

NRCS –National Regulator for Compulsory Specifications

DUE workshop: overview of the technical and administrative regulatory requirements for the energy efficiency of electrical and electronic apparatus

31 March 2015

LW JELE

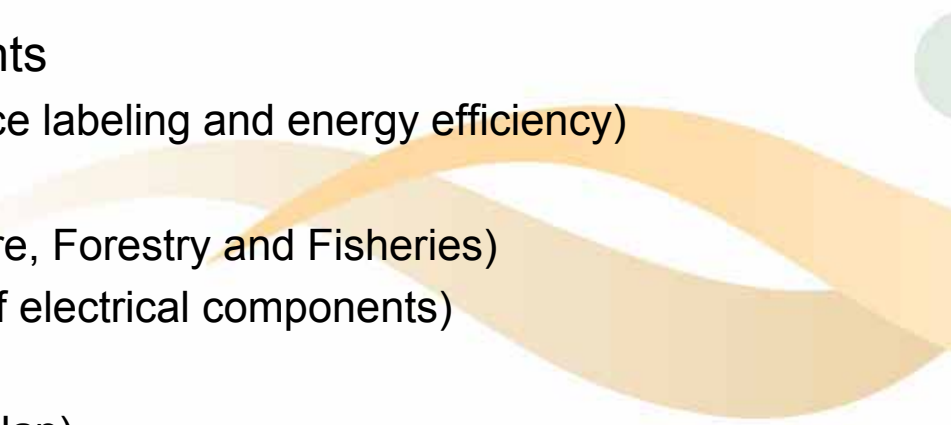
(TECHNICAL SPECIALIST)

NRCS –Regulatory research and development

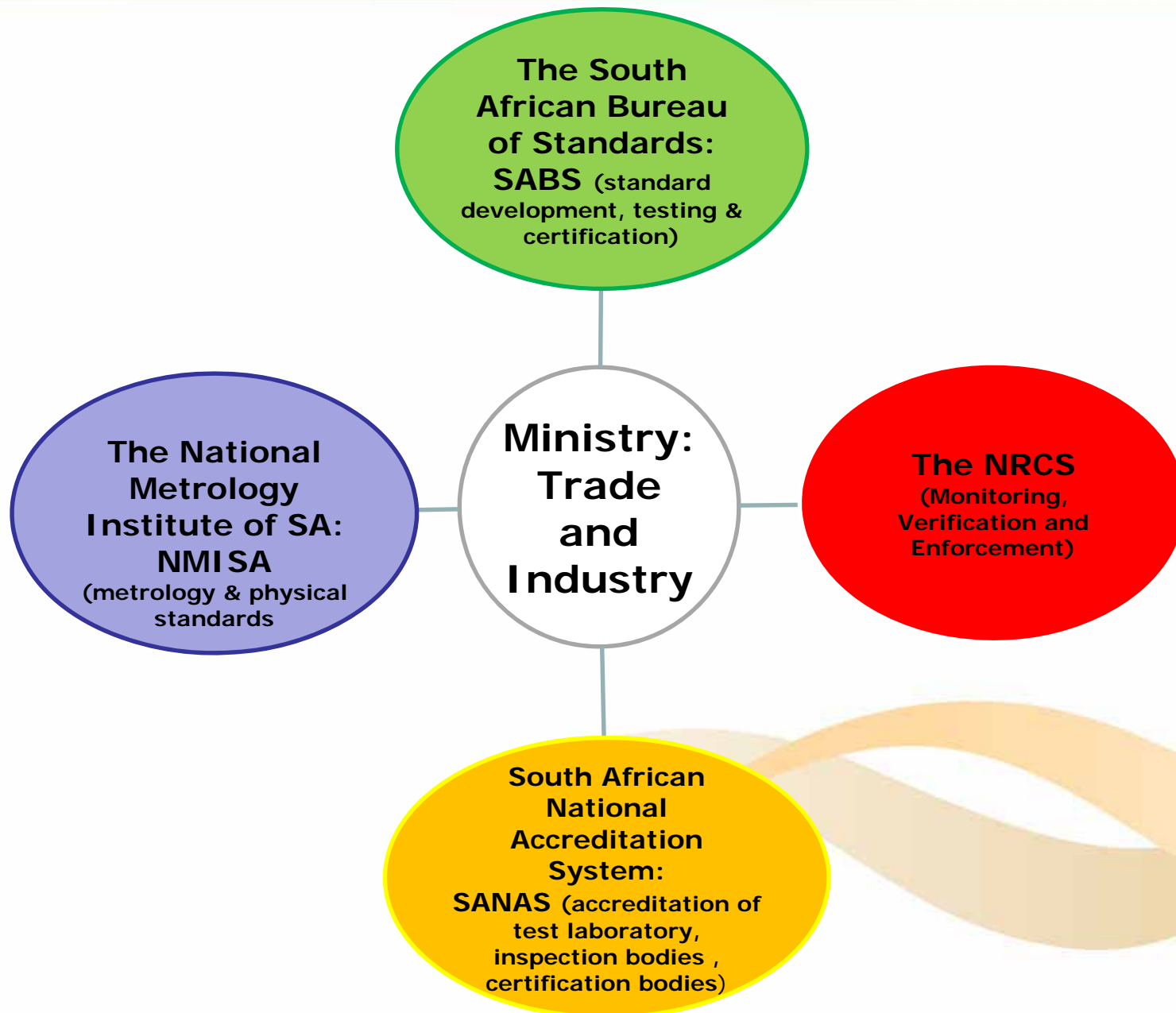
CONTENTS

- **OVERVIEW OF THE NRCS**
- **NRCS ENERGY EFFICIENCY REGULATIONS**
- **IMPLEMENTATION PHASES OF VC 9008**
- **TECHNICAL REQUIREMENTS of VC 9008**
- **ADMINISTRATIVE REQUIREMENTS AND PROCESS for VC 9008**
- **RECOGNITION OF MANUFACTURERS TESTING LABORATORY**
- **POSSIBLE FUTURE REGULATIONS ON ENERGY EFFICIENCY**

OVERVIEW OF THE NRCS

- NRCS- National Regulator for Compulsory Specification
 - The mandate of the NRCS is to administer and maintain compulsory specifications (VC) and technical regulations in the interest of public safety, health, environmental protection and fair trade.
 - The legal frameworks under which the NRCS performs its work on behalf of **the dti** are as follows:
 - The National Regulator for Compulsory Specifications Act (Act No. 5 of 2008)
 - Legal Metrology Act (Act No. 09 of 2014)
 - National Building Regulations and Building Standards Act (Act No. 103 of 1977)
 - Mandate from others Departments
 - Department of Energy (appliance labeling and energy efficiency)
 - DoT (Department of Transport)
 - DAFF (Department of Agriculture, Forestry and Fisheries)
 - Department of Labour (safety of electrical components)
 - Department of Health
 - the dti (Industrial policy action plan)
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OVERVIEW OF THE NRCS CONT...



OVERVIEW STATUS OF NRCS ENERGY EFFICIENCY REGULATIONS

MANDATORY REGULATION	PRODUCTS	Requirements	Year of implementation
VC 9091	Single-Capped Fluorescent Lamps	Safety and MEPS	2009
VC 8043	Incandescent Lamps (Phasing out inefficient lamps)	Safety and MEPS	1 st phase: 07 August 2014 2 nd Phase 07 February 2015
VC 9006	Hot Water Storage Tanks	Safety, performance testing and labeling requirements	2014 (currently under review to include MEPS, move from the E level to a B)
VC 9008	Electrical and Electronic Appliances	Safety, MEPS and labeling	2015

IMPLEMENTATION PHASES OF VC 9008

- Regulation was published in November 2014
- Implementation is in 3 Phases
 - **1st Phase: 28 May 2015**
requirements for audio and visual products (standby power < 1 Watt)
 - **2nd Phase: 28 August 2015**
labeling and energy class requirements for white goods (such as: laundry products, electric ovens, refrigerators, dishwashers.)
 - **3rd Phase: 28 May 2016**
labeling and energy class requirements for Air conditioners and heat pumps for heating space.
- Products already approved by NRCS for safety requirements (i.e. having a valid LOA) will be given up until **28 November 2015 (1 year)** to comply with the requirements of the regulation.

TECHNICAL REQUIREMENTS OF VC 9008

PRODUCTS	MANDATORY MEPS LEVEL	European MEPS	APPLICABLE STANDARDS	REQUIREMENTS
Air Conditioners	B ($3.2 \leq \text{EER} < 3.0$)	A	SANS 941 SANS/EN 54511-3	<ul style="list-style-type: none"> Energy Consumption (cooling mode only)
Refrigerators	B ($55 \leq \text{EEI} < 75$) (AE C/ SAE C)*100	A+	SANS/IEC 62552 SANS 62301	<ul style="list-style-type: none"> Energy Consumption (kWh/year) Noise (optional)
Freezers	C ($63 \leq \text{EEI} < 71$)	A+	SANS 941 SANS/IEC 62552	<ul style="list-style-type: none"> Energy Consumption (kWh/year) Noise (optional)
Ovens(S/M) Ovens(L)s	A ($E < 0,60$ kWh) B ($1,00\text{kWh} \leq E < 1,20\text{kWh}$)	N/A	SANS 941 SANS/EN 50304	<ul style="list-style-type: none"> Energy consumption Noise (Optional)
Washing Machines -Front Loaders -Top Loaders (N/S) -Twin Tubs (N/S)	A ($59 \leq \text{EEI} < 68$) EEI (kwh/per kg washed)= (AEC/ SAEC)*100	A	SANS 941 SANS/IEC 60456	<ul style="list-style-type: none"> Energy Consumption (kWh/cycle) Washing & Drying Performance Water Consumption Noise (dB)
Tumble Dryers	D ($0,67 < C \leq 0,75$) C=Kwh/cycle	C	SANS/IEC 61121	<ul style="list-style-type: none"> Energy Consumption (kWh/cycle) Noise (dB)
Dishwashers	A ($63 \leq \text{EEI} < 71$) EEI= (AEC/ SAEC)*100	A	SANS 941 SANS/EN 50242	<ul style="list-style-type: none"> Energy Consumption (kWh/cycle) Drying & Cleaning Performance Water Consumption Noise
Audio & Visual Equipment	Passive standby power ≤ 1 W	Passive standby power ≤ 0.5 W	SANS 941 SANS/IEC 62087 (SANS/IEC 62301 for other appliances)	<ul style="list-style-type: none"> Standby Power ≤ 1W, STB (3W) air conditioners & heat pumps exempted

TECHNICAL REQUIREMENTS OF VC 9008 CONT..

Refrigerators and Freezers

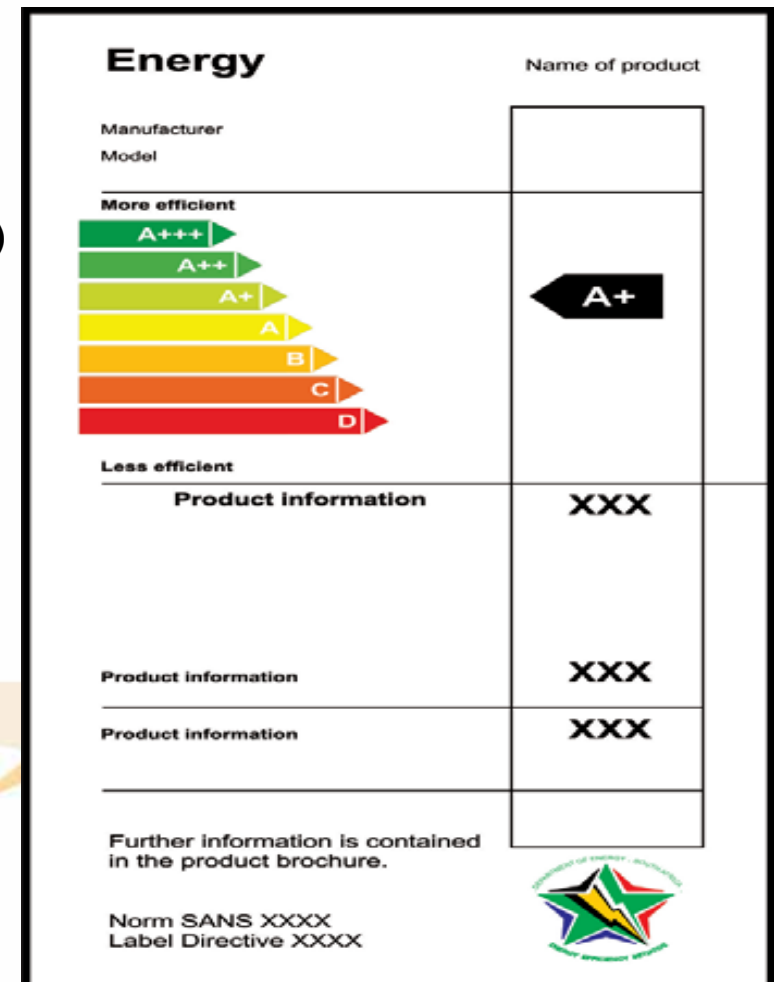
Energy Efficiency Index (EEI) = $(AC/SC)*100$

Where;

AC=Annual energy consumption (kWh per year), and
 SC=Standard annual energy consumption(kWh per year)

*The lesser the value the better the efficiency.

Energy Efficiency Class	Energy Efficiency Index per annum
A+++	EEI <22
A++	22 ≤ EEI <33
A+	33 ≤ EEI <42
A	42 ≤ EEI <55
B	55 ≤ EEI <75
C	75 ≤ EEI <95
D	95 ≤ EEI <100



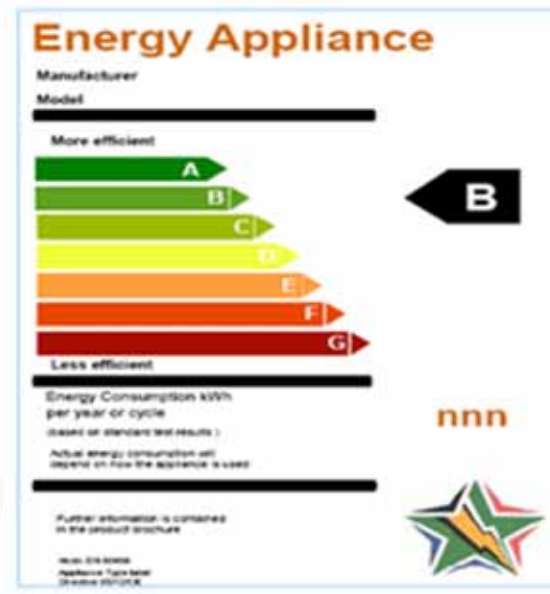
TECHNICAL REQUIREMENTS OF VC 9008 CONT..

Air Conditioners and Heat Pumps

Energy Efficiency Ratio (EER) = Cooling Capacity (kW)/ Input Power input (kW)

The higher the value the better the efficiency

Energy Efficiency	Energy Efficiency Ratio, at Full Load
A	$EER > 3.2$
B	$3.2 \geq EER > 3.0$
C	$3.0 \geq EER > 2.8$
D	$2.80 \geq EER > 2.60$
E	$2.6 \geq EER > 2.40$
F	$2.6 \geq EER > 2.20$
G	$2.20 \geq EER$

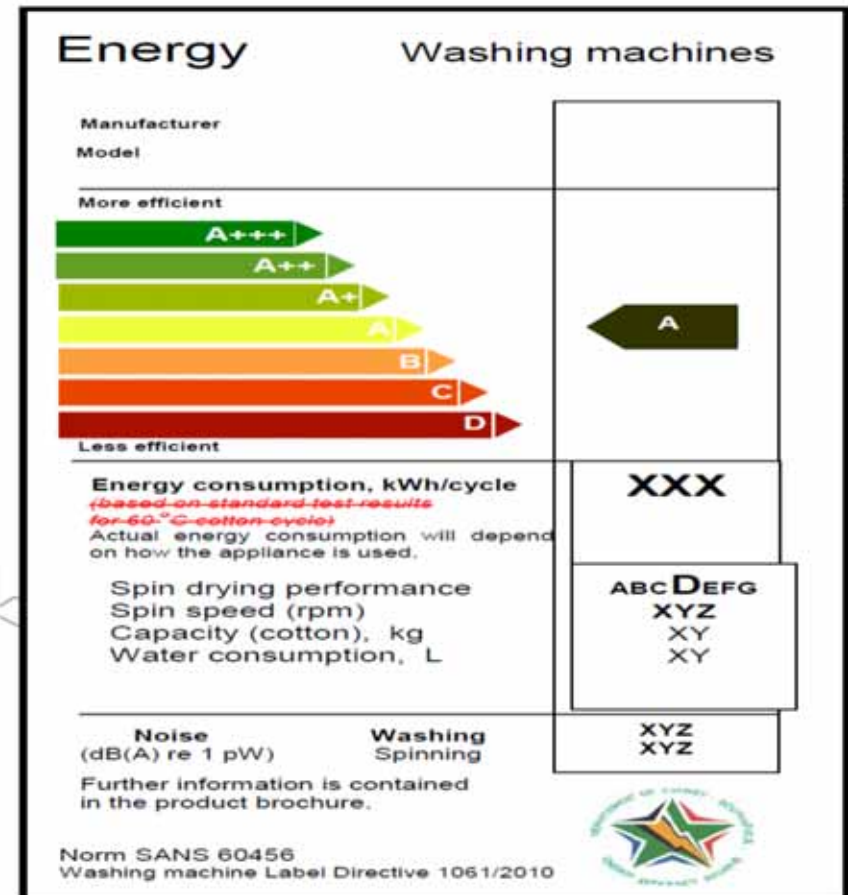


TECHNICAL REQUIREMENTS OF VC 9008 CONT..

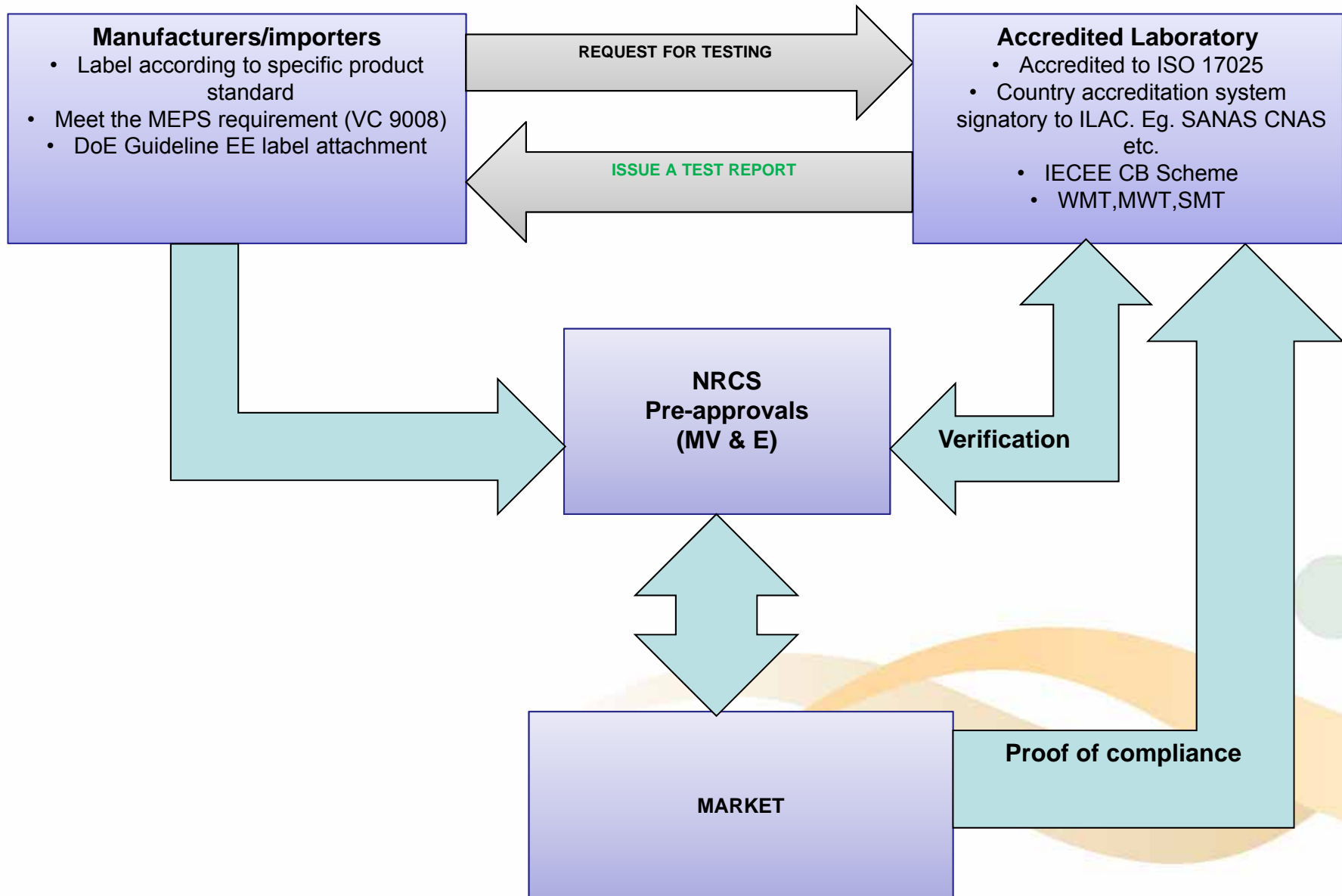
Washing Machines

The lower the value the better the efficiency

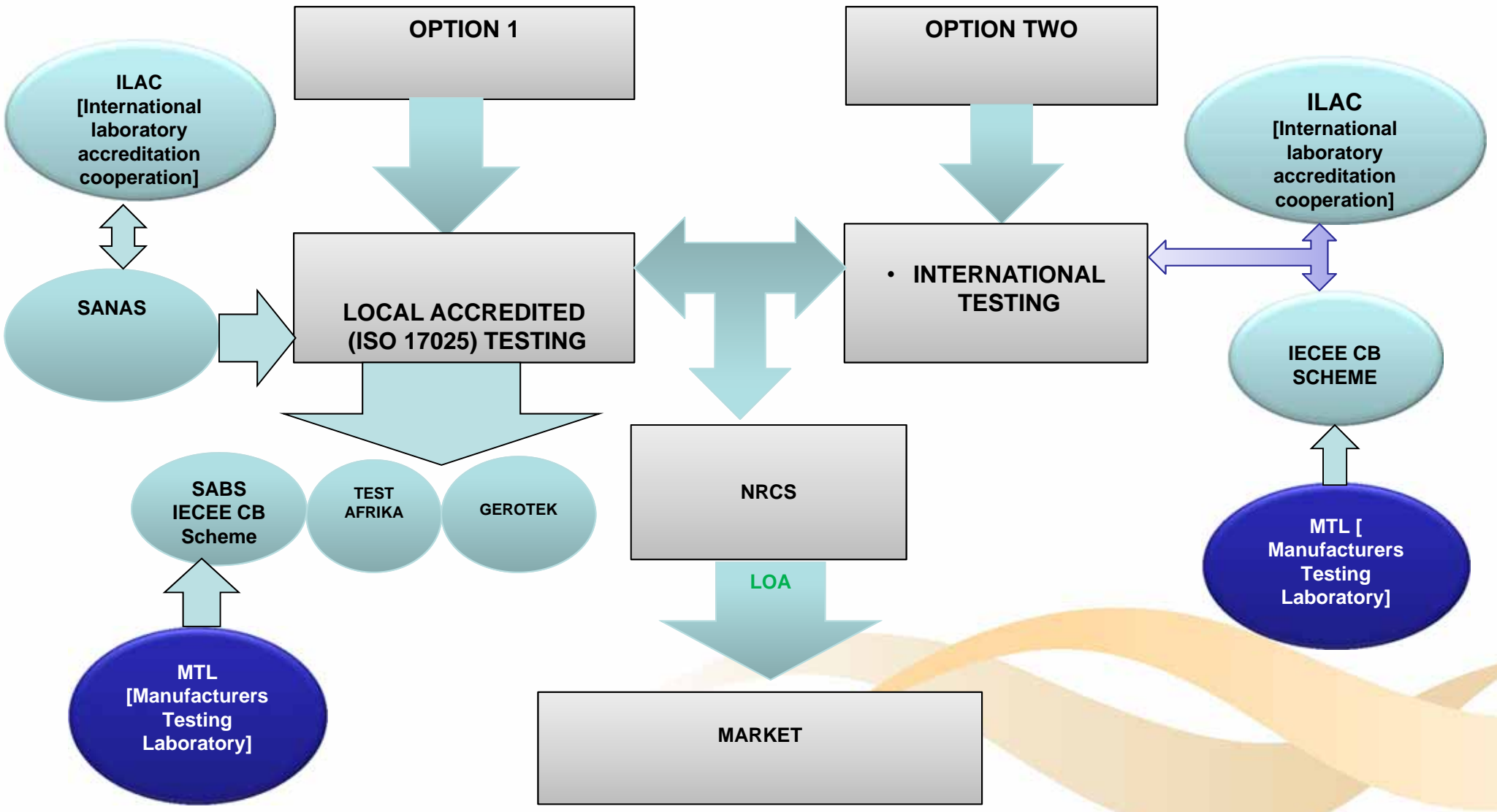
Energy Efficiency	Energy consumption for standard 60 ° C cotton cycle C kWh per kg washed
A+++	$C < 46$
A++	$46 \leq C < 52$
A+	$52 \leq C < 59$
A	$59 \leq C < 68$
B	$68 \leq C < 77$
C	$77 \leq C < 87$
D	$87 \leq C$



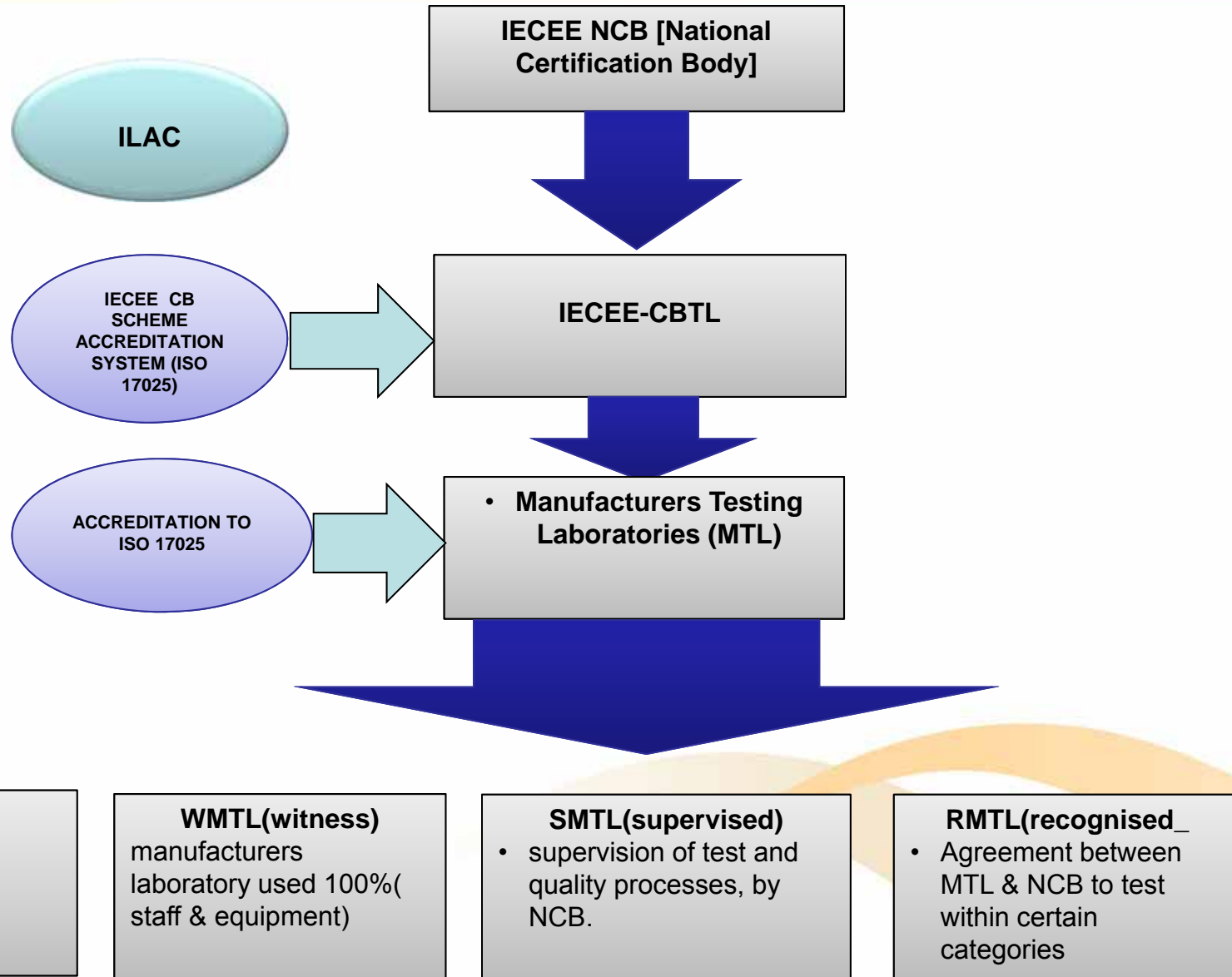
ADMINISTRATIVE REQUIREMENTS AND PROCESS FOR VC 9008



ADMINISTRATIVE REQUIREMENTS AND PROCESS FOR VC 9008



RECOGNITION OF MANUFACTURERS TESTING LABORATORY



POSSIBLE FUTURE REGULATION ON ENERGY EFFICIENCY

PRODUCT	AVAILABILITY OF STANDARDS	COUNTRIES ALREADY REGULATING
Self ballasted LED Lamps	IEC/SANS 62560 (safety standard), IEC/SANS 62612 (performance standard)	<ul style="list-style-type: none">• Europe• China• Australia/New Zealand• North America
Electric Motors	IEC/SANS 60034-2-1(general requirement), IEC 60034-30-1(energy efficiency levels)	<ul style="list-style-type: none">• Asia• Europe• North America• Australia/New Zealand



Thank you!

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