
STRATEGIES TO ADDRESS HOUSEHOLD ENERGY-RELATED INJURY

Presented by:

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28 FEBRUARY 2013

The Reality...

A major concern for energy safety: paraffin poisoning; fires, indoor air pollution and burns.

Main target - informal urban and rural settlements where people are more at risk for energy-related incidents.

Informal settlements are here to stay!!!
POLITICS!!!!

Underlying Causes

Poverty & Unemployment

Limited access to safe resources and ability to invest in safer systems

Unsafe, cramped living conditions

Unsupervised children

Overcrowding

Violence & alcohol abuse

Lack of education

Systemic Issues

Dangerous, illegal appliances

No capacity to regulate or monitor.

Lack of safe packaging and labeling

Lack of safe, affordable appliances

Point of Consumption

Informal housing is made from combustible materials

Poor Ventilation

Multiple energy sources in confined spaces



Impact

Emotional:

- Loss of loved ones
- Uncertainty and fear
- Loss of belongings and shelter
- Survivors of burn injuries are subject to stigmatization, discrimination, and social exclusion.

Socio-economic:

- Loss of one's home & possessions
- Impact on one's ability to generate income (absenteeism, loss of employment)
- Catastrophic costs of seeking medical treatment
- State resources required to care for patients and put out fires are high: health, human settlements, labour, emergency services, social development
- Externality costs of Paraffin fuel to the economy estimated to be R104 billion (Treasury report)

Physical impacts of energy-related injuries

- Death and Disability
- Reduced mobility and capacity to engage in employment
- Reduced functionality in basic day-to-day activity
- Long-term physical therapy and treatment

Research & Surveillance

GIS-based National Household Energy Surveillance System

Since 2006

1. To understand household energy in South Africa

Usage, sales, harmful incidents, ...

2. To provide evidence for household energy safety

Energy safety campaign, safety policies, ...

3. Repository of household energy data & information

Harmful energy-related incidents

Energy usage

Energy safety education campaigns

Paraffin system

4. Repository of household energy in the Media

Data & analysis available online: <http://www.gisparaffinsafety.org/>

WHAT RESEARCH AND SURVEILLANCE UNDERPINS ACTION IN THE WESTERN CAPE?

Research & Surveillance

GIS-based National Household Energy Surveillance System

Paraffin Safety Association
Southern Africa

+ Home | + Data Capture | + Maps | + Descriptive Stats | + Request Data | + Links | + Admin | + Main Site

Introduction to the GIS surveillance

Case studies: Incidents >	Age vs Gender
WC paraffin usage and sales	Age vs Injury Cause
Informal settlement fires >	Day of Week vs Injury Cause
	Age vs % Body Surface Burned
	Injury vs % Body Surface Burned
	Age vs Burn Severity
	Age vs Degree of Burn
	Place vs Injury Cause
	Activity vs Injury Cause
	Energy Source vs Injury Cause
	Age vs Place
	Liquid Burns: Age vs % Body Surface Burned
	Liquid Burns: Age vs Degree of Burn

In an effort to better understand the nature, occurrence and frequency of paraffin related incidents the Paraffin Safety Association is in the process of developing and launching a GIS (Geographical Information System) based surveillance system.

A GIS is a special type of database that allows data to be located, analysed spatially (geographically). The Paraffin Safety Association has used GIS technology in the past to develop a model for a national paraffin safety system. It is now being used to develop a surveillance system.

The system is primarily to be used as a tool:

- To collect information about paraffin usage and harmful paraffin related incidents occurring across the country.
- To monitor and analyse the usage and incidents.
- To monitor and evaluate any interventions related to paraffin safety that are undertaken by the Paraffin Safety Association.

It is envisioned that the system will ultimately allow the Paraffin safety association to be more accurate in its research and interventions and that other disaster organization management interventions might benefit from the system.

The project is still in its early stages and the main tasks undertaken to date include:

- The preparation of base maps showing the use of paraffin for cooking heating

Percentage households using paraffin for cooking

Key

Provincial boundaries

Percentage households

- 0-5
- 6-10
- 11-15
- 16-20

Done

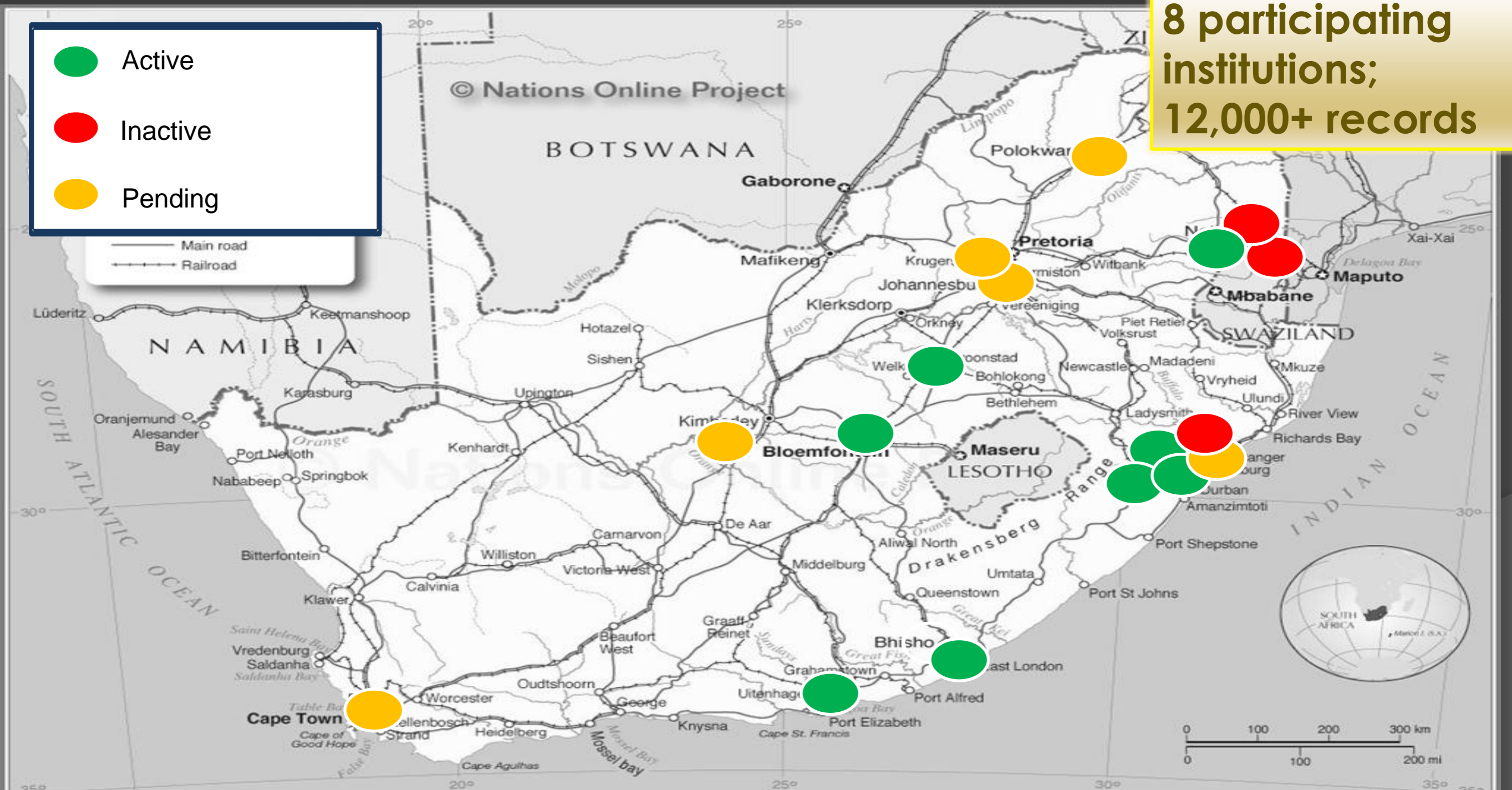
Research & Surveillance

In addition to household surveillance of low-income households, PASASA developed the **Injury Surveillance System** in 2006 to understand **the nature, occurrence and frequency** of paraffin- and energy-related morbidity and mortality in South Africa.

- Active
- Inactive
- Pending

— Main road
— Railroad

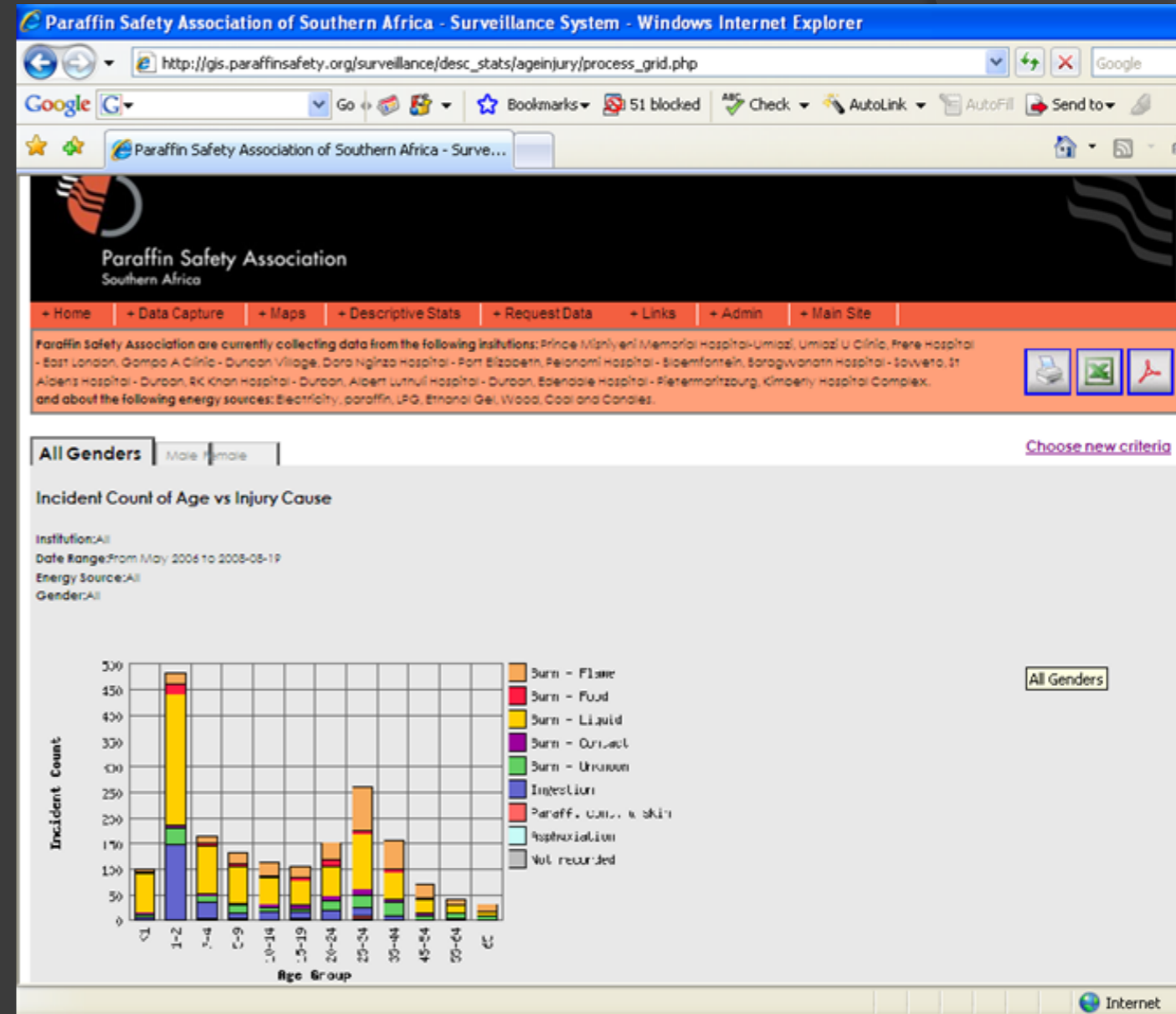
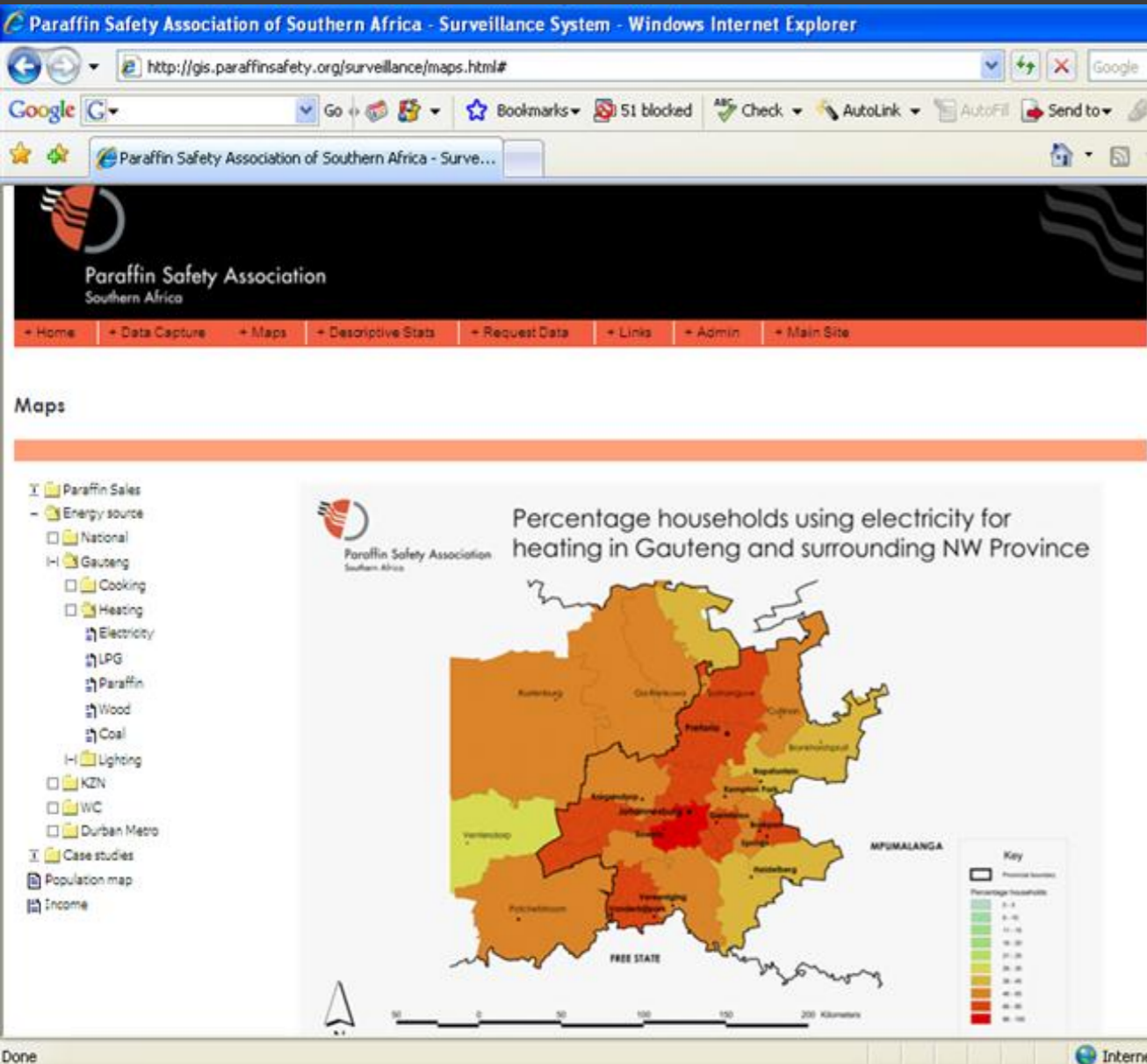
8 participating institutions;
12,000+ records



Research & Surveillance

GIS-based National Household Energy Surveillance System

Geographical analysis available online as graphs and charts:



Research & Surveillance

GIS-based National Household Energy Surveillance System

Ability to visualize Association's activities, resources, media and fire surveillance across the country by selection:

Paraffin Safety Offices

ASI's

Injury Data Institutions

User Summits

Exhibition Events

Training Events

Media Coverage

Fire Incidents

Household Surveys

2006 2007 2008 2009 2010 2011 2012

Show information for the following years:

2 children die in W Cape shack fire
Thembalethu, George
2012-06-09
[Click here for more details](#)

news24
Breaking News, First.

2 children die in W Cape shack fire
2012-06-09 17:00
Johannesburg - Two siblings died in a shack fire in Thembalethu, the Western Cape's George Municipality said on Saturday.

Steven Erasmus, a director of planning and housing in George, said it was unclear how the Friday night fire started.

"People reported that two children died from the fire, a four-year-old and an 11-year-old," he said.

"There is speculation that the children were on their own. When the police complete their investigation it could potentially be a crime scene."

Erasmus said once his department had located the remaining family members, they would offer them shelter.

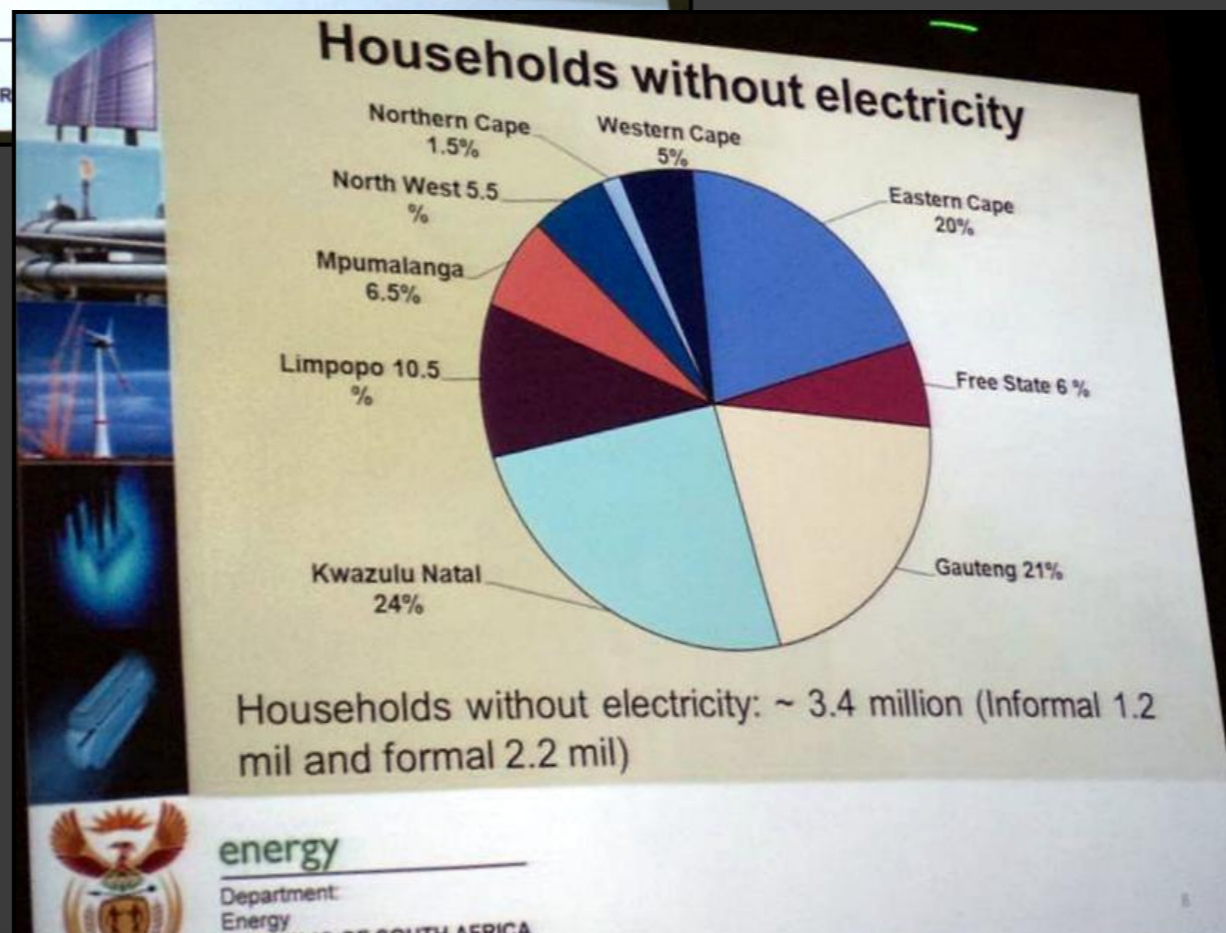
- SAPA

Links to supporting documents and additional resources are also provided.

Energy Use & South Africa's Poor



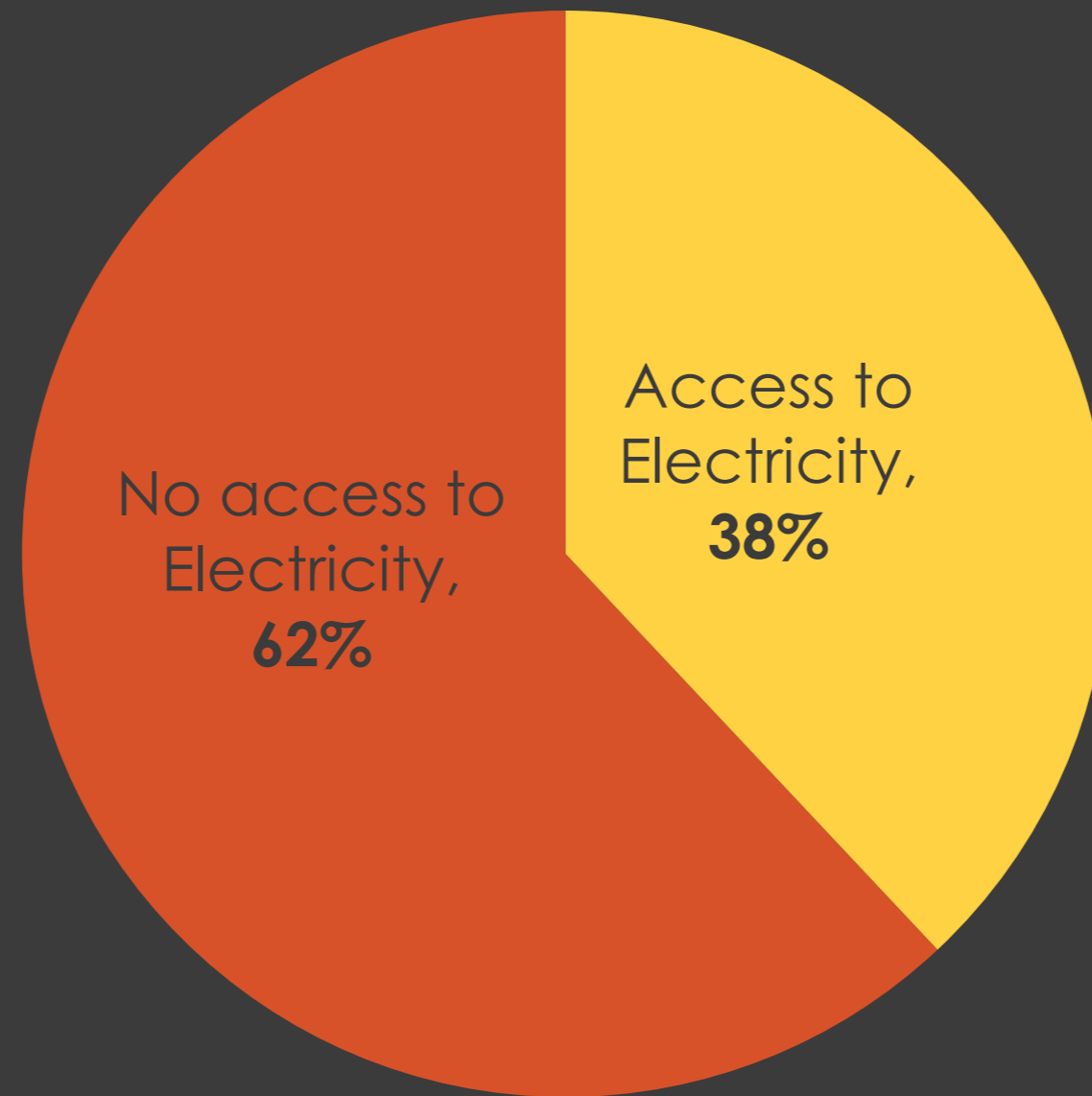
Despite the successes of South Africa's electrification program, the South African Department of Energy has indicated that 3.4 million households currently do not have access to electricity across South Africa



An excerpt from proceedings at the 2012 conference for domestic use of energy [1].

Energy Use in South Africa

Access to Electricity in low-income households

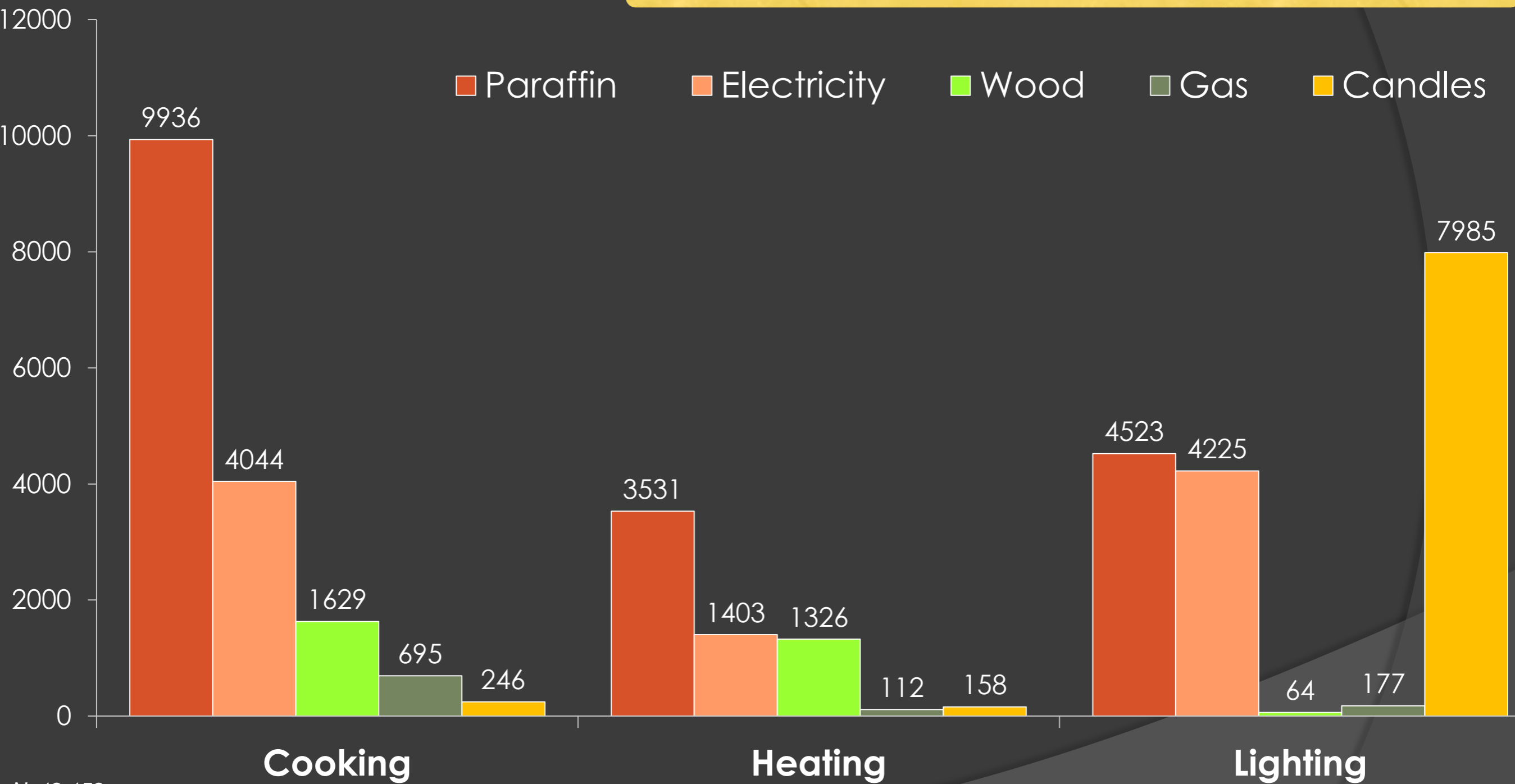


N=4,427

WHAT IS THE WC PICTURE? PLAN FOR A VARIETY

Energy Use in South Africa

Types of energy sources used in low-income households

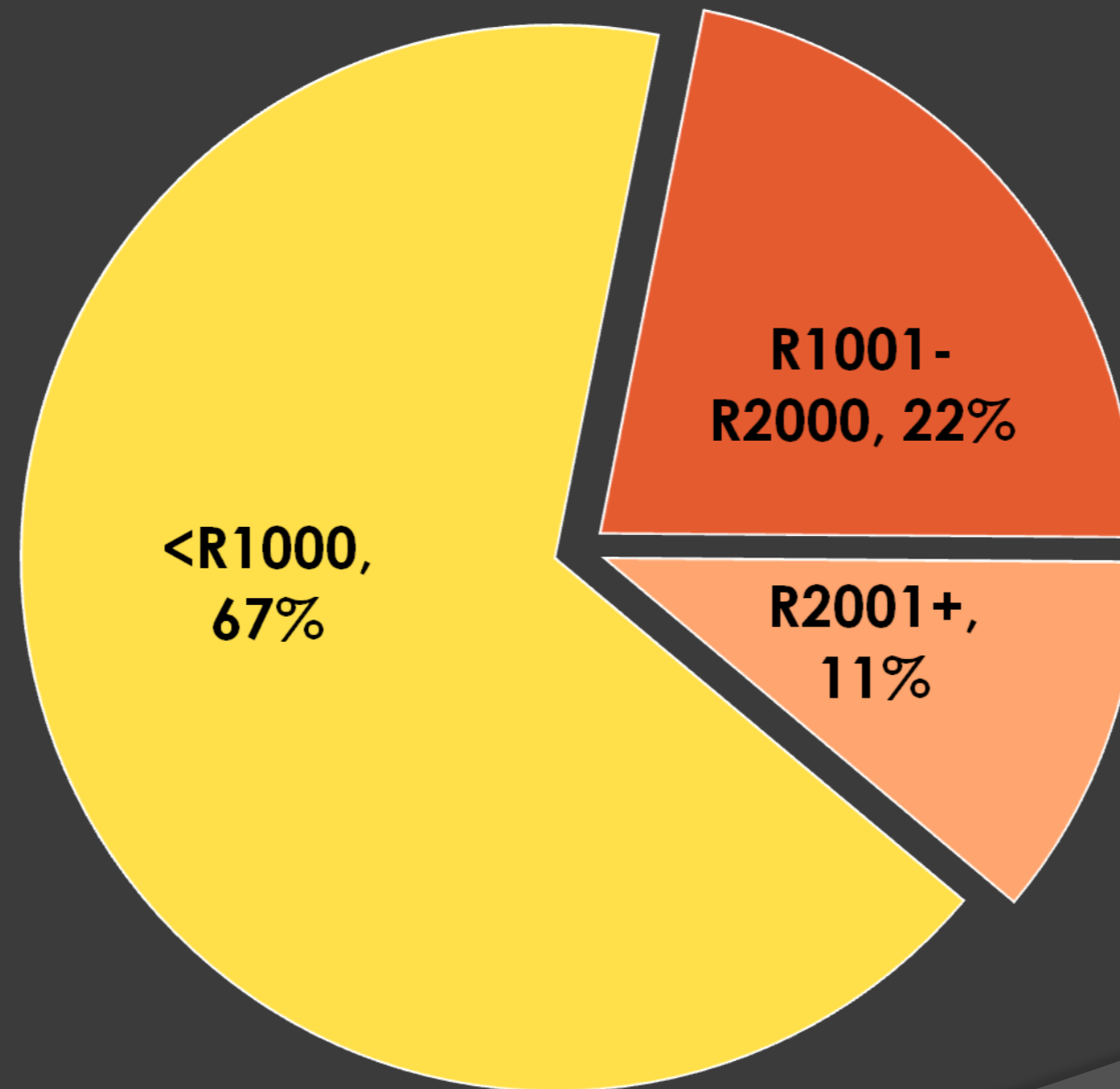


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RECOGNISE THE ROLE OF PARAFFIN AND

Energy Use & South Africa's Poor

Monthly Household Income

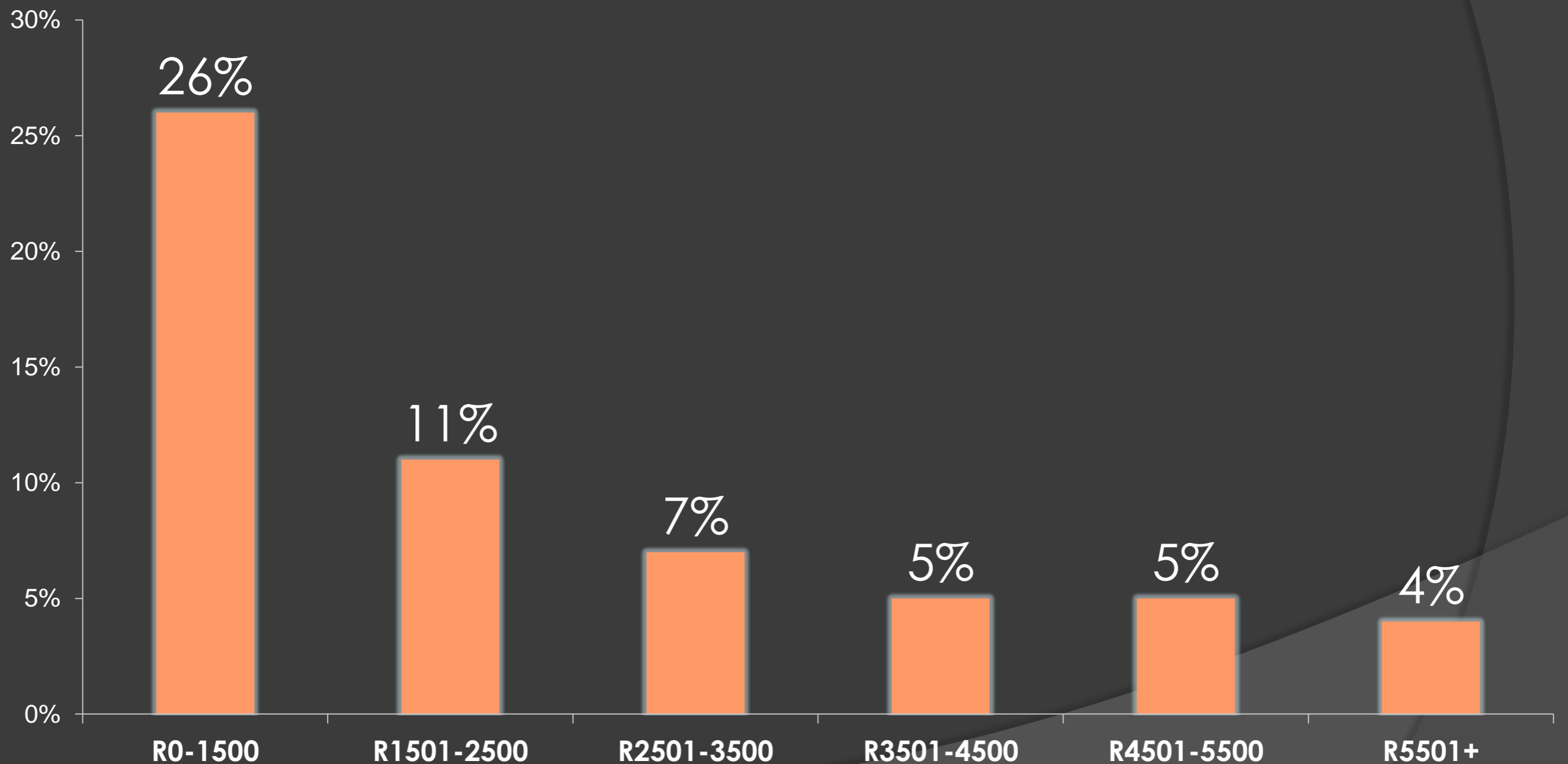


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Understand energy poverty; energy usage; relationship

Energy Use & South Africa's Poor

Average monthly expenditure on energy as a percentage of monthly household income

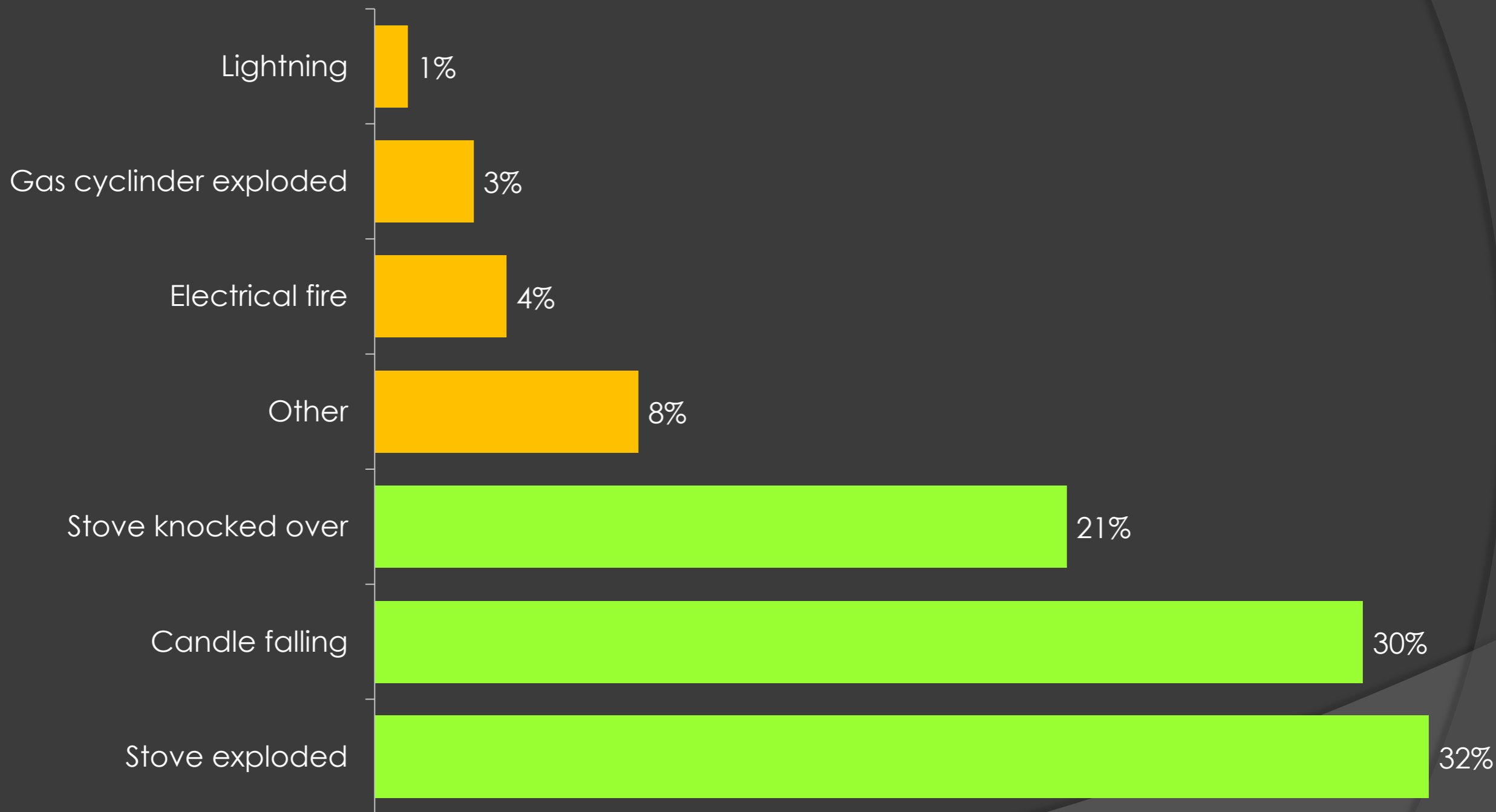


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Address the monetary burden of the poor

Energy-Related Fires in South Africa

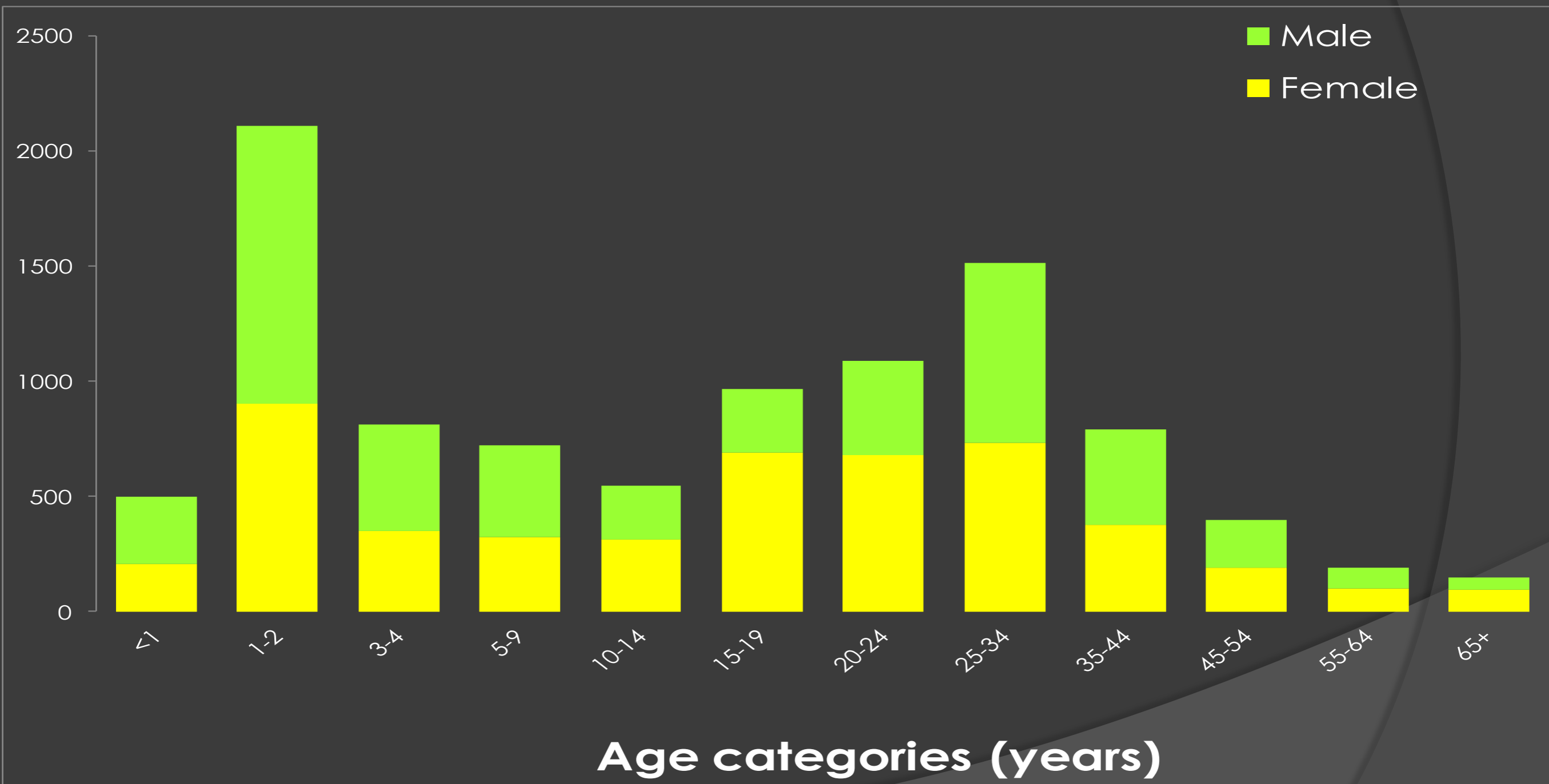
Causes of Fires



Make energy systems safer (packaging, supply, appliances);
illegal unsafe appliances need to be addressed

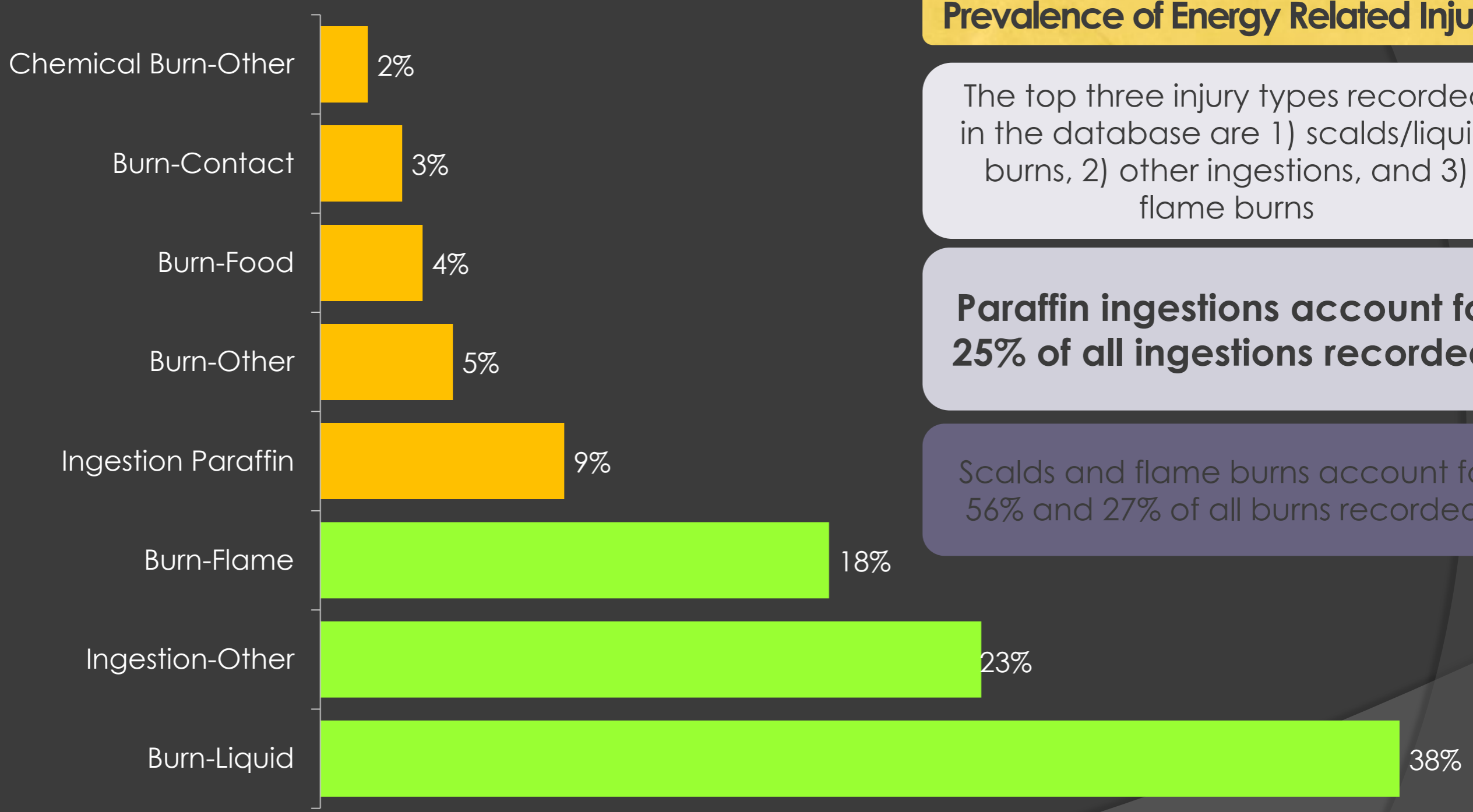
Energy-Related Injuries in South Africa

Age & Demographics of Energy Related Injuries



Targeted interventions for children and care givers

Energy-Related Injuries in South Africa



Prevalence of Energy Related Injuries

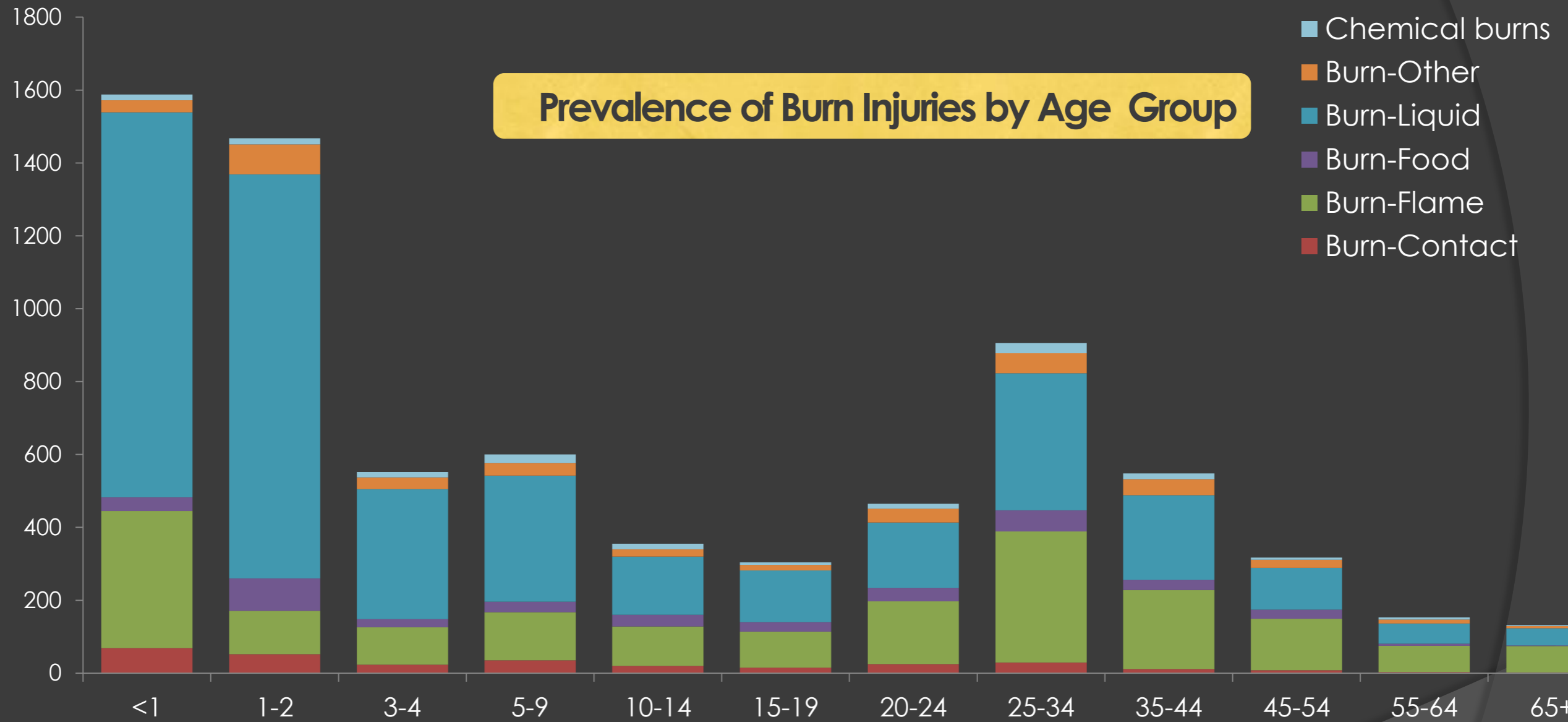
The top three injury types recorded in the database are 1) scalds/liquid burns, 2) other ingestions, and 3) flame burns

Paraffin ingestions account for 25% of all ingestions recorded!

Scalds and flame burns account for 56% and 27% of all burns recorded.

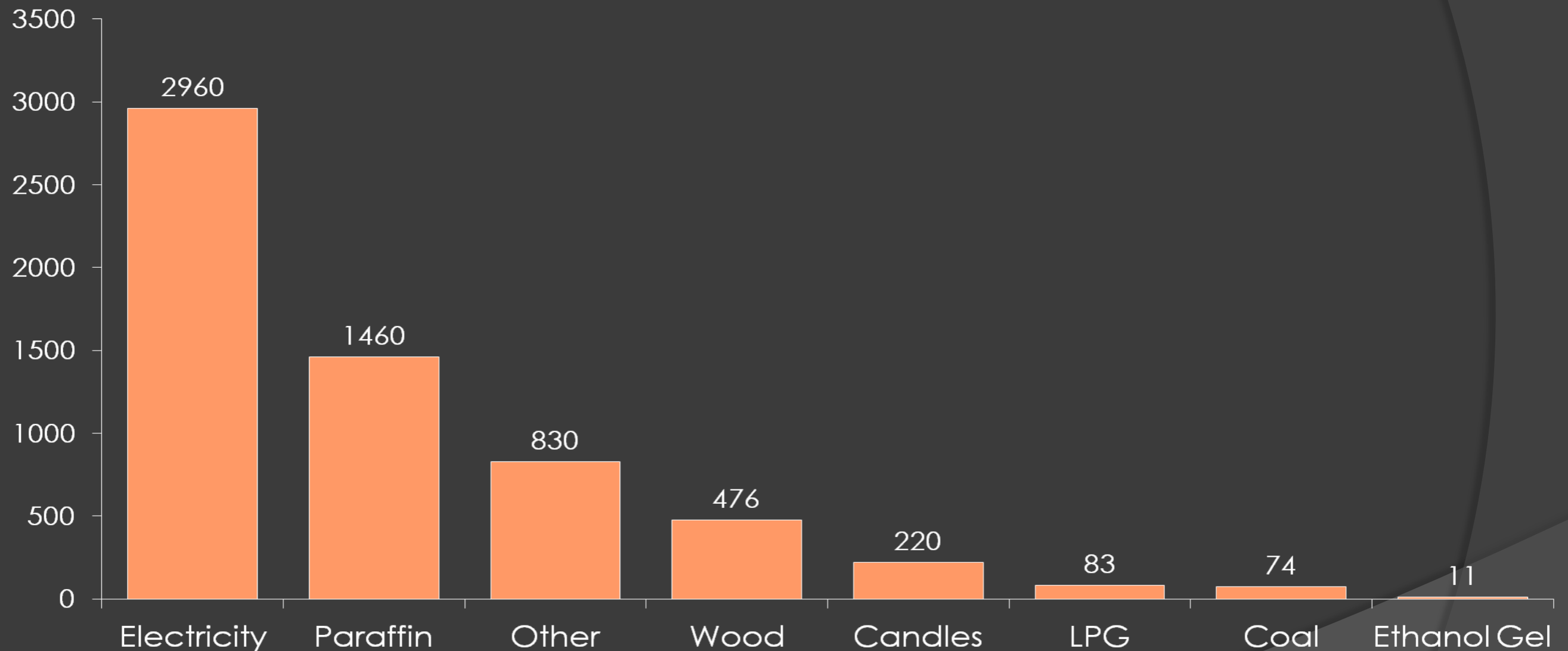
Prevention programmes targeting ingestions and scalds

Burn Injuries in South Africa



Burn Injuries in South Africa

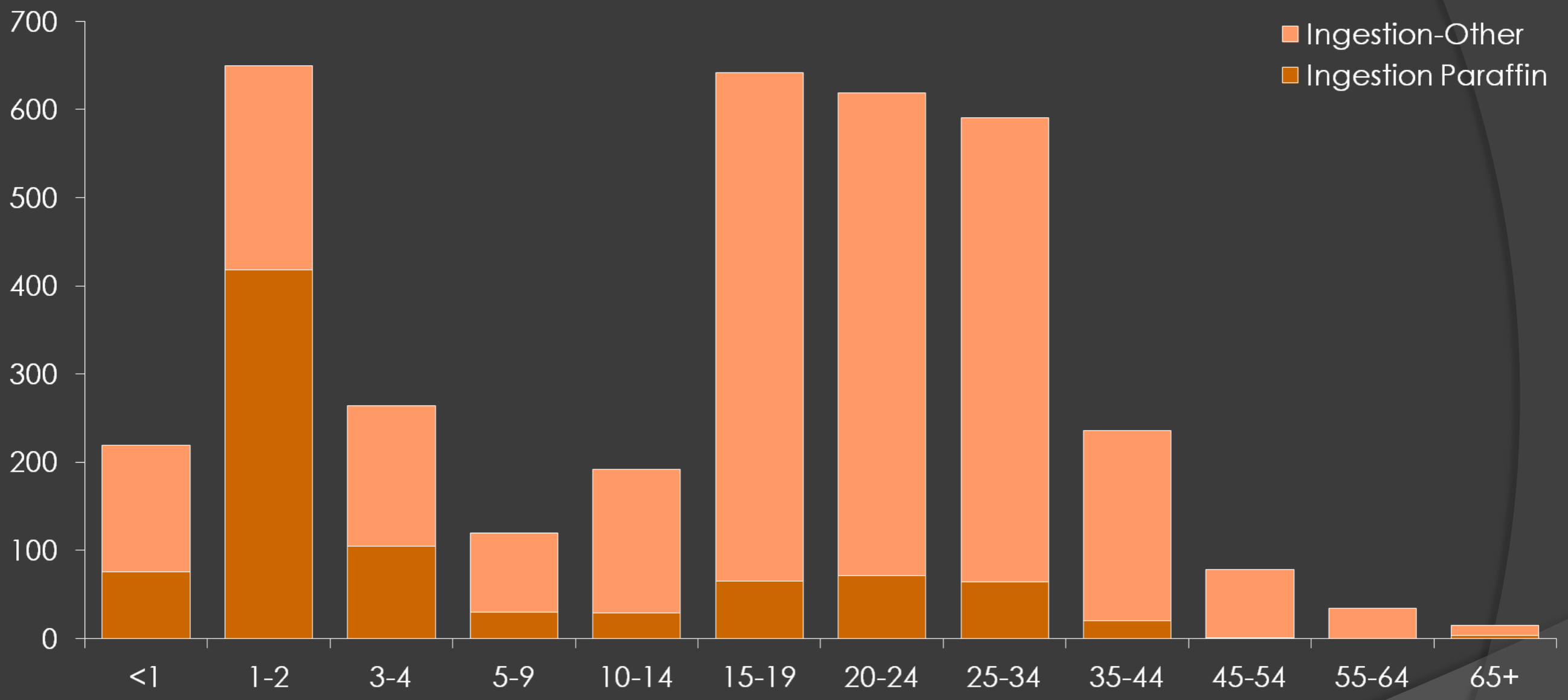
Energy Source involved in Burn Injury



All energy carriers need to be focused upon. Do not assume electricity usage = no injuries

Poison Ingestion Injuries in South Africa

Poison Ingestions by Age Group



Focus prevention strategies on children; indication of deeper social issues

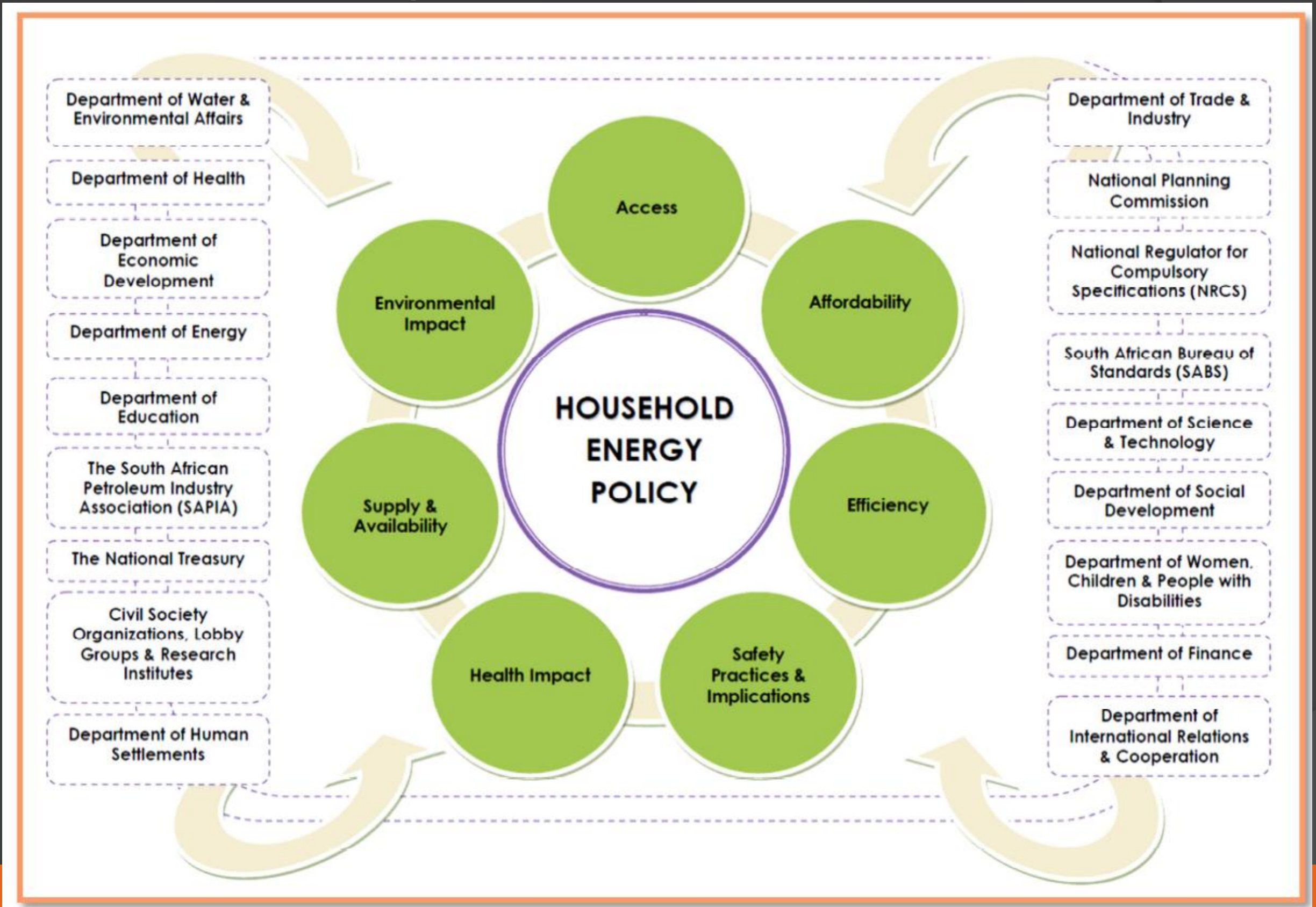
The Need for a Household Energy Policy

Outcomes of a Household Energy Policy “Panel of Experts”

A Household Energy Policy “Panel of Experts”, jointly hosted by the Paraffin Safety Association of Southern Africa (PASASA) and the South African National Energy Development Institute (SANEDI) of the Central Energy Fund (CEF), was held in Johannesburg on 3rd May 2012.

- The solution to the household energy crisis must be **multifaceted and policy-based**.
- There is currently **no framework to support the current energy policies and efforts thus far have been reactionary** to electrification initiatives.
- In order to effectively tackle the problem, proactive efforts need to take place through collaborative efforts of key stakeholder and the government.

Proposed Framework



Who are the stakeholders in WC?

Proposals & Concluding Remarks

- **Research and Surveillance**
- **Forensics**
- **Buy-in and action by government departments**
- **Collaboration in planning and interventions**
- **Enforcement**
 - regulations and standards
- **Illegal appliances – prosecution needed**
- **Household energy safety and efficiency policy**
- **Community engagement, ownership**
- **Ownership, accountability, life of task teams**

Questions, discussion



Joe Slovo Informal Settlement, Cape Town, January 2005