Launch of the IEA's Energy Efficiency Indicators Online Training for South Africa

28 June 2021

International Energy Agency

Workshop context and objective

The workshop will cover the following:

- The launch of the IEA online course on energy efficiency indicators:
  - Energy Efficiency Indicators: Fundamentals of Statistics
  - Energy Efficiency Indicators: Essentials for Policymaking

- Introduction of energy efficiency indicators and the importance of data collection and energy efficiency indicators development.

- How indicators can be used to measure the achievements of energy efficiency policy and its multiple benefits.

- Presentations of existing data and identification of indicators work in South Africa and the region

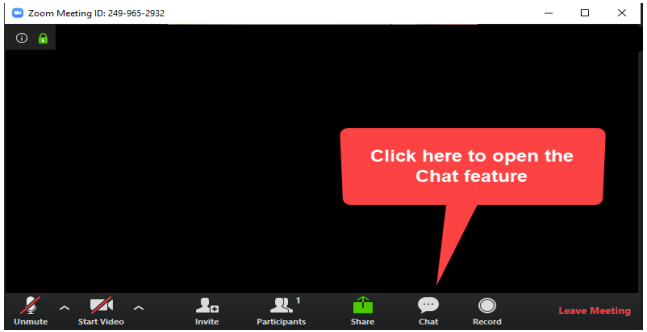
- A panel discussion to reflect on the key role of indicators in policy development and different multiple perspectives.

Agenda

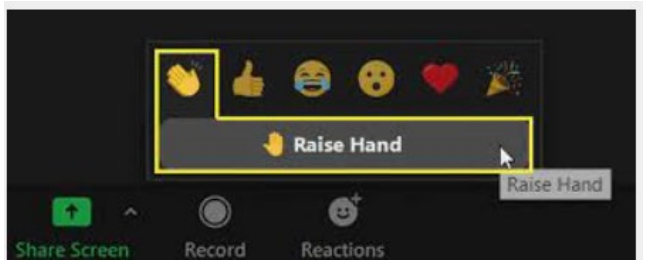
- **Opening remarks:**
  - Mr Xolile Mabusela, Director Energy Efficiency, Department of Mineral Resources and Energy
  - Ms Melanie Slade, E4 Senior Programme Manager, IEA
- **Importance of Energy Efficiency Indicators for Statisticians and Policy Makers –** Victor Garcia Tapia, Energy Data Centre, IEA
- **Key benefits for energy efficiency indicators work in South Africa and examples of current work –** DMRE and SANEDI
- **Data in the light of the just transition and additional benefits from energy efficiency –** DMRE
- **Regional perspectives on the importance of data and indicators to track progress -** Jalel Chabchoub, Chief Investment Officer / Energy Efficiency Expert African Bank of development (AfDB)
- **Panel discussion : Perspectives on data, policy and cooperation**
- **Introduction to Online Training Course and workshops –** Matthieu PRIN – E4 Programme Coordinator, IEA

Please share your questions and comments with us!

Please write your questions/comments in English via the chat option:



You can rise your hand using the Reaction option



Opening session

- Mr Xolile Mabusela, Director Energy Efficiency, Department of Mineral Resources and Energy South Africa
- Ms Melanie Slade, E4 Senior Programme Manager, IEA

Energy efficiency indicators: IEA's approach

Víctor García Tapia|International Energy Agency

Launch of the IEA's Energy Efficiency Indicators Online Training for South Africa, June 2021

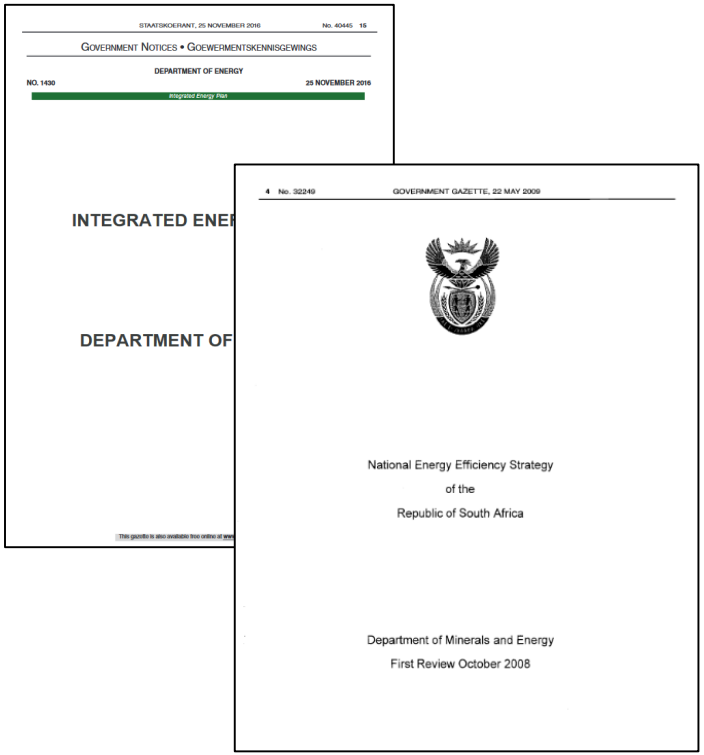
International Energy Agency

Good data for good policies

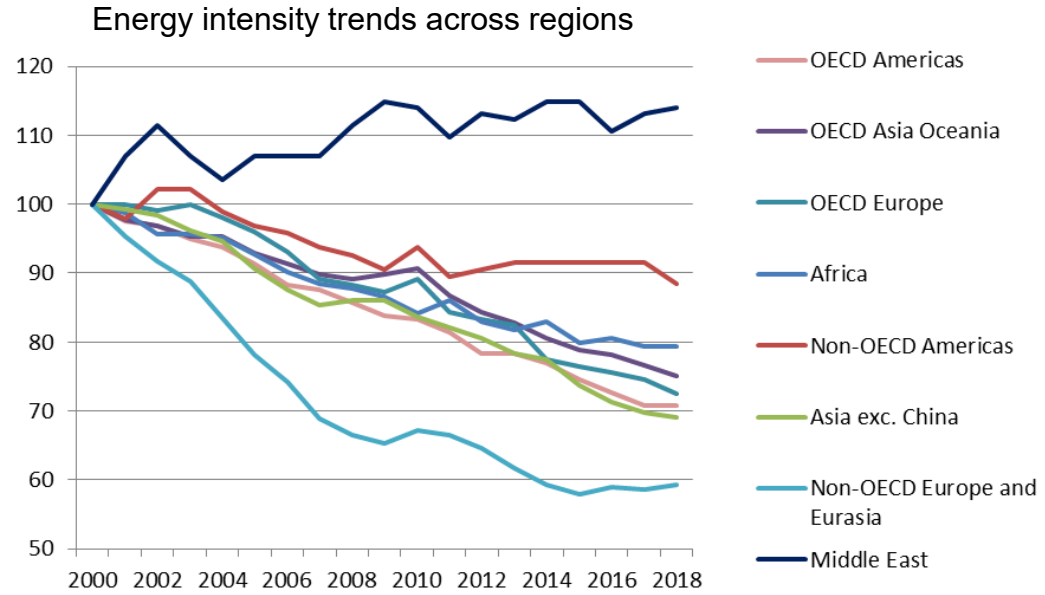
The case for energy efficiency and energy efficiency indicators

Energy efficiency data – key to set targets and monitor policy progress

- **Importance of Energy Efficiency** and its **multiple benefits**;
- Energy efficiency is becoming **more visible in political agendas** worldwide;
- However, **designing the right policies and monitoring the progress of energy efficiency should be evidence-based**, i.e. based on solid and comprehensive data.



Interpreting the economy-wide energy intensity trends



Source: IEA World energy balances

- Did the economic structure change?
- Did transport become more efficient?
- What about buildings?
- Which sector should be prioritized to meet targets?

…

To better understand intensity trends, more detail on demand is needed: end-use data

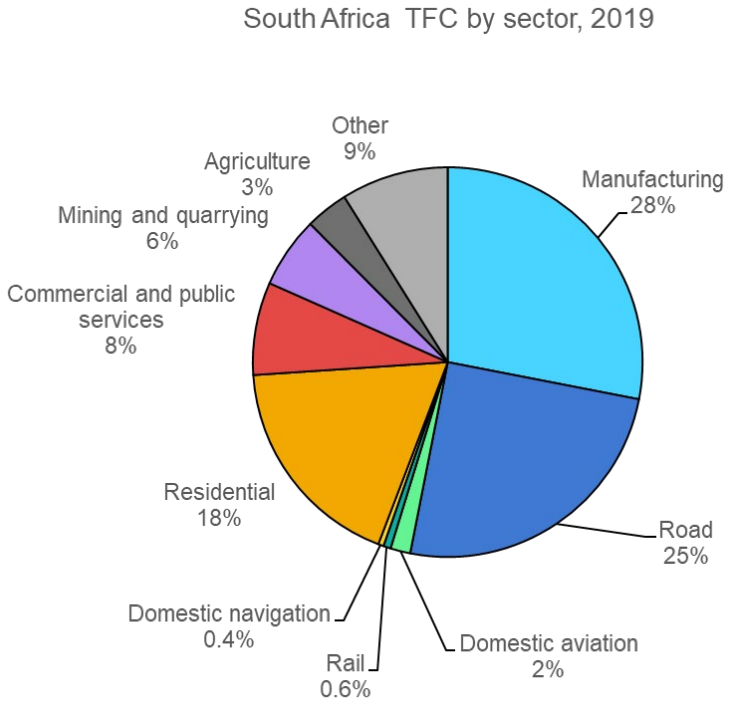
Sectoral breakdown of TFC can help identify priorities

Road transport consumes a quarter of the TFC

How do we track road transport efficiency?

We need more detailed data:

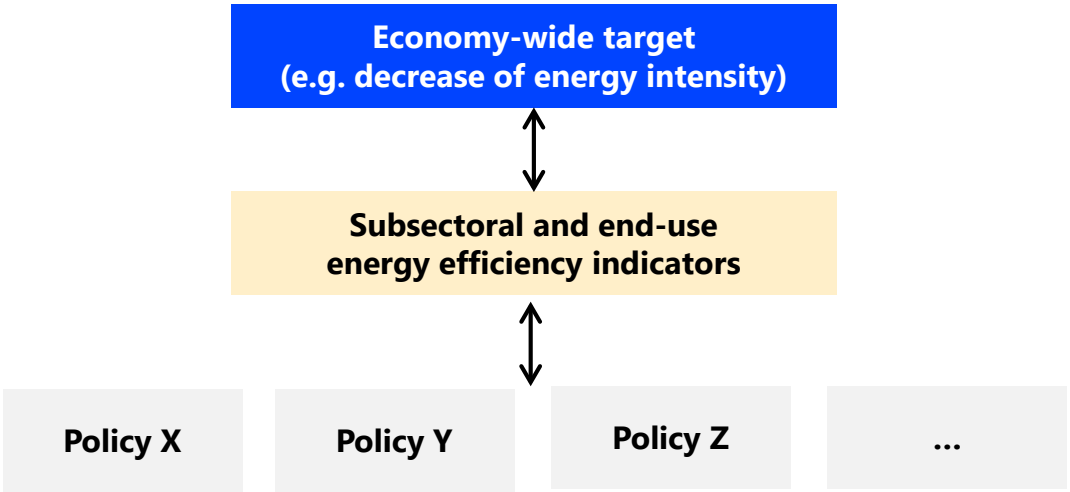
- consumption by vehicle type
  e.g. cars, buses, trucks
- activity data
  e.g. distance travelled, passenger/tonne-kilometres



Source: *IEA Energy Efficiency Indicators Highlights*

Identification of most important end uses is key for steering efficiency policies

How do the various measures impact the overall energy trends?

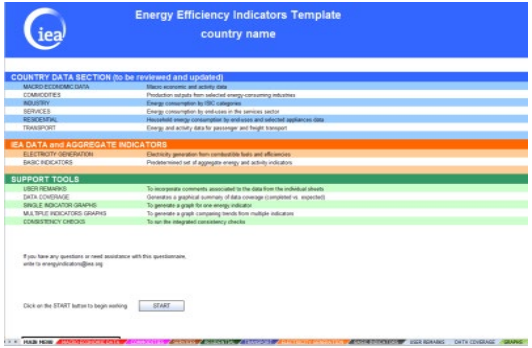


End-use energy efficiency indicators: basis to assess overall efficiency progress

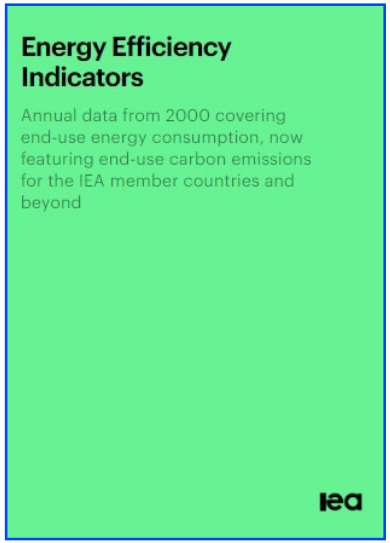
The IEA approach on end-use data and efficiency indicators

IEA Members recognize the value of end-use data work

- Agreed by member countries in 2009 (IEA Ministerial)
- Currently, **countries beyond IEA** also recognize the value and voluntarily collaborate
- **Developed with international community of experts**, (Odyssee, LBNL, etc.)
- A user-friendly **Excel questionnaire** (available online)
- Collects **energy consumption** and **activity** data
- Covers **four sectors**: residential, services, industry, transport
- **Publication** and **database** : *Energy efficiency indicators Highlights*



Energy efficiency indicators data collaboration



2021

- 44 countries were published in the database

COUNTRY		
Argentina	Armenia	Australia
Austria	Azerbaijan	Belarus
Belgium	Brazil	Canada
Chile	Czech Republic	Denmark
Finland	France	Georgia
Germany	Greece	Hungary
Ireland	Italy	Japan
Kazakhstan	Korea	Kyrgyzstan
Lithuania	Luxembourg	Mexico
Morocco	Netherlands	New Zealand
Poland	Portugal	Republic of Moldova
Slovak Republic	Slovenia	Spain
Sweden	Switzerland	Turkey
Ukraine	United Kingdom	United States
Uruguay	Uzbekistan	

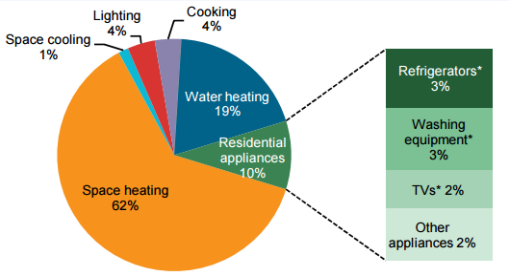
https://www.iea.org/data-and-statistics/data-product/energy-efficiency-indicators

The IEA is keen to collaborate on end use data and indicators with South Africa

Linking end-uses with activity data: example for residential

Energy end-use data:

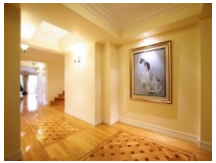
- Space heating*
- Space cooling*
- Water heating
- Cooking
- Lighting
- Appliances energy consumption:
  - Refrigerator
  - Freezer
  - Dishwasher
  - Clothes washer
  - Clothes dryer
  - TV
  - Computers



Activity data:

- Population
- Number of occupied dwellings
- Residential floor area
- Appliances stock and diffusion



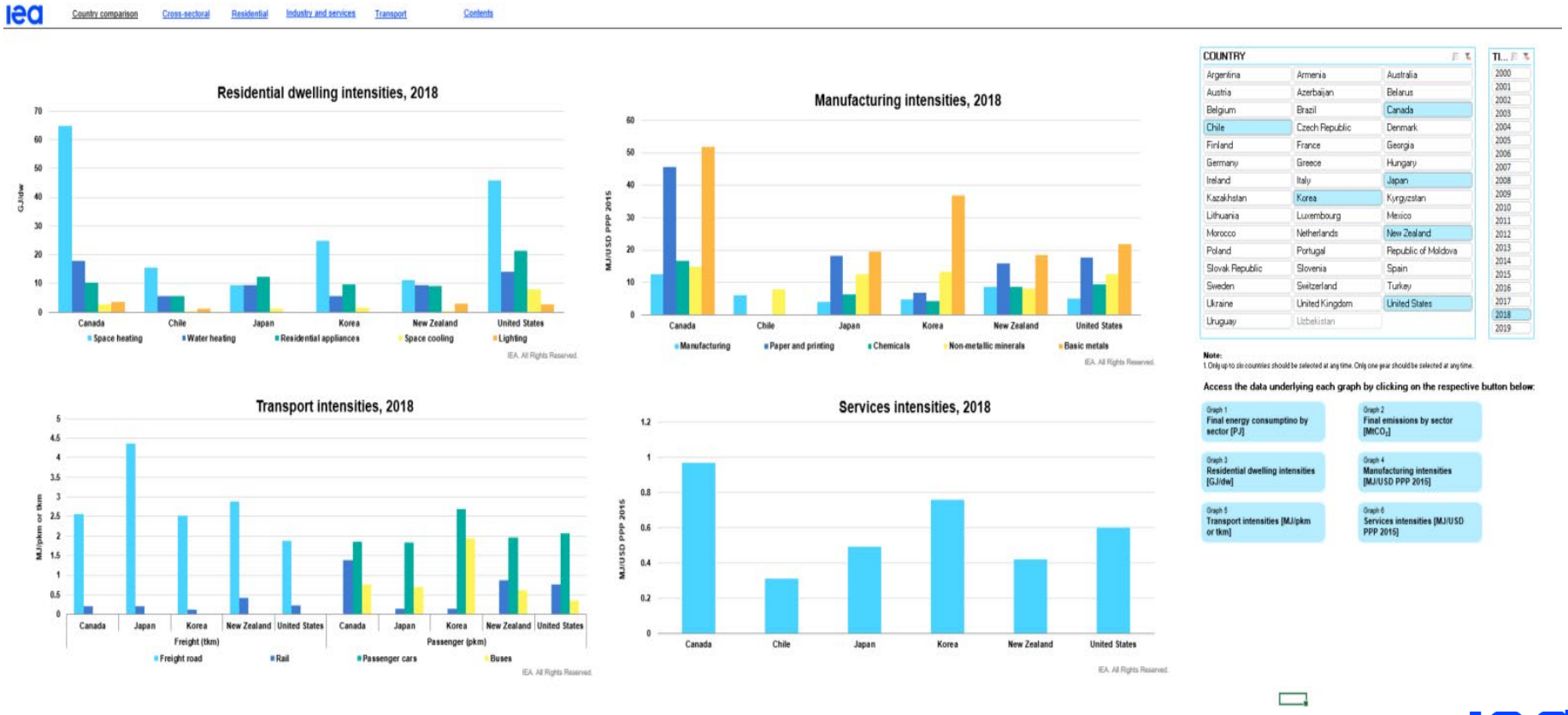



# of people | # of dwellings | Surface | # of appliances

generic energy efficiency indicator = **Energy end-use / activity**

* Temperature corrected, using HDD & CDD

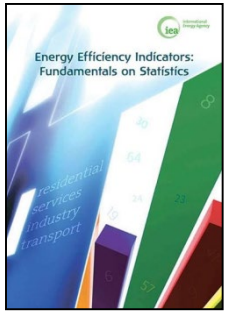
Energy Efficiency Indicators Database



The pillars of the IEA online courses: indicators methodologies

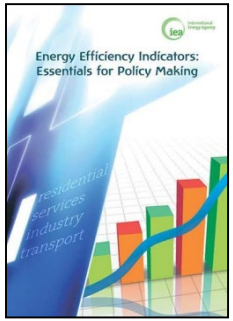
➢**Fundamentals on statistics:**
to provide guidance on how to collect the data needed for indicators

- Includes a compilation of existing practices from across the world
- https://www.iea.org/reports/energy-efficiency-indicators-fundamentals-on-statistics



➢**Essentials for policy makers:**

- To provide guidance to develop and interpret indicators
- https://webstore.iea.org/energy-efficiency-indicators-essentials-for-policy-making

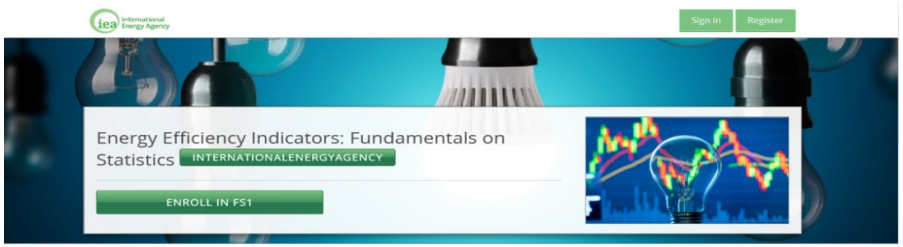


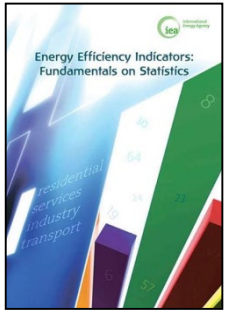
Both available also in:
Spanish
Russian
Chinese
French

International guidelines are key to ensure comparability of data and indicators across countries

IEA e-learning courses: capacity building on energy efficiency data

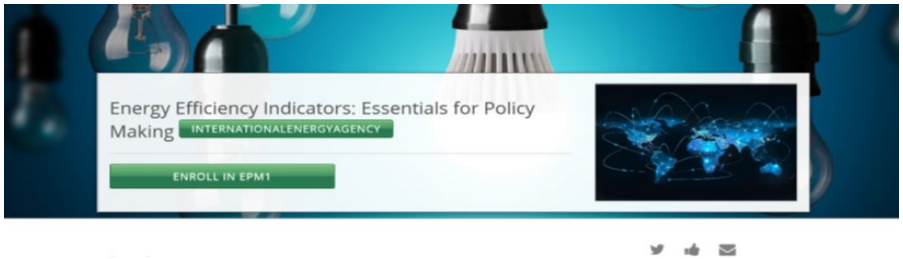
- **Energy Efficiency Indicators: Fundamentals on Statistics**

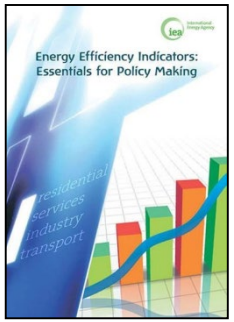




https://elearning.iea.org/

- **Energy Efficiency Indicators: Essentials for Policy Making**





Final remarks: the importance of energy efficiency indicators

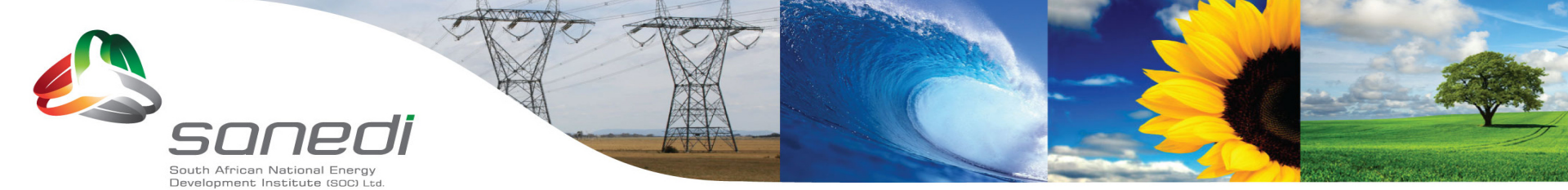
- Detailed energy end-use and activity data - and indicators - are vital for energy efficiency policy, across sectors and end-uses.

- Indicators require sound methodologies, and should be comparable – online courses are a useful resource.

- The IEA remains available to facilitate national work and provide methodological support

Key benefits for energy efficiency indicators work in South Africa and examples of current work

Department of Mineral Resources and Energy and South Africa National Energy Institute



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ENERGY PERFORMANCE CERTIFICATES (EPC's) for CERTAIN BUILDINGS in SOUTH AFRICA

Launch of the IEA's Energy Efficiency Indicators Online Training for South Africa

mineral resources & energy
Department:
Mineral Resources and Energy
REPUBLIC OF SOUTH AFRICA

Barry Bredenkamp
SANEDI
28 June 2021

mandate

The ***National Energy Act***, *2008 (Act No. 34 of 2008), Section 7 (2)* provides for **SANEDI** to direct, monitor and conduct ***energy research and development***, as well as undertake measures to promote ***energy efficiency*** throughout the economy.

www.sanedi.org.za

FLY THE FLAG
for South Africa

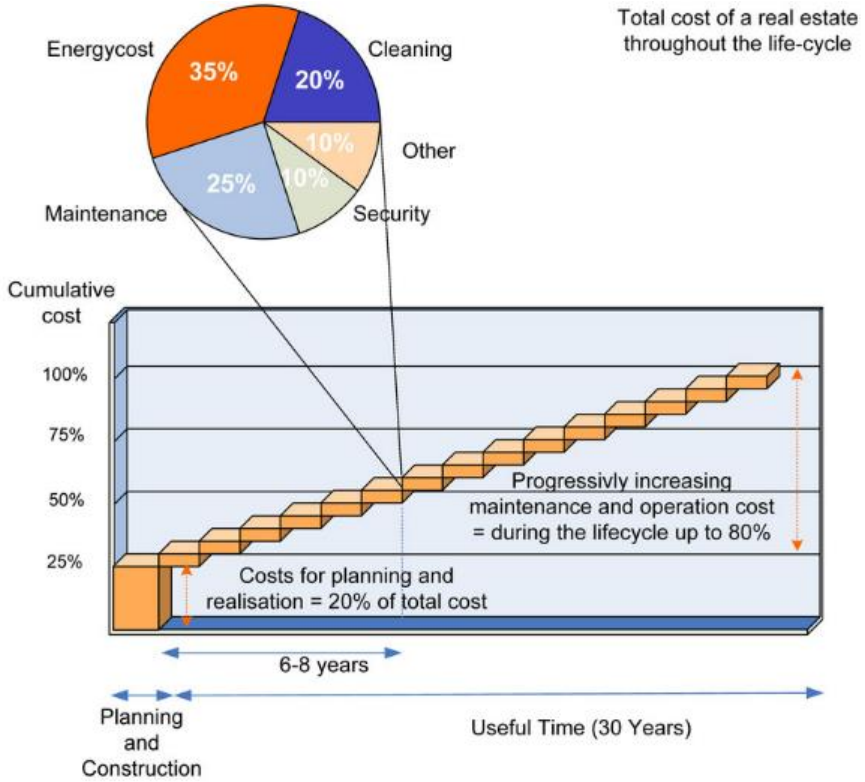
National Energy Efficiency Strategy, (2030)

Sector	2030 Target, (based on 2015)	Examples of Actions
Economy-wide	29%	
Industry & Mining	16%	Energy management, Carbon Tax, 12L (incentive)
Residential	33%	Building Standards, Appliance Labelling
Public Buildings	**50%**	Building Standards, DPW Policy, **Energy Performance Certificates**
Commercial	**37%**	Building Standards, DPW Accord, **Energy Performance Certificates**
Agriculture	30%	Modernisation
Transport	39%	Vehicle Efficiency Standards, Carbon Tax
Municipal Services	20%	Energy Service Companies,
Power Sector-distribution non technical issues	8% 0.5%	Mandatory efficiency improvements, Cogeneration, Waste Heat Recovery

Why Energy Performance Certificates?

- Energy Performance Certificates (EPCs), are used to focus on energy efficiency & promote *'energy transparency'.*
- For establishing a register & database of information on energy performance of buildings, which can be used to support policy development by government.
- Existing Building Stock (~33%), carbon emissions & needs to be addressed.
- To benchmark the energy performance of a building against industry benchmarks or national norms.

Looking at Lifecycle Costs of Buildings

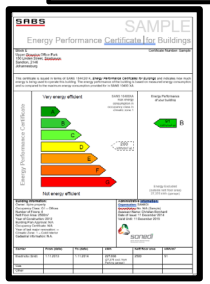


ENERGY PERFORMANCE CERTIFICATE (EPC) APPLICATION PROCESS

Eligible **Customer (Applicant)** must source a **SANAS-accredited EPC Inspection Body (IB)** for a quote to do an EPC assessment/s

SANAS-accredited EPC Inspection Body enters into a contractual arrangement with the Client & conducts an assessment according to **SANS 1544:2014**

The **SANAS-accredited IB** submits an electronic copy of all specified **data** used to determine the EPC-rating to **SANEDI, to populate the National EPC Building Register & issue a unique EPC Certi…te number**



The IB ISSUES the EPC to the Applicant

The Client's **Accountin g Officer** to submit an electronic copy of the EPC Certificate to SANEDI

DMRE appoints and commissions random annual spot-check **compliance audits**

SANEDI sends an initial Renewal Reminder to Applicant and EPC-IB after ***3 years***

SANEDI sends a FINAL Renewal Reminder to Applicant and EPC-IB after ***4 years***, ***(EPC expires after 5 years)***

Issuing the EPC

- To be done by a competent, accredited person.
- Independent third party/ SANAS Accredited body.
- SANS 1544: 4.4.1 All energy consumption data shall be assessed by a body that has been accredited by the relevant national body, *i.e.* SANAS and submitted to SANEDI, together with a copy of the EPC.

sanas
South African National Accreditation System

Name of building			A Government Building		
Occupancy class	Office (G1)		Climatic zone	1 (Cold interior)	
Occupancy rate (in net floor area)			C (100 %)		
A - Energy used in entire building complex					
Energy used for	Heating	Cooling	Lighting	Electrical appliances	Outside net floor area (specify under B)
Please tick	x	x	x	x	x
Energy source		**From (date)**		**To (date)**	**kWh used**
Electricity		2011/01/01		2011/12/31	415,000
Gas		n/a		n/a	
Other		n/a		n/a	

B - Energy used outside net floor area					
Energy used for	**Watts**	**N°**	**Time of use**	**Calculation**	**kWh used**
Lights parking	58	25	24/7	0,058[kW]·25·24[h]·365[d]	12,702
Outside lights	100	120	8 h/d	0,1[kW]·120·8[h]·365[d]	35,040
Ventilation storage	45	1	24/7	0,045[kW]·25·24[h]·365[d]	9,855
Fridges storage	500	2	24/7	0,5[kW]·2·24[h]·365[d]	8,760
Total					**91,761***
* Represents more of 10 % of total consumption [415,000 kWh] therefore displayed in EPC as excluded energy in kWh/(m²·a) [91,761/1,250]					73

C - Net floor area					**1,250 m²**
Energy used in entire building complex in kWh	415,000		Consumption outside net floor area in kWh		91,761
Energy consumption net floor area in kWh					**323,239**
Energy consumption net floor area in kWh/(m²·a)					**259**
Maximum energy consumption (SANS 10400-XA)	Occupancy class	G1-Office	Climatic zone	1	200
Variance **kWh/(m²·a)** [259-200]					59
Multiple of reference value [259/200]					1,29
Performance scale (see 5.1.3)					**E**

Basic Data Requirements

The EPC Certificate

A Government Building
Light House
23 Energy Street
Anytown
12345

Certificate Number 123-456

This certificate is issued in terms of SANS XXXX:2013. Standard for Energy Performance Certificates for Buildings. and indicates how much energy is being used to operate this building. The energy performance of the building is based on measured energy consumption, and is compared to the maximum energy consumption provided for in SANS 10400 XA 20XX

Energy Performance Certificate

Very energy efficient

SANS 10400XA max energy consumption in occupancy class in climatic zone 1

Energy Performance of your building

A
B
C
D
E
F
G

200 kWh/(m²·a)

259 kWh/(m²·a)

Energy Excluded (outside nett floor area) 73 kWh/m²/a

Not energy efficient

Building Information:
Owner: Property Portfolio (Pty) Ltd
Occupancy Class/es: G1 – Offices
Number of Floors: 12
Nett Floor Area: 2730m²
Year of Construction: 1955
Building Plan Approval: 1955/02/21
Occupancy Certificate: 1956/05/21
Year of last major renovation: 1999
Climatic Zone: 3 – Hot Interior
Cadastral Information: erf 3 Farm Soutfontein

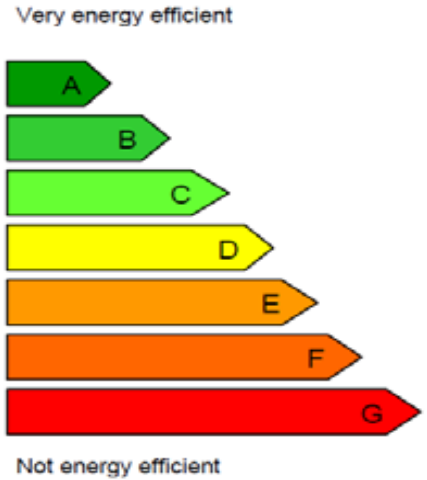
Administrative Information:
Accredited Body: Energy Auditors Inc
Accreditation No. SANAS 98765
Assessor Name: A N Assessor
Date of Issue: 1 July 2013
Valid Until: 31 June 2018

Carrier	From (date)	To (date)	kWh	Nett floor area	kWh/m²
Electricity (Grid)	2012.01.01	2013.01.01	400 000	1000	400
Gas					
Other					

"energy performance" means net energy consumed in kilowatt hours per square metre per year (kWh/m²/a) to meet the different needs associated with the use of a building, which may include heating, hot water heating, cooling, ventilation and lighting but excluding measured or assessed energy consumed by garages, car parks and storage areas as well as energy consumed by outdoor services;

"energy performance certificate" means a certificate issued by an accredited body in respect of a building in accordance with SANS 1544 that indicates the energy performance of that building;

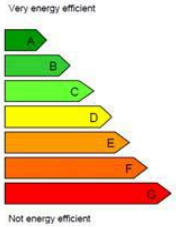
Reference Maximum Energy Consumption: SANS 10400XA



1	2	3	4	5	6	7	8
Classification of occupancy of building	Description of building	Maximum energy consumption kWh/m²					
		Climatic zone[a]					
		1	2	3	4	5	6
A1	Entertainment and public assembly	420	400	440	390	400	420
A2	Theatrical and indoor sport	420	400	440	390	400	420
A3	Places of instruction	420	400	440	390	400	420
A4	Worship	120	115	125	110	115	120
F1	Large shop	240	245	260	240	260	255
G1	Offices	200	190	210	185	190	200
H1	Hotel	650	600	585	600	620	630

Existing buildings which have been in operation to meet a particular need for a period of ***2 years or longer***, and which have ***not been subject to a major renovation*** or ***change of occupancy*** within the **2 years prior** to the assessment period and **based on Actual Energy Consumption!**

The Applicable Standard: SANS 1544




SANS 1544:2014

SOUTH AFRICAN NATIONAL STANDARD

Energy performance certificates for buildings

Committee draft

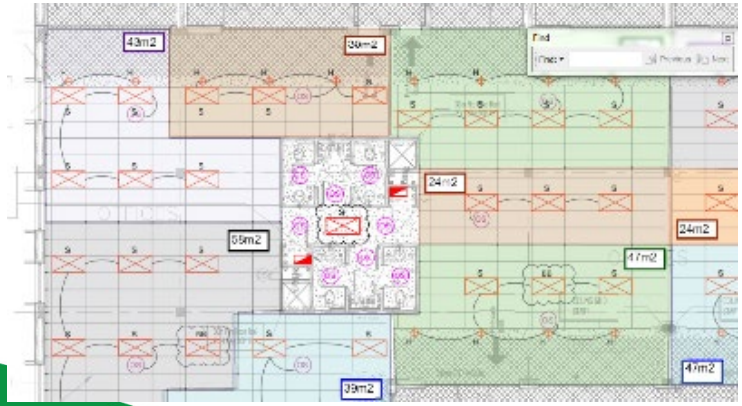
SABS

Basis of SANS 1544:2014

- Energy performance of the building - **measured** annual net energy consumption ***(kWh/m2/pa),*** of the net floor area;
- All energy carriers, ***(not only electricity);***
- One year's energy consumption, from:-
  - recorded data,
  - energy bills or
  - measurements;
- EPC **valid for five years** from the date of issue and for the occupancy class(es) stated.

An Example: Unoccupied floor area

- Net floor area is *“Normalised”* for unoccupied floor areas
- Effective energy consumption = measured net energy consumption/ occupied net floor area
- Occupied net floor area = net floor area, minus the unoccupied floor area.



An Example: Mixed Occupancy

- Any occupancy with less than 10% of net floor area will be included in the *dominant occupancy*
  - Unless the energy consumption is greater than 10% of the total energy consumption
- A pro-rated energy-consumption value will be calculated for occupancies greater than 10% of net floor area.

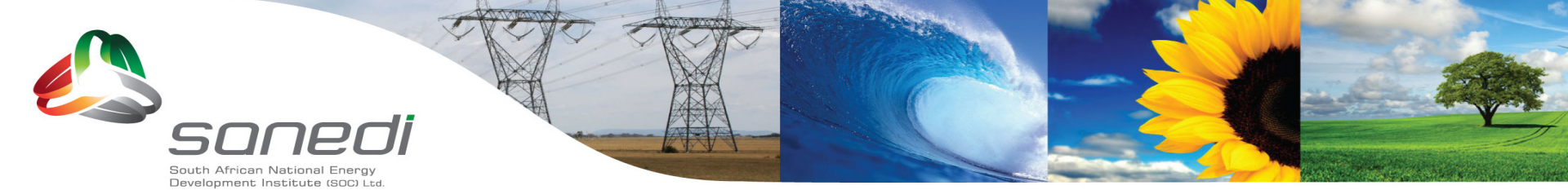
Building Energy Performance Register, (BEPR)

- SANEDI to establish the National Building Energy Performance Register (BEPR), to record energy data from EPCs.
- Feedback loop into updating the SABS 10400-XA.
- Ensure transparency when selling or leasing properties.
- Data is confidential and used for analysis/ modelling, but obviously, the EPC Register will be public!

CONCLUSION

- EPCs provide a huge opportunity for:
  - Job creation
  - Training and Skills Development
  - Identifying Energy Efficiency opportunities for ESCo's
  - Stimulating technology adoption, e.g. SMART-options
  - Ultimately contributing to a reduction in energy consumption and Greenhouse Gas Emissions.

- Inclusion of additional building categories and tightening of the kWh/m_2 criteria – still to be decided!



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THANK YOU

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ENERGY INNOVATION FOR LIFE

Industrial Energy Efficiency (IEE) Phase 2 Project Pulp & Paper and Automotive Sub-sectors

Department of Mineral Resources and Energy
and South African National Energy Development Institute

28 June 2021

mineral resources & energy
Department:
Mineral Resources and Energy
REPUBLIC OF SOUTH AFRICA

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2030 NDP

PRESENTATION OUTLINE

- Post-2015 National Energy Efficiency Strategy (NEES) Overview
- Energy Efficiency Targets, 2015 – 2030
- Industrial Energy Efficiency (IEE) Phase 2 Project

- A vision that requires the **promotion of energy efficiency** as the "**first fuel**" in driving a balanced, socially inclusive and environmentally sustainable economic growth, boosting job creation and leading technological innovation across the region.

- Proposed consistent **support to business**, **households** and **industry associations** to take advantage of the energy efficiency opportunities of increased availability of affordable, good quality, energy efficient technologies on the local market.

- **Energy efficiency policy measures** that are expected to deliver economic-wide and sub-sectorial energy efficiency improvement by 2030.

Energy Efficiency Targets 2015 - 2030

1. Transport Sector

20% reduction in vehicle energy intensity

2. Industry Sector

16% reduction in energy consumption

3. Mining Sector

Annual energy saving of **40PJ** in the mining sector.

4. Residential Sector

33% reduction energy consumption of new household appliances

8. Electricity Production & Generation

Electricity distribution losses below **8%** and average non-technical losses of below **0.5%.**

16% energy efficiency improvement by 2030

4. Commercial Sector

37% red. in the specific energy consumption

7. Agriculture Sector

Electricity saving of **1 PJ**

6. Municipal Services

20% reduction in energy intensity of municipal provision.

5. Public Buildings

56% reduction in the specific energy consumption.

Regulations and Energy Efficiency Target Monitoring System

The existing regulations on **mandatory provision of energy data** published in February 2012 is in a process of amendment and will include:

- (i) **Registration and reporting** of energy consumption data and activity for companies exceeding a **threshold of 160 TJ per annum** and;
- (ii) Submission of **Energy Management Plans** for companies **exceeding 400 TJ per annum** for a period of 5 years
- **The Energy Efficiency Target Monitoring Systems (EETMS**) is being revised to monitor and track changes in energy efficiency and achievement of targets as proposed in the post 2015 **(NEES)**

Identified Sectors for Implementation

- Iron and steel;
- Non-ferrous metals;
- Non-metallic minerals;
- Chemicals;
- Paper and pulp;
- Textile;
- Automotive;
- Manufacturing;
- Mining and non-manufacturing industry;
- Agriculture and agro-processing targeted under the Industry and Mining

SA IEE Phase II Project

1.0 Data Quality Improvement to Facilitate Data Rich Industrial Energy Efficiency and Energy Management Policy

2.0 Strengthening Policy Implementation and Support Frameworks for EnMS, ESO and Energy Management Standards

3.0 Mainstreaming EnMS and ESO Training and Skills Development Programmes

4.0 Investment promotion in IEE through demonstration of EnMS and ESO Support to financial mechanisms

5.0 EnMS and ESO Awareness, Promotion, Service Demand Generation and Lessons Sharing

6.0 Project Monitoring and Evaluation

South Africa's Energy Transition

Key Performance Indicators for an orderly transition

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28 June 2021

mineral resources & energy
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REPUBLIC OF SOUTH AFRICA

2030 NDP

Context

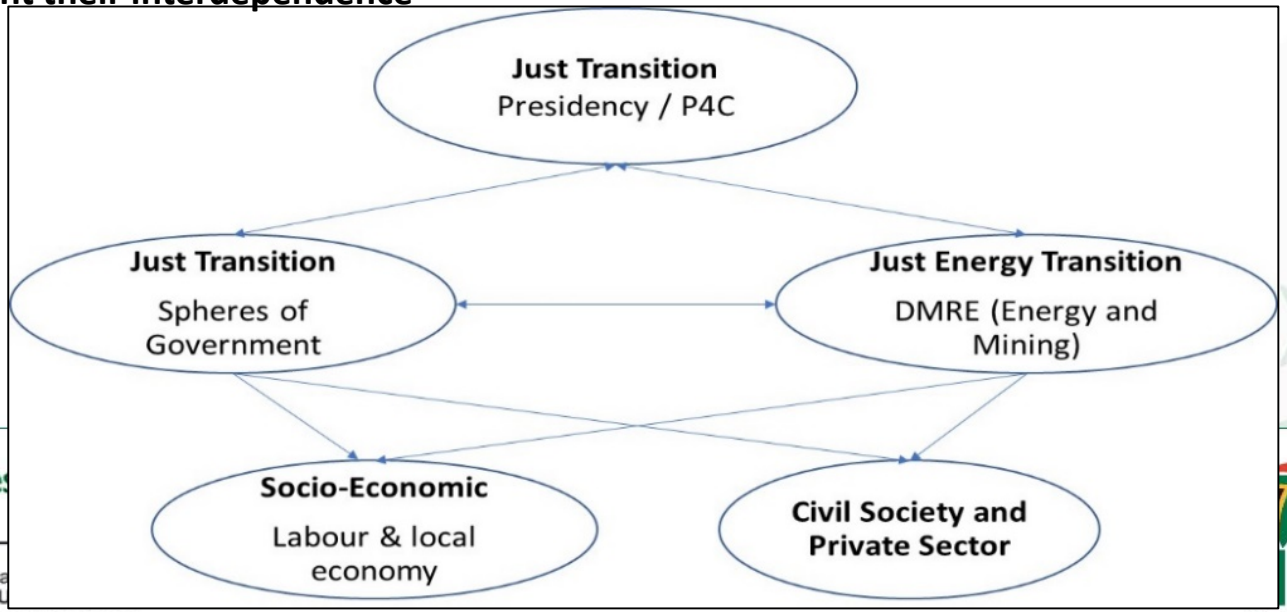
- Coal accounts for ~75% of primary energy production– source of main economy especially in Mpumalanga **(Transition may take time)**
- Clean energy transitions are gaining significant momentum around the world, and South Africa as part of global collective expressed its commitment to transition though Nationally Determined Contributions under Paris Agreement
- Supported by National Development Plan (NDP), Integrated Resource Plan (IRP2019), Post 2015 National Energy Efficiency Strategy (NEES), Carbon Tax, Draft Climate Change Bill.
- SA led a comprehensive **social dialogue on Just Transition Framework** through the NPC, and it is now considering **2050 net zero pathways through the recently established Presidential Climate Commission (PCC)**

Context Cont…

- Competing interests of various role players and trade offs amongst stakeholders on policy choices
- Currently Eskom has started with the planning process for the decommissioning of their 4 coal power plants and in **line with the 2019 IRP commits the DMRE to ensure that as such a transition that provides for measures such as RE and other sources should be just**
- The DMRE is committed to **lead and manage the energy transition to maximise the multiple economic and societal benefits**
- The underlining message from consultations is that the transition, especially energy transition should contribute to the **eradication of triple challenges of poverty, inequality & unemployment**

Structural Approach

- A DMRE recognise the need for extensive planning, cooperation and collaboration for the **Just Energy Transition.**
- This approach adopted aligns with core principles of the country's cooperative governance approach.
- This was also adopted to make it possible to draw a **distinction between JT and JET**, and to **highlight their interdependence**

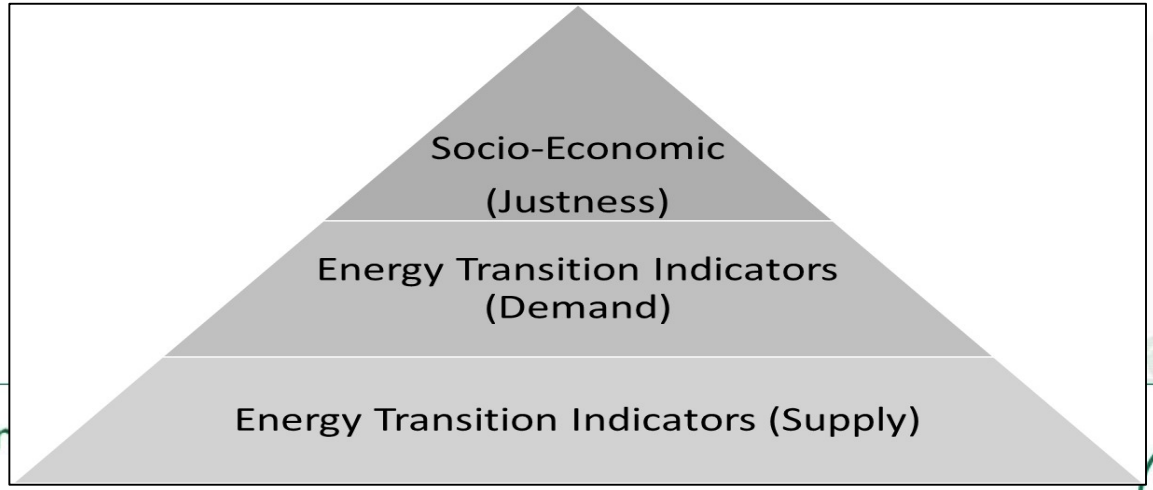


A JET Based on Strong Foundations

- **Sustainable development** - that requires striking a ***balanced new approach*** to ***environmental, social and economic*** development in the wake of the recent economic.
- **Prudent government led transition policies** – This should ***avoid external influence on policy framework***, enable mobilization of ***technological innovative solutions*** and the necessary ***financial support*** to ensure that the transitions is done in the manner that is ***not disruptive to the energy and economic system***.
- **People centred transition** trough active participation in ***decision making*** and ***adequate support*** in terms of ***skills and capacity*** to people and communities negatively impacted by the transition to a low carbon energy economy.
- **Ensuring transparency** and **accountability** as a key ingredient that informed our consideration for JET ***indicators*** in line with international best practices.

A KPI Framework for South Africa's JET

1. Looked at indicators that speaks to the reality of the current situation in South Africa
2. The collection of energy supply-side transitional indicators.
3. Demand-side indicators via energy efficiency (EE) is an integral part of the energy transition and well established within the DMRE (NEES).
3. The third layer manages local socio-economic factors specific for South Africa– **quality jobs, skills and capacity** for communities



DMRE Milestones towards achieving a JET

1. **Adopt a JET definition**
2. **Define DMRE JET targets**
3. **Establish DMRE JET Unit**
4. **JET Implementation Plan**
5. **Review of KPI's**

Just Energy Transition KPI (under consideration)

Supply Side	Demand Side	Social Side
- Electricity affordability - Air pollution - Carbon intensity - Carbon emissions - Energy transition investment - Energy mix	- Energy policy coverage - Electricity affordability - Electrification rate - Energy intensity - NEES sectoral targets	- Retain/reskill workers, including youth and gender-balanced - Social protection packages/incentives - Advocacy

Conclusion…

- **Working with SANEDI to monitor the impact of JET initiatives through a well managed JET database system**
- **Further stakeholder consultation on the JET Framework**
- Further cooperation with international community, especially with the IEA on strengthening the JET framework ant its KPIs

Thank you

Regional perspectives on the importance of data and indicators to track progress for energy efficiency

Jalel Chabchoub, Chief Investment Officer / Energy Efficiency Expert African Bank of development (AfDB)

Panel Discussion

International Energy Agency

Energy Efficiency Indicators Online Courses

Matthieu Prin, E4 Programme coordinator, International Energy Agency

28 June 2021

International Energy Agency

IEA Key Online Training Opportunities

https://elearning.iea.org/

International Energy Agency

Energy Efficiency Indicators: Fundamentals on Statistics

International Energy Agency

Energy Efficiency in Buildings

International Energy Agency

Energy Efficiency Indicators: Essentials for Policy Making

International Energy Agency

Sustainable Energy Policies for Smart Cities

Fundamentals on Statistics and Essentials for Policy Making

- Available in **English,** Chinese, **Bahasa,** Spanish, Portuguese
- Adapted from IEA's energy efficiency indicators manuals: 'Energy Efficiency Indicators: Fundamentals on Statistics' and 'Energy Efficiency Indicators: Essentials for Policy Making' (2014)
- Fundamentals on Statistics target audience: statistical officers, energy statisticians and analysts, and anybody engaged in data related processes (researchers, academics, consultants, environmental managers, civil society representatives)
- Essential for Policy Making target audience: high- and mid-level policy makers, experts, and statistical officers from Ministries of Economy, Energy, Industry, Infrastructure, Transport, Building and Construction

What do the courses cover?

1. Why indicators? A methodological framework
2. Data & indicators for the **residential** sector
3. Data & indicators for the **services** sector
4. Data & indicators for the **industry** sector
5. Data & indicators for the **transport** sector

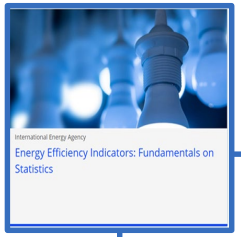
International Energy Agency

Energy Efficiency Indicators: Fundamentals on Statistics

International Energy Agency

Energy Efficiency Indicators: Essentials for Policy Making

After completing the course, participants will be able to:



Statistics

- Identify the set of indicators that can be developed across sectors
- Clarify the role of detailed data collection for effective EE indicators and policies
- Explain the process of formulating disaggregated EE indicators
- Define available approaches for EE surveying, metering and modelling

Policy

- Explain the importance of data for effective energy efficiency policies
- Discuss the role of energy efficiency indicators at various levels for prioritising sector-specific energy efficiency policies
- Identify suitable energy efficiency policies in key sectors based on available data and indicators

Format of the courses

- Based on the MOOC model: open and massive online course, available 24/7
- 10 hours, for 2 to 4 weeks
- Classes:
  - Videos, reading, slides
  - Discussion fora to reflect on own experience
  - One evaluation per module
- Questions to instructors through the IEA Energy Efficiency Policy in Emerging Economies LinkedIn Group
- Help desk

Completion Certificates

In order to successfully complete the course, participants need to:

- Pass all 5 Module assessment tests (with a minimum score of 70%).
- Make a minimum of 2 contributions to the discussion fora;
- Complete the course evaluation survey.

- Participants who successfully complete the course will receive an IEA certificate, which can be linked to LinkedIn profiles.

https://elearning.iea.org

Closing remarks.

Thank you for participating!