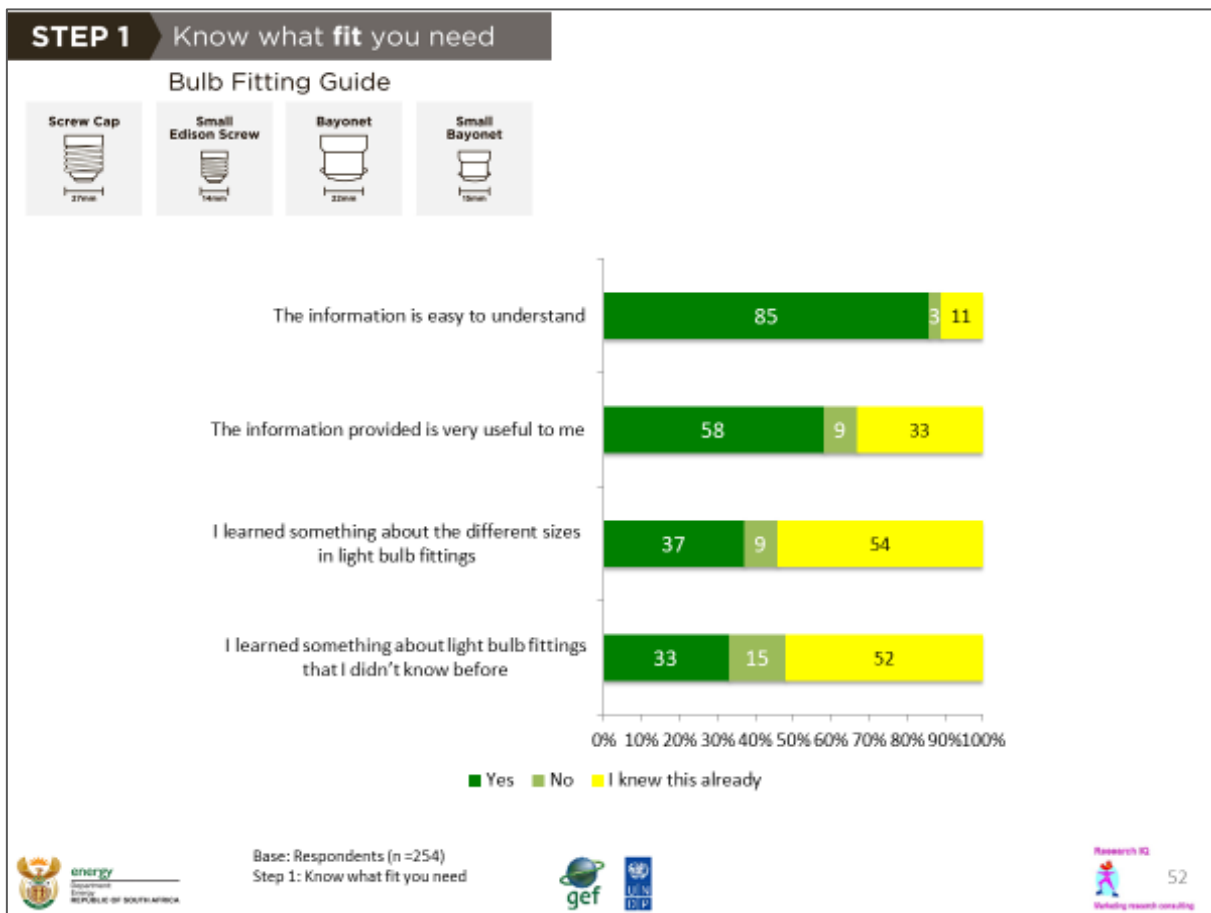


Figure 19: Overall impact of Step 1

Approximately one in three respondents claimed to have learned something both about the different sizes in light bulb fittings as well as light bulb fittings *per se*. The information about light bulb sizes and fittings in Step 1 was already known by at least one in two respondents.

The information was especially pertinent to young (16–34 years), females and those in the lowest income brackets, while the converse was true for older (35 +years), males and those in the higher income groups.

“I just knew of the screw type, I didn’t know there was a bayonet.” (6-8/G/Mix/E)
“I didn’t know with screws there are big ones and small ones.” (8-10/L/E)

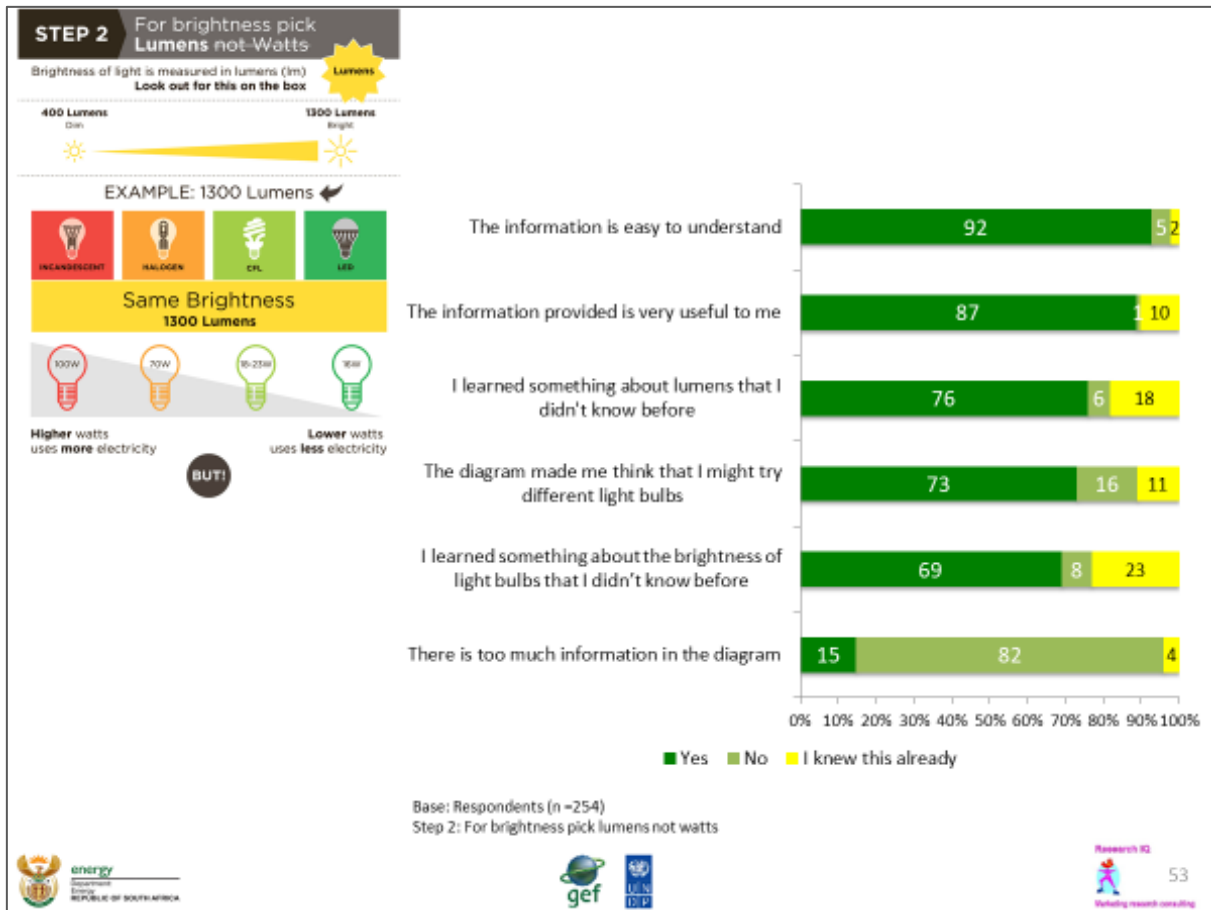


Figure 20: Overall impact of Step 2

Step 2 was easy to understand, useful and informative about lumens and the brightness of light bulbs. Unlike Step 1, much of this information was not previously known. The trial of different light bulbs was encouraged. Again, value was most evident amongst younger, female and lowest income group respondents.

Discussion in focus groups indicated that whilst valuable, up to half of some groups (low income skew) needed further explanation to understand fully. Some grasped the information quicker than others, which seemed a consequence of literacy levels, age and previous experience in the category. With repeat exposure to the information as well as support by additional campaigns and discussions with friends and family, the full meaning over time is likely to ‘trickle down’.

“It’s showing me I’m making the wrong decisions that I’m choosing watts, not, what’s this word? Lumens. I’ve never looked at the lumens.” (6-8/G/Mix/E)
“I thought Lumens was a brand name.” (6-8/G/Mix/E)
“If you say low wattage you think not so bright.” (9-10+/KZN/Mix/E)

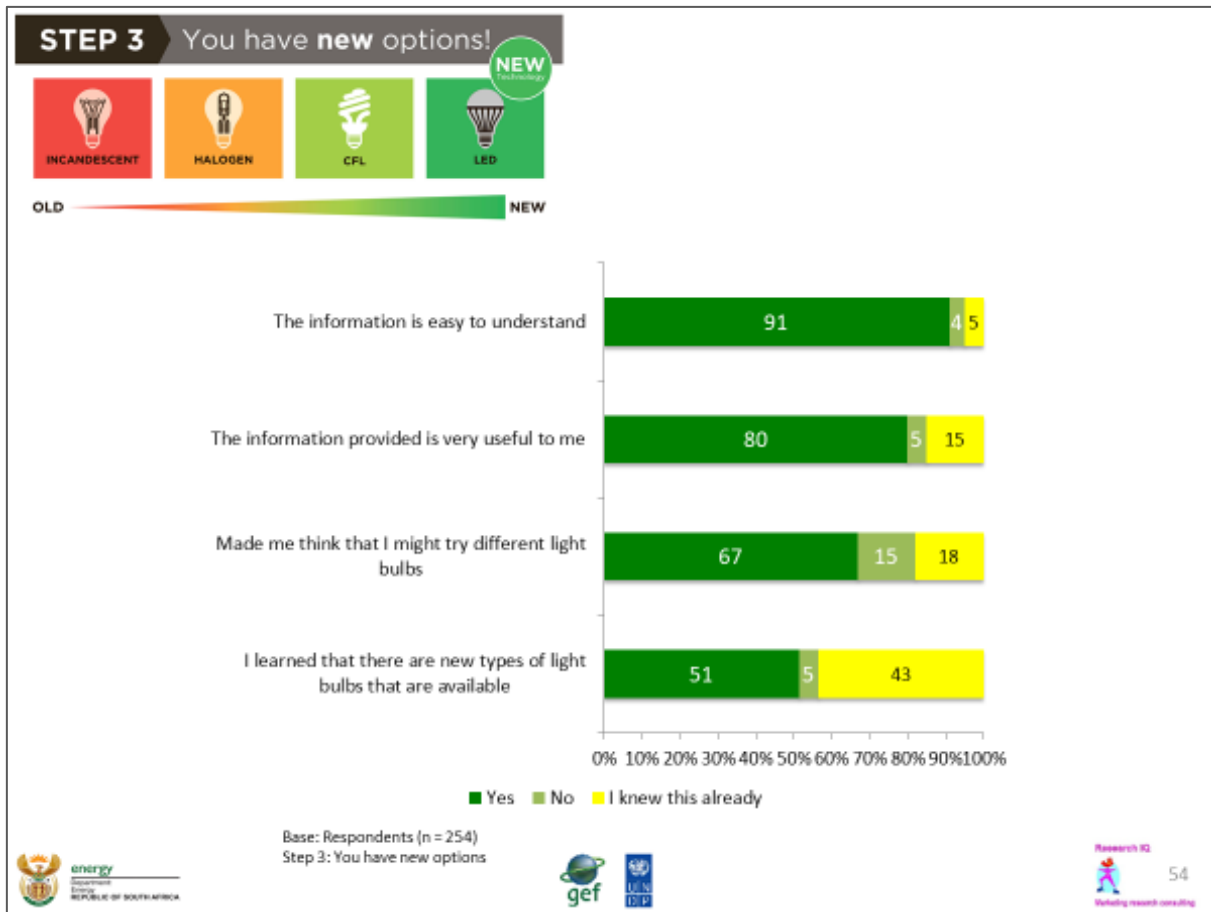


Figure 21: Overall impact of Step 3

The information in Step 3 was found to be useful and easy to understand, especially for younger and female respondents, and those in the lowest income group. It also encouraged the trial of different light bulbs, particularly amongst those who like to keep up to date. Overall, Step 3 demonstrates that new options in lighting suggest an evolution and innovation in lighting technology.

“It’s always good to try new things!” (6-8/G/Mix/E)

A fair number of respondents [LSM 4-7 skew] commented that they did not know about LEDs before whereas many said they did not know that the ‘old’ light bulbs were called incandescent. Respondents commenting they previously had not known the difference, confirmed the previous hypothesis regarding market confusion between incandescent and halogen.

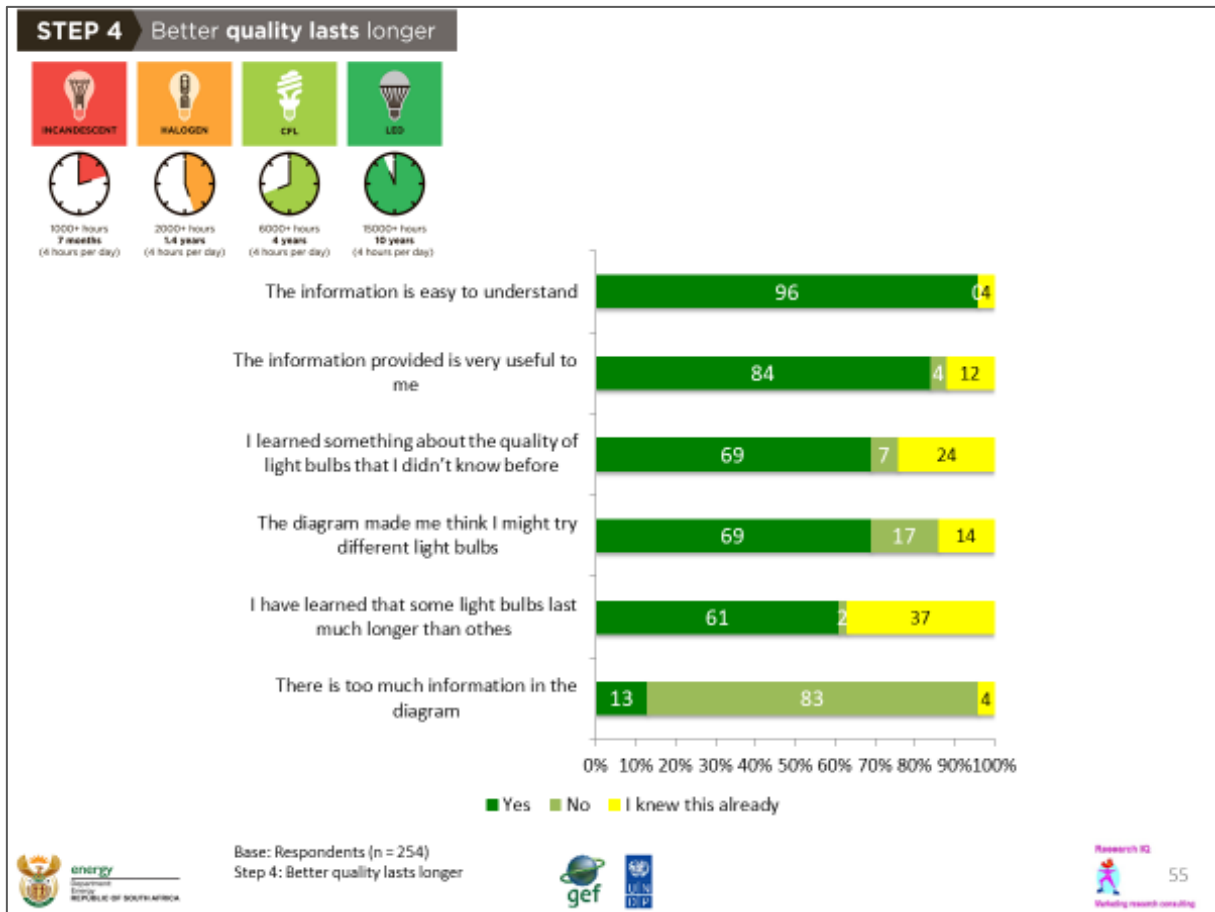


Figure 22: Overall impact of Step 4

The information in Step 4 was considered easy to understand, useful and informative by most. The majority also considered trial of different light bulbs. Again, the importance of the information was apparent among younger people, females and those in the lowest income group. Older (60+ years), males and those in the upper income groups were more likely to claim that they already knew this information.

In the qualitative focus group discussions Step 4 emerged as one of the most impactful steps to support lifespan as a key purchase decision factor of light bulbs.

“It gives you hours you can use it for and that can last up to 10 years.” (4-5/G/B/Z)

“Lifespan, I won't be buying light bulbs every week.” (6-8/G/Mix/E)

“From the time you need to replace that LED at you've already gone through 12 incandescents.” (6-8/G/Mix/E)

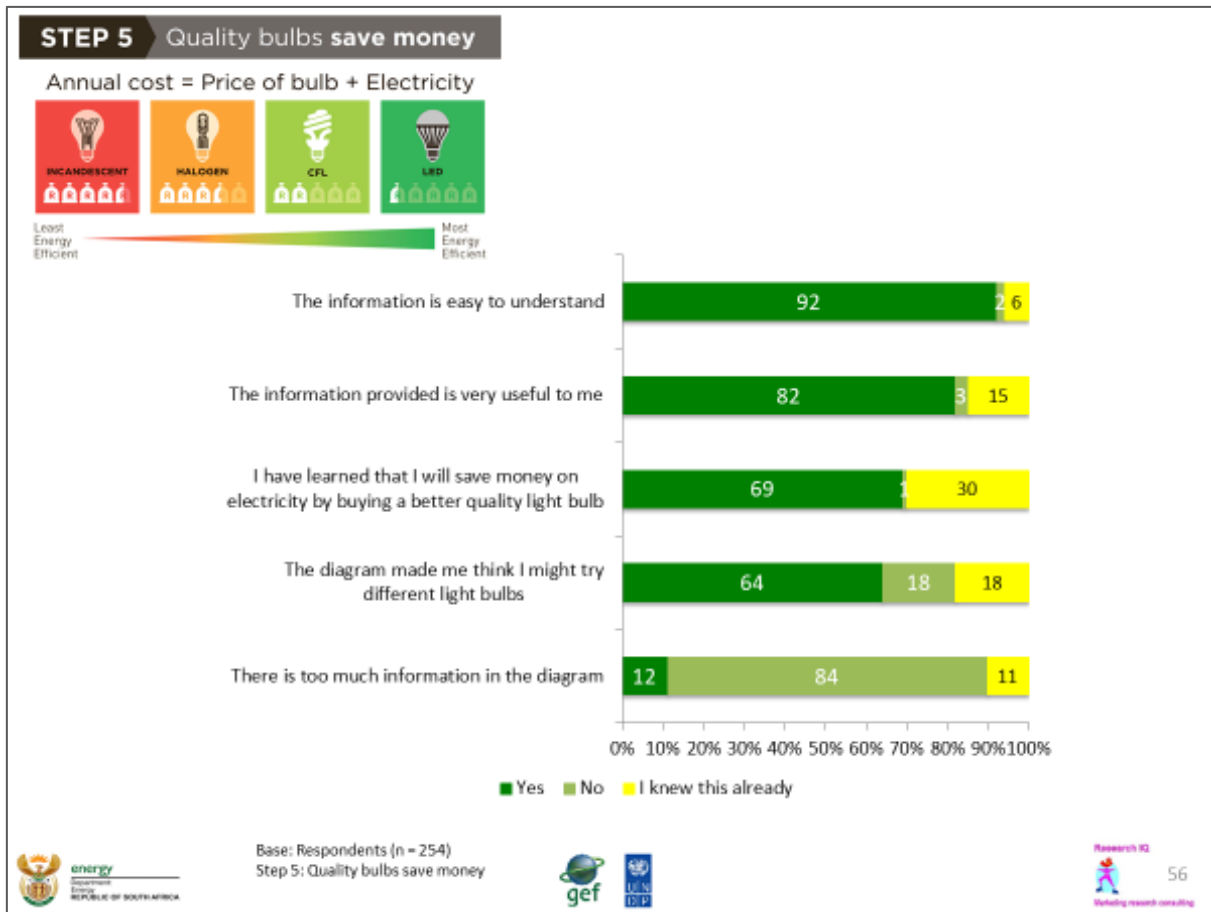


Figure 23: Overall impact of Step 5

The usefulness and ease of understanding Step 5 was agreed by most. Step 5 also informed most respondents that money would be saved by buying a better quality light bulb, which could persuade them to try different light bulbs. The information was more relevant to younger people, females and those in the two lowest income groups.

Together with Step 4, Step 5 firmly establishes the value proposition of LED [and likewise diminishes that of incandescent] – taking both the cost of the light bulb and saving on electricity into account. Even without knowing that LED pricing has reduced, consideration of LED next time is much stronger.

“This one is expensive, and LED is more efficient.” (6-8/G/Mix/E)

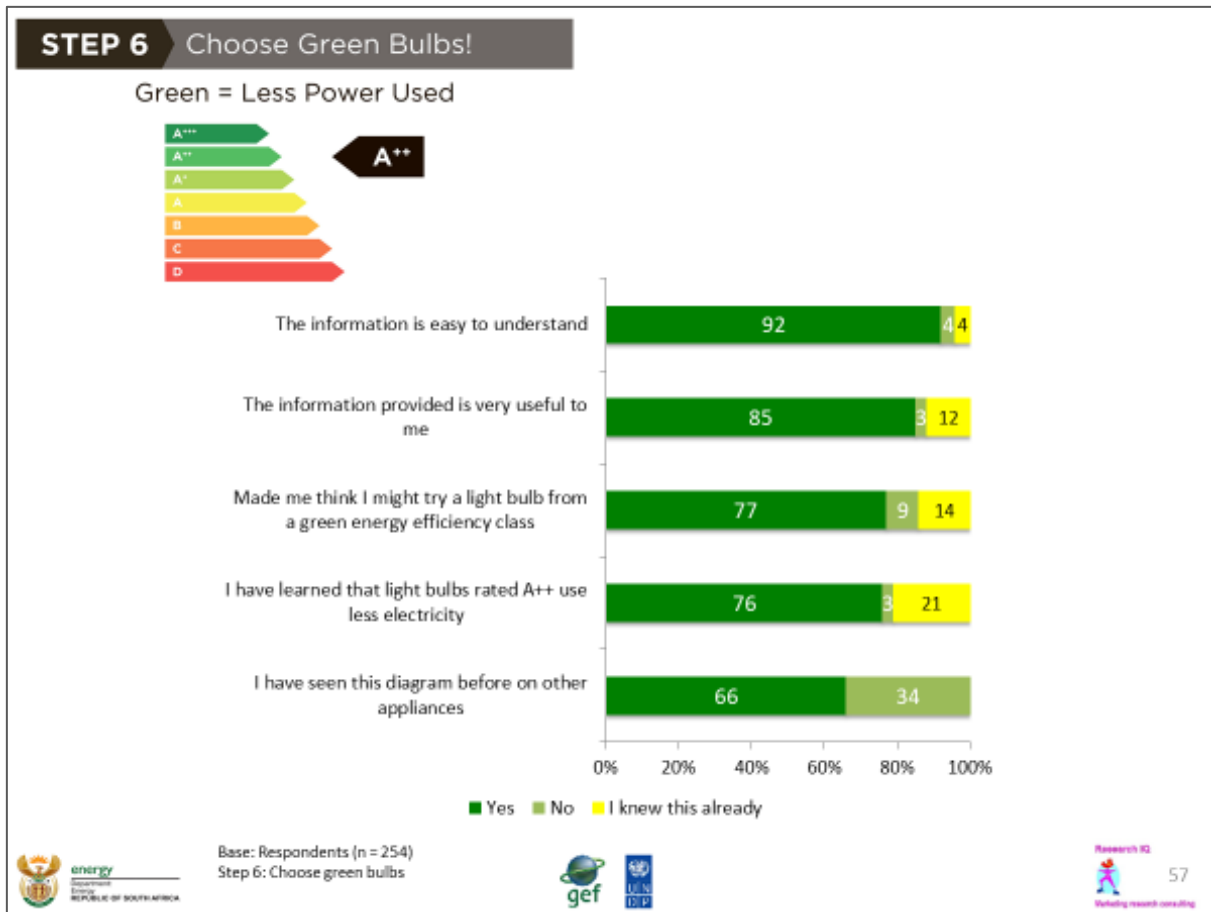


Figure 24: Overall impact of Step 6

Step 6 achieved its purpose with easy to understand and useful information - that light bulbs rated A++ use less electricity. Three in four would be prepared to try a light bulb from a green energy efficiency class. One in three respondents were not familiar with this diagram on other appliances. This figure was above average among older respondents (60+ years) and females.

Across most of the focus groups, one or two respondents per group recognise the EE label, with almost the entire LSM 9-10+ group in KZN familiar with it. Some have seen it previously on light bulb packs, but recognition currently stems mostly from association with fridges. However, the majority had not assigned any value to the EE label through not understanding its meaning.

Whilst thought to be effective for most heavy energy using appliances, the symbols can be confusing and need a referenced explanation: for example, the symbol of a tap is understood to be water but could apply to a geyser, dishwasher or kettle; the symbol of dishes could apply to a dishwasher, stove, fridge or microwave. Educating around the EE label, particularly on commonly purchased appliances across the market – such as light bulbs, fridges, stoves, geysers –the meaning of individual symbols needs to be considered, as well as the energy efficient ratings. It is also important that shop assistants understand these symbols when selling appliances to help consumers understand the label.

In summary, the findings indicate that, not only does the EE label encourage consideration of light bulbs in the green efficiency class, but it also encourages consumers to use energy efficiency as a further purchase driver in selecting other appliances. This step effectively serves both the lighting category and the appliance category at large.

*“D is bad, A is safer, more efficient but yellow is still a saving.” (6-8/G/Mix/E)
 “I’m happy about knowing about the sign on the fridge because I was not informed about it when I bought the fridge.” (4-5/B/KZN/ZX)*

9.5 Overall impact of the infographic value label on purchase drivers in the category

The infographic successfully communicated that the most important overall aspects to consider in a purchase decision are:

- The amount of electricity used by light bulbs;
- The different types of light bulbs available;
- The number of lumens.

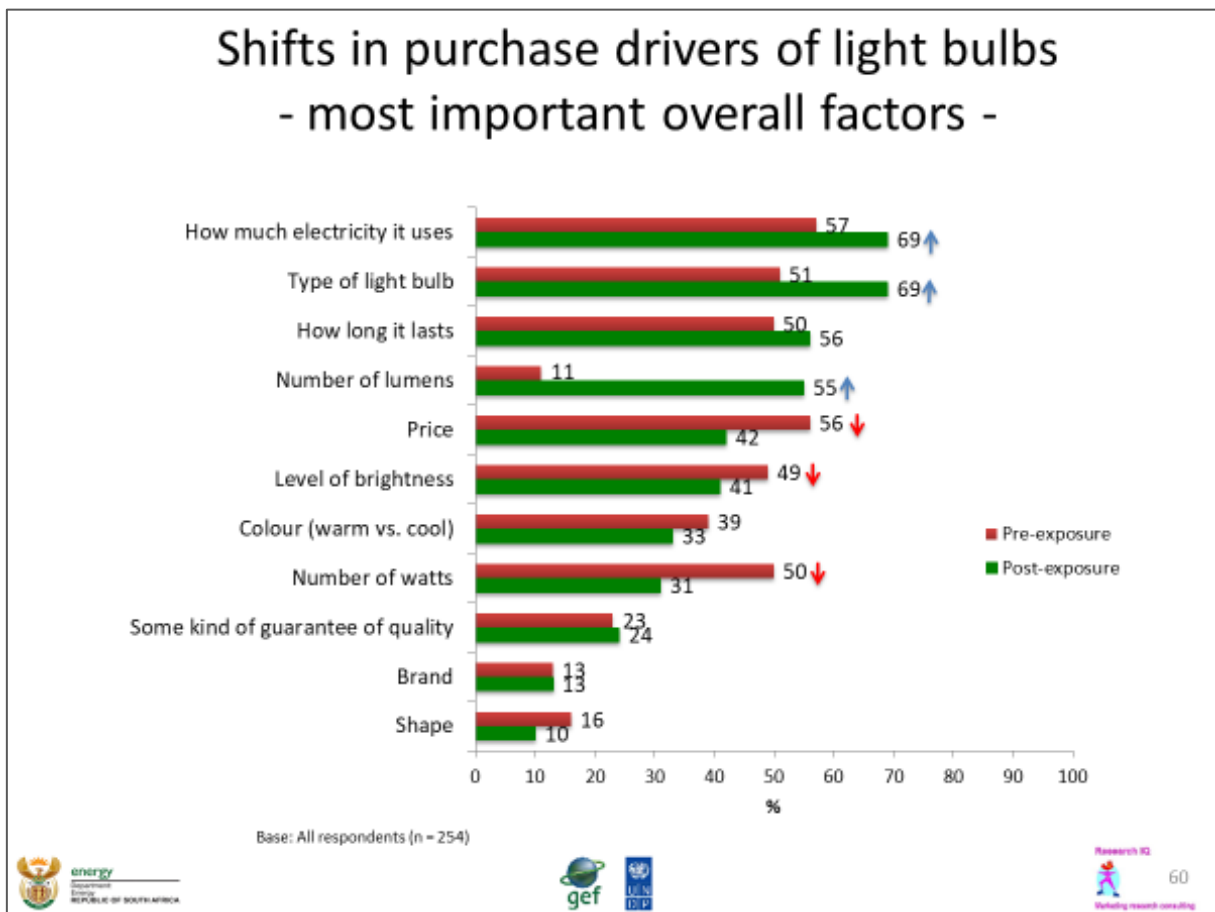


Figure 25: Most important overall factors driving purchase decision of light bulbs (post exposure to infographic label)

The infographic also successfully reduces the importance of:

- The number of watts;
- Price;
- Levels of brightness.

“I thought that I did know but I know so much more now.” (9-10+/KZN/Mix/E)
“Buy expensive bulbs to save money in long run - I wouldn't have to pay R5 every day.” (3/EC/B/X)

Consequently, the infographic establishes a new benchmark of ‘Lumens’ through which consumers can choose the appropriate light bulbs to suit their range of lighting needs. Knowing how better to shop the category for brightness by using Lumens particularly increases the overall value of LEDs, thus making price less of a driving factor.

In Figure 26 below, approximately four in five respondents claimed to be more likely to make a different choice in the type of light bulb bought in the future, with LED light bulbs being the most popular choice, mentioned twice as many times as CFL light bulbs. The choice of LED light bulbs was almost unanimous among those in the highest income group.

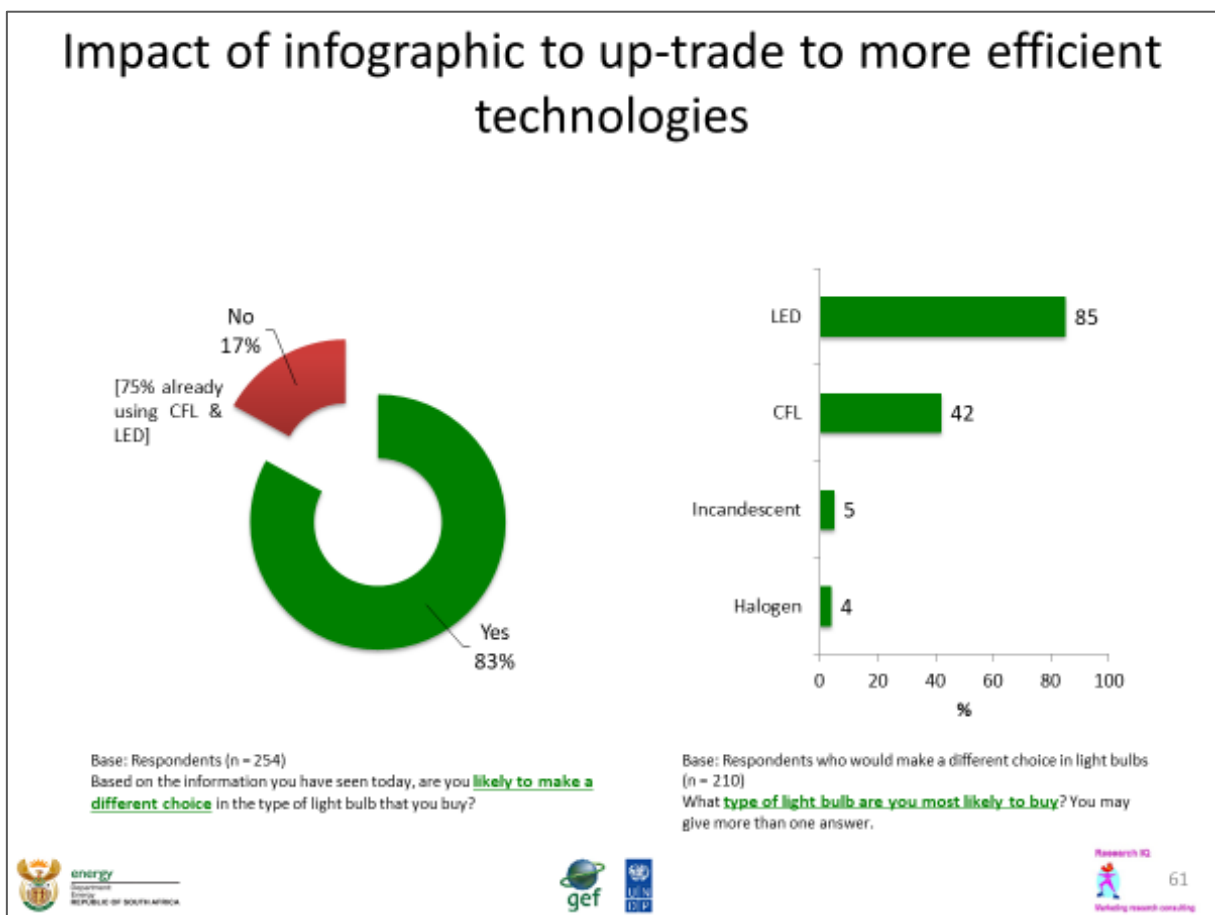


Figure 26: Impact of infographic value label to influence up-trade to LED

As much as the overall LED value proposition is better understood than pre-exposure to the infographic value label, perceptions of LED pricing remains a barrier for many in the target market.

“The saving that you are going to get on the LED lights, whether it is annual or whether it is monthly you are going to save. It is just much more expensive but at the end of the day there will be more money in your pocket.” (6-7/Mix/WC/E)

As Figure 27 demonstrates, an average price of R46.99 was expected in a major retailer for a standard 6W LED light bulb, while a considerably lower average price of R35.73 was the price the market is prepared to pay for the same light bulb. This suggests on average a R11 gap between what consumers think it costs and what they are willing to pay. The relatively high levels of ‘don’t know’ (33% and 21% respectively) give further indication of how unfamiliar the market is in general with LED pricing. As previously reported, those not purchasing LED believe the pricing is out of their reach whereas those currently purchasing LED claim the technology is now more affordable.

Unless communication addresses the pricing barrier overtly, it is likely that low to middle income markets will up-trade to CFL (which is more expensive!) rather than LED, thinking the former is more in reach.

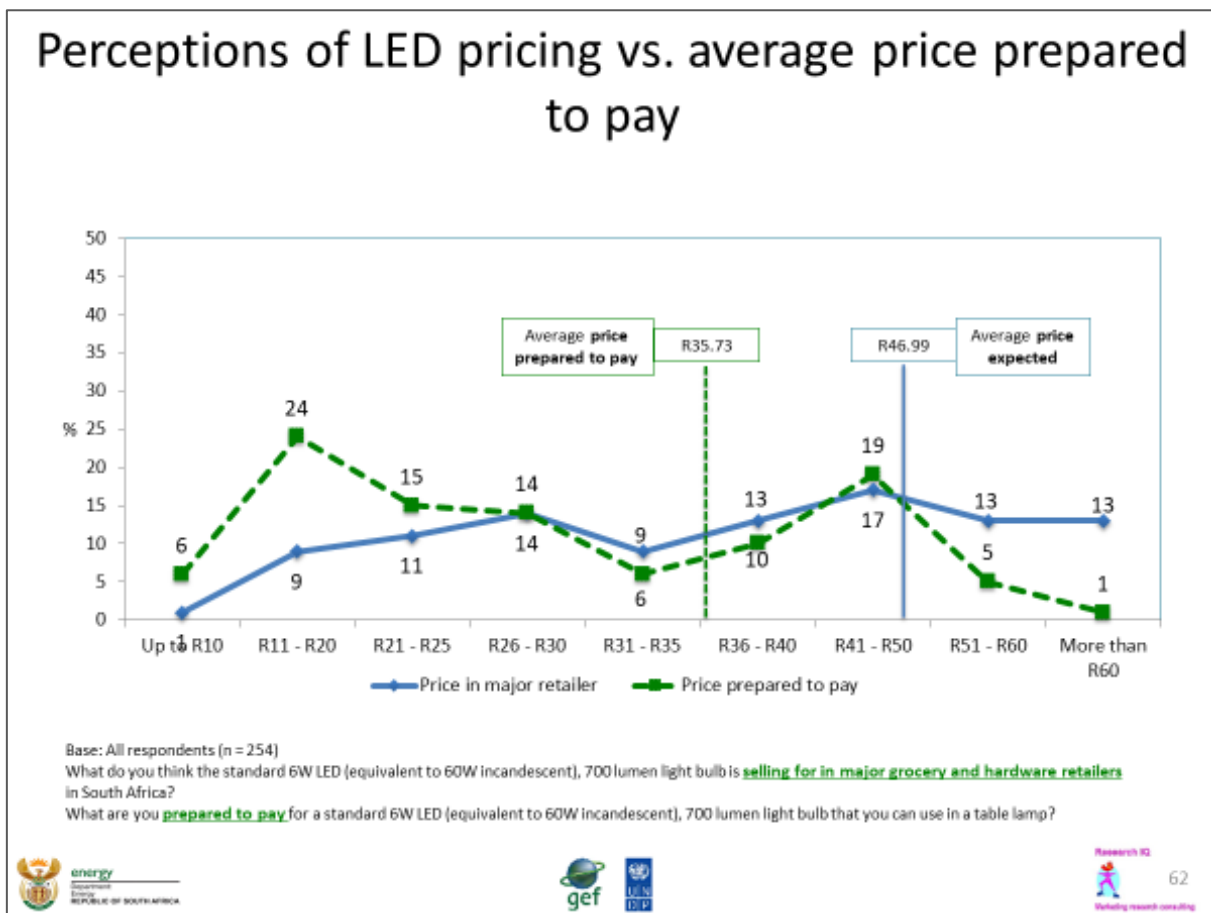


Figure 27: Perceptions of LED pricing vs. average price prepared to pay

Furthermore, as Figure 28 below shows, seven in ten respondents were not aware that the sale of incandescent light bulbs had been forbidden in South Africa. Awareness of the banning of sales of incandescent light bulbs was above average among older (60+ years) respondents and those in the R30 000 – R49 999 income group.

Without communication regarding the strategy to remove incandescent light bulbs and considering that majority of low to middle income respondents still purchase in this category, there may be significant resistance to being ‘forced’ into a more expensive category. Even though many support the removal of a technology that ‘takes our money’, it provides immediate lighting within a highly constrained budget. Whilst both halogen and CFL light bulbs offer a relatively better value proposition than incandescent, neither meets that of LEDs on the key performance indicators of life expectancy and energy efficiency. Further, LEDs win out on price over CFLs, but the majority are unaware of this. However, as discussions in Group 10 – 12 showed, as the LED value proposition gains higher awareness, more across the target market may feel a viable alternative option is available to support incandescent being removed from the marketplace.

*Why don't they stop these higher watts bulbs, why don't they just ban them? (9-10+/KZN/Mix/E)
The old bulbs should not be manufactured all together, people are going to buy them if they are available (4-5/G/B/Z)*

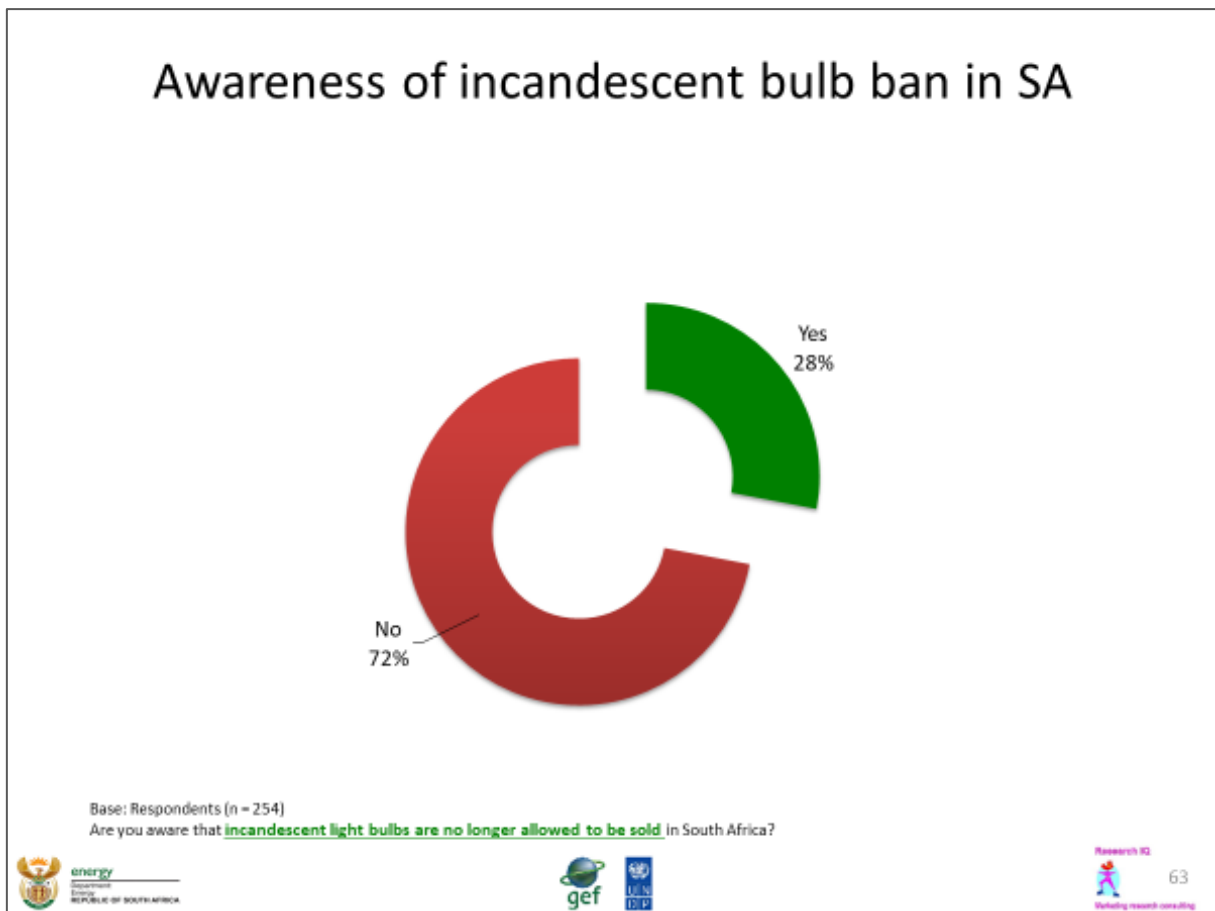


Figure 28: Awareness of Incandescent light bulb ban in SA

9.6 Placement and communication of infographic value label information

The majority agree that the most appropriate placement of this information is at the point of sale in store – at eye level and clearly visible. However, the poster needs to be as big as possible and produced in high quality, bright colours to attract attention. Some suggested that leaflets with the same information be available to take away with them, alongside their light bulb purchase. This would enable further study at home as well as sharing with other people. Some concern was expressed by those less literate that understanding the information may be difficult for them but also trying to understand it in English, which is not their first language, could exacerbate the problem. Perhaps leaflets could be produced in all SA languages.

“Normally the information is printed on the inside of the pack and that is not something that we look out for. It is better when it is visible and outside for everyone to see. Or they can even hand out pamphlets and you go read it yourself.” (6-7/B/FS/SS)

Further, in store assistants need to understand the content of the infographic label to be able to help those who seek further clarity when in store.

Ideal distribution should consider all national retail grocers, DIY/hardware/outdoor as well as speciality lighting stores and spazas. Although, some mentioned that spaza owners do not much like helping anyone with anything!

Although very limited mentions, some younger respondents also mentioned that it would be helpful to be able to scan the information through a code on a cell phone, i.e., alluding to the QSR code which is planned for this label. Those who prefer to engage with educational material could also be directed to a video link through the <https://www.savingenergy.org.za> website.

“Short videos on do you want to save energy” (LSM 9-10+/Mix/KZN/E)

LSM 3-5 also mentioned the positive impact of community Imbizos and road shows as successful tools to engage learning and awareness, but only when the mayor or ward councillor is trusted in the community through effectively delivering on promises. Incentives like ‘free food’ also work to draw engagement.

Mostly all respondents in the qualitative research suggested the idea of an educational awareness campaign on mainstream media channels to draw attention to the key messages the infographic value label aims to convey. This would also serve to raise awareness to look out for the information in store when next purchasing light bulbs.

The target market most mentioned the following communication channels as the best place and time to get their attention when advertising an awareness campaign:

- TV – still consumed by many, albeit it that in upper LSMs TV is losing engagement levels to social media (across) and Netflix:

- Evenings between 6 and 9 pm;
- Popular channels:
 - SABC, eTV, Mzansi Magic, Channel 403, 405, National Geographic;
- Popular soaps and sitcoms – Generations, Isibaya, 7de laan, Skeem Saam
- Sports;
- News – international and local (DSTV, SABC, eNCA);
- Popular documentaries and talk shows – Debra Patta’s 3rd Degree, Carte Blanche.

There is high recall of the effective ‘switch off’ advertisement in many groups across the sample that refer to this as an example of what they would expect from similar advertising.

“They should make it similar to the load shedding ads ... because those ones still stuck with me. Everyone paid attention when a load shedding ad came on to say what level we are on.” (8-10+/Mix/G/E)

- Radio – for majority especially driving to and from work, i.e., drive time shows; traffic updates:
 - Still highly effective for older consumers (LSM 3-5), e.g., Sunday church programmes, Thursday women programmes;
 - National / multi-regional:
 - Metro, 5FM, 94.7, 2000, SA FM, East Coast, Jacaranda, Lesedi, Motsweding, Thobela, Ukhozi, Kaya, Umhlobo Wenene (multi-mentions);
 - Phalaphala, Capricorn, Gagasi (limited mentions);
 - Regional stations (limited mentions):
 - Gauteng – 702, Rainbow, Kofifi;
 - KwaZulu Natal – Sunny South;
 - Eastern Cape – Kumkani;
 - Limpopo - 702; Moletsi;
 - Free State – Mosupatsela;
- Online/digital and Social Media – growing in popularity across the sample (excl. LSM 3) but dependent on data/wi-fi access rather than age:
 - Online/digital – pop up ads on YouTube, Google, banking, fast food, news and job sites/apps;
 - Social media – Facebook, WhatsApp, Twitter, Instagram (younger skew), Messenger, WeChat;
- Newspapers (more limited than other channels) – lower/middle income skew (who do not consume social media or news online):
 - Regional newspapers (Sowetan, Isolezwe, Herald, Citizen, Beeld); tabloids (Daily Sun); free community papers;
- Billboards – on main travel routes in urban areas (but not deemed an appropriate channel for the infographic communication by many).

10 REACTIONS TO ENDORSEMENT LABELS

The final endorsement label recommended for progression went through an iterative developmental design process of 15 various endorsement levels as described in Section 3.4. Similar to the development of the infographic value label, insights around design elements and the balance of colour, symbolism, space and layout were incorporated at various stages in the research for testing.

What differs between the two labels, however, is that each one has a separate function: the infographic value label is required predominantly to educate consumers towards a value driven light bulb purchase that enhances understanding of performance, whereas the endorsement label provides reassurance that the pack is a superior performing product on energy efficiency and other performance standards.

Whilst the journey of the infographic value label needed to start in understanding the level of knowledge and purchase drivers of light bulbs, the journey for the endorsement label needed to explore the context, role and familiarity with endorsement labels in other categories, given there is no current equivalent in the energy efficient field in the SA market.

To understand the final recommended endorsement label, this section begins with understanding the cues gleaned first from endorsement labels in other categories.

10.1 Cues to endorsement labels in general

Endorsement labels establish a quickly referenced, visual and immediate reassurance that the product, brand or organisation carrying the label delivers on one or all the following, depending on the category:

- Confidence in quality:
 - Tested to a certain standard – local or international;
 - Safe to use/consume;
- From a credible, reputable source/authority;
 - Complies with regulations set by some kind of authority/industry.

The above cues were derived through discussions in the focus groups around the following endorsement labels sourced by the research team.



Figure 29: Cross category endorsement labels

Both the discussion and the content were used to provide a contextual backdrop against which the proposed endorsement labels could be evaluated, understood and revised. Some of the symbolism was also useful in guiding design elements: for example, green suggests eco/environmentally friendly; green ‘star’ suggests some link to rating of energy efficiency (Ltd.); stamp suggests endorsement/certification.

10.2 Spontaneous cues to an energy efficient label in SA

Spontaneously, respondents associated the following symbolism with energy efficiency:

- **A light bulb**, particularly a CFL ‘spiral’ light bulb or LED;
- **Green** (predominantly) **or blue** to symbolise the environment;
- **Lightning bolt** which is synonymous with electricity but usually this means danger rather than safety or saving;
- **Tick** means an efficient/good/quality choice, but has no link to energy;
- **Star** means quality – one respondent in the sustainability field further linked star to ‘green star’ and energy efficiency;
- **Cable with three colours** talks to an electrical plug but has no symbolism around efficiency.

In the South African context, the appropriate authority/body to support an energy efficient label would either be the government or Eskom. However, with past Eskom scandals and the poor general sentiment around Eskom, this is not a credible authority for many consumers.

Overall, the idea of an energy efficient endorsement label on light bulb packs was welcomed as a quick visual reference that offers peace of mind around a good decision that saves electricity. With current light bulb packs being difficult for many to understand and most not engaging too much with pack information, the endorsement label is a good guide to making a value driven choice.




*“Confidence in its quality, money in my pocket, and approved by government.” (6-8/Mix/G/E)
 “Even my kid could buy it!” (8-10/Mix/L/E)*

“In all honestly how long in hours means nothing to me but having a little sticker there that has a tick then yes.” (8-10/Mix/G/E)

10.3 Evaluation of top performing endorsement label concepts

As one of the original concepts from Group 1, Concept L performed well in each stage of the research and was the most preferred across the market. It effectively communicates a good quality, energy saving light bulb regulated by government, but when reduced to the size required for light bulb packs, key elements lose visibility and weaken communication. It is also unlikely to stand out sufficiently on light bulb packs, which are predominantly green in colour.

In comparison, as the second most preferred, Concept X performs strongest on both visibility and strength of communication, saying this is a product trusted for efficient energy performance in South Africa and endorsed by government. Whilst this label was only tested in the last three focus groups, it was a design iteration building on concept T (Group 1 – 5) and Concept B (Group 6 to 9 and quantitative). With the white background, it will stand out well on all colour light bulb packs.

| Concept | Energy | Quality performance | Authority | Overall impact of design |
|--|--|--|----------------------------------|--|
| EVALUATION OF TOP PERFORMING ‘GREEN’ LABELS | | | | |
| L  | Electricity (“energy”) environment (green), sun / power on & off (tick in circle), battery (rectangle shape) | Good/right choice (tick), <i>energy saving</i> → time + power (tick in circle) [<u>post-exposure to infographic label</u>] | Approved (Gov. logo, “endorsed”) | Clean design with overall impact of high TRUST. But, green won’t stand out on light bulb packaging (esp. green packs), gov. logo disappears on green – lowers impact ‘Endorsed’ not u/s (lower LSM skew) <i>60% of quant sample said believable & confident message confirming superior quality energy saving</i> |
| K  | Electricity (“energy”), safe, life (green), battery (shape) | Does the job, good choice (tick) | Approved (Gov. logo) | Tick + gov. logo convey TRUST. But, green won’t stand out on light bulb packaging (esp. green packs), gov. logo disappears on green – lowers impact |
| H  | Electricity, environment (“energy”, green) | Serious tone (bold design) | Approved (Gov. logo) | A badge – correctional service, traffic department (negative); too serious and formal |





| Concept | Energy | Quality performance | Authority | Overall impact of design |
|---|--|--|--|---|
| EVALUATION OF TOP PERFORMING ‘COLOURFUL’ LABELS | | | | |
| X  | Electricity (“energy”) | Fast & efficient (star) | Approved (Gov. logo), Meets SA standards (SA flag colours), | Attractive & eye catching, bold Star + SA colours + gov. logo convey TRUST. Gov. logo stands out better on white background |
| T  | Electricity (“energy”) | [subtle tick in design not picked up] | Approved (Gov. logo; “endorsed”), Meets SA standards (SA flag colours) | Attractive & eye catching but authority weakened by cluttered design and small gov. logo on green background |
| B  | Electricity (“energy”, lightning bolt) | | Approved (Gov. logo, “endorsed”), Meets SA standards (SA flag colours) | Lacking authority (small gov. logo) quality performance weakened by ‘danger’ associations of lightning bolt 34% of quant sample said believable & confident message confirming superior quality energy saving |
| S  | Electricity (“energy”) | Good choice (tick), choose confidently (blue colour) | Approved (Gov. logo) | Clean, uncluttered design, elements stand out against attractive blue |

Table 30: Evaluation of top performing endorsement labels

10.4 A symbolic comparative analysis of Concept L and Concept X

Concept X and Concept L are equally balanced in communication of the intended endorsement label messaging, but for light bulbs and as mentioned above, Concept X has the advantage through stronger visibility on small packs.

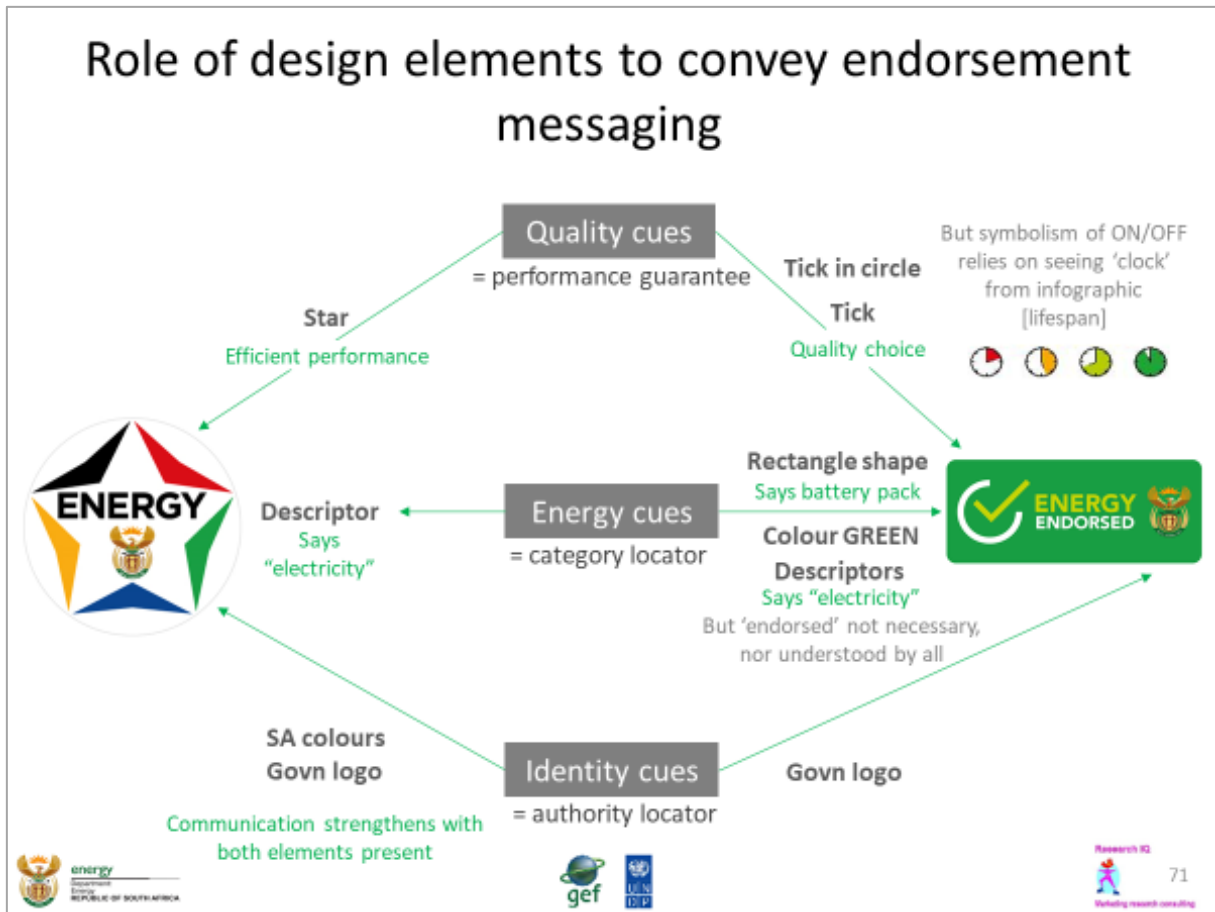


Figure 31: Role of design elements to convey endorsement messaging

10.5 Placement and communication of endorsement label

The most ideal placement of the endorsement label is on the light bulb pack where it will be most visible. Many consumers acknowledge that they often do not pick up the pack to look at it as they select the pack they want through familiarity and habit. Therefore, on the front, top left-hand corner would be the most impactful placement when they pick up the pack. Alternatively, on the flat top (lid) of the pack so they notice it when they open the pack, but this will not assist in visual identification when standing in front of the shop shelf.

Currently, as there is no awareness of the endorsement label and what it means, many perceive that the Department of Energy should communicate its intended role when it is launched. The label will then carry meaning and consumers are more likely to notice it and feel assured they are making the right decision in a quality light bulb.

Channels of communication remain the same as outlined in Section 9.6.

11 CONCLUSIONS AND RECOMMENDATIONS

11.1 Infographic value label recommendations

The final infographic value label is successful in supporting consumer purchase of light bulbs, enabling their understanding of what to expect from various types of light bulbs available:

- Light output levels – measured in Lumens rather than Watts;
- Life expectancy – that incandescent will yield a smaller number of hours before it fails, then halogen with more hours, followed by CFL and finally LED giving the greatest number of hours comparatively;
- Energy usage – that incandescent is the least efficient type of light bulb relative to halogen, then CFL and with LED being the most efficient technology.

Due to size restrictions for purposes of research evaluation, the step on colour rendering was removed. If space permits on the point of sale material, the infographic should include one final STEP 7 (as per Figure 32 below) to drive colour-rendering information. But this step needs more explanation for the market to understand that ‘warm white’ vs. ‘cool white’ does not mean temperature/heat level of the light bulb, but rather means tone or mood created by the light bulb, as indicated by Kelvins.

Whilst colour rendering is not a relevant purchase driver for many in the target market, there are those for whom it is, and inclusion would assist in raising awareness of Kelvins. As a last step, it is unlikely to confuse or be off putting for those not ready yet to absorb the information from this step.

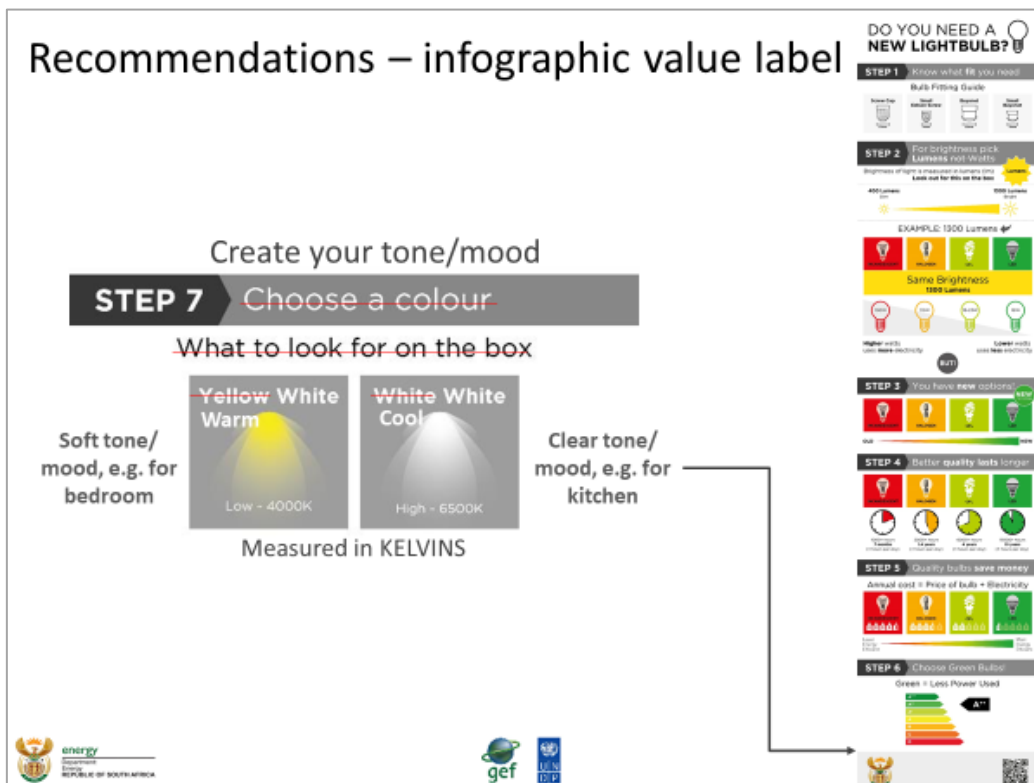


Figure 32: Addition of Step 7 Colour rendering to infographic value label

In summary, the infographic label strongly drives the desire to trade up to LEDs through outlining the LED value proposition. But, in reality as affordability is limited in the current economic situation in SA, consumers may consider a ‘step change’ to the most affordable option, e.g., more halogen purchase over incandescent. However, if communication could address the decrease in LED pricing to below that of CFLs, more may convert directly to LEDs rather than making a step change to CFLs from halogen or incandescent.

11.2 Endorsement label recommendations

Both Concepts X and L perform similarly to communicate that consumers can trust the light bulb on which it is found to perform well on energy efficiency and other performance needs stated on pack. However, the recommendation is towards Concept X – the star – to align better with the direction the SA market has already adopted as well as to achieve strong standout on the small light bulb appliance packaging.

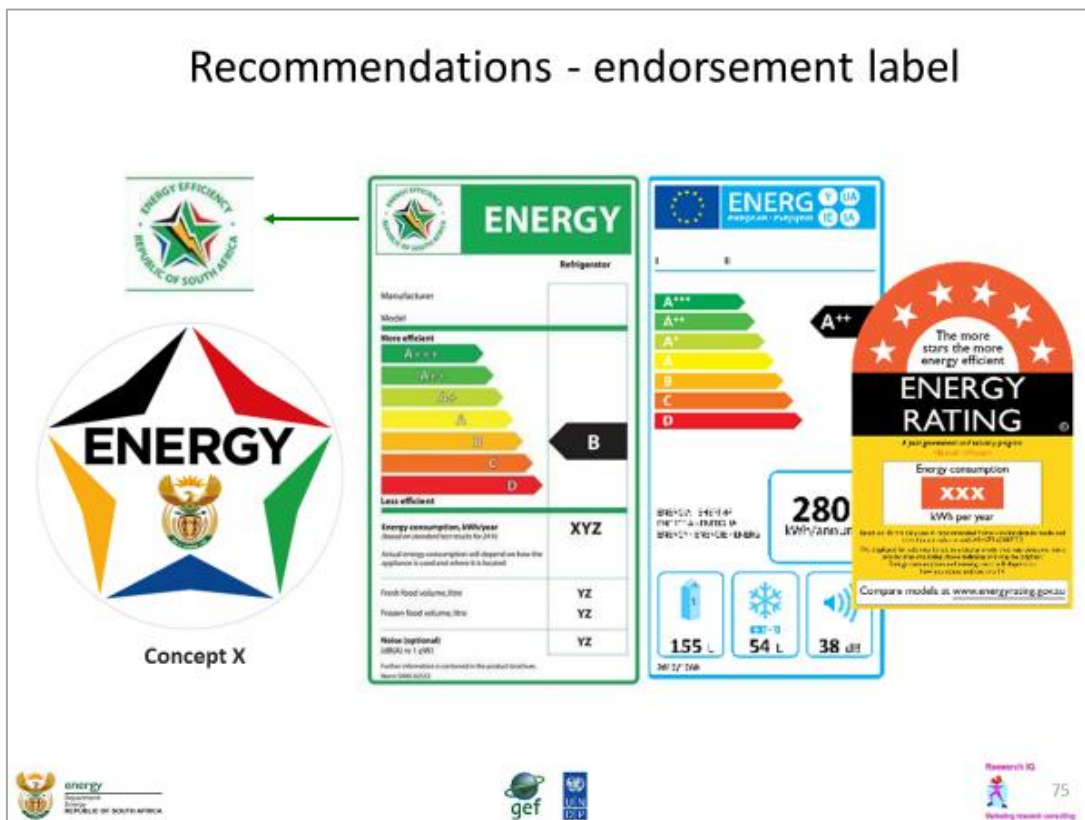


Figure 33: Addition of Step 7 Colour rendering to infographic value label

Concept X also has stronger potential to create visual alignment with the already legislated Energy Efficient label, in which a star sits in the top left-hand corner. The ‘star’ symbol may also leverage off star symbology established globally in Energy Efficient labelling. As such, Concept X is likely to have better longevity.


In comparison, Concept L introduces a new ‘tick/circle’ symbol, which requires the market to adopt yet another symbol that has little meaning in both local and international energy efficient communication.

Whilst both the infographic value label and endorsement label will gradually gain visibility through introduction at store level, it must be remembered that the lighting category is characterised by low engagement and shopped habitually by purchasing the light bulb pack with which they are familiar. As many consumers do not read the light bulb packs, their current light bulb shopping patterns need to be disrupted through an awareness and educational campaign. When the new labelling is noticed at the point of sale, this should serve to prompt recall of the campaign and higher engagement with the information that leads to making a more efficient, better value driven choice to reduce electricity consumption and overall spend on light bulbs.


12 APPENDIX

12.1 Stimulus material – value labels


Initial value labels tested in Qualitative Stage 1




Concept W
Tested in G1 only




Concept S
Tested in G1 - G5





Concept P
Replaced Concept S after G6 - 9



Concept V
Was evaluated throughout as a benchmark








Value labels developed in G6-9 Qualitative Stage 1, then revised & tested in Quantitative Stage 2 & Qualitative Stage 3

Concept N → Final concept

12.2 Stimulus material and detailed analysis – endorsement labels

Reactions to endorsement label concepts (1)


Tested in all groups 1 – 9



Concept T

Strongest across sample → liked by most but not by all


- ✓ Meets SA standards
- ✓ Strong identity – SA
- ✓ Strong authority – government
- ✗ SA ID implies Eskom association
- ✗ Weak energy authority associations [DoE emblem not recognised]
- ✗ Cluttered



Concept L

Strongest amongst LSM 8-10 and some LSM 4-7



- ✓ Tick in the circle is liking / ticking the box
- ✓ Tick = the right choice
- ✓ Green = environmental cues
- ✓ Authority presence – government
- ✗ Medicinal cues




Concept H

Strong LSM 4-7 → polarised views amongst LSM 3 and 8-10

- ✓ Strong stamp of authority and approval → dominant government logo
- ✓ Energy says 'electricity'
- ✓ Formal, serious tone
- ✓ Big, bold, visible
- ✓ Green = environmental cues
- ✗ Weak energy authority associations – 'government' is too general
- ✗ A badge – correctional services, traffic department (negative connotations)
- ✗ Too formal





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Reactions to endorsement label concepts (2)


Introduced after G1



Concept Q

LSM 3-5, Eastern Cape / Free State skew


- ✓ Tick, government endorsed, uncluttered
- ✗ Green tick disappears



Concept S

LSM 8-10 and LSM 3-5 preference → no appeal LSM 6-7


- ✓ Tick, government endorsed
- ✓ Uncluttered → freedom
- ✓ Like blue → stands out



Concept J


Limited appeal LSM 8-10, Polokwane only (W, M skew)

- ✓ He is green, powerful and saves




Concept D
– rejected across



- ✗ Childish, can't be taken seriously, looks like a Ninja Turtle
- ✗ No authority endorsement
- ✗ No identity / attachment to Captain Energy




Concept K Removed after G5



Concept C

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Reactions to endorsement label concepts (3)

Introduced after learnings from G1 to G5



Concept B

Strong preference and skew LSM 3-7 → but not rejected by LSM 8-10

- ✓ Flash = danger, electricity, stands out
- ✓ Strong identity – SA
- ✓ Government authority and endorsement – a ‘stamp’



Concept U

Preference and skew LSM 3-7 → less appealing overall

- ✓ Like no government presence
- ✗ Empty space - missing government ID
- ✗ Role of green curve?



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Reactions to endorsement label concepts (4)

Designed after Stage 1 qual G9 and tested quantitatively only – removed for G10 to G12 as performed poorly



Concept I




Concept F



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Reactions to endorsement label concepts (5)


Introduced after learnings from quant in G10 to G12



Concept X

Strongest LSM 4-8 → but not rejected by LSM 9-10+


- ✓ Eye catching, attractive, stands out
- ✓ Meets SA standards
- ✓ Strong identity – SA
- ✓ Strong authority – government
- ✓ Strong performance – star, bold/clear design
- ✗ Doesn't say energy 'saving'
- ✗ A bit busy (LSM 9-10+)



Concept K

Strongest LSM 9-10+ → but not rejected by LSM 3-8




- ✓ Simple, clean design
- ✓ Strong green associations → safe, life
- ✓ Authority – government
- ✓ Strong performance – tick, approved, good choice
- ✓ Says 'energy' → word, looks like battery
- ✗ Green won't stand out on packaging



Concept Y

Rejected across

- ✗ Religious/political/military associations
- ✗ Unattractive, dirty

Reactions to endorsement label concepts (6)

Introduced after learnings from quant in G10 to G12 & shown after Concept X, Y, K were exposed



Concept L

Strong across 4-10+

- ✓ Tick/circle → symbolises on/off [shown after infographic label]
- ✓ Simple, clean design
- ✓ 'Endorsed' + government → authority, trust [but some say only need word 'energy']
- ✓ Strong performance
- ✓ Says 'energy' → word, looks like battery
- ✗ Green won't stand out on packaging



