WORLD CLASS MINERALS AND ENERGY SECTORS THROUGH SUSTAINABLE DEVELOPMENT

# Review of South African Energy Statistics

## DEPARTMENT OF MINERALS AND ENERGY

the dme
Department:
Minerals and Energy
REPUBLIC OF SOUTH AFRICA

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# Presentation structure

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# General Introduction

- The Department of Minerals and Energy, South Africa has energy statistics dating from 1987
- Initially data collection was done using consultants
- Data for 2001 to date have been collected in-house by the DME
- Data from 1991 onwards have been collected and published as energy balances according to International Energy Agency (IEA) Standards.

# Collection of Data

- We have a list of data providers and they are mainly from the energy industry example refineries, power utilities, regulators and intensive energy users
- Other data (Mineral data, EE and RE data)  have been collected on our behalf by other divisions within DME
- We also get data from the South African Revenue Services and Statistics SA

# Collection of data

- Most of the data are collected from the suppliers of energy-thus we have a limited amount of data from the demand side
- Data are categorised as per IEA format
- Data is stored on excel spreadsheets on the DME server

# Documentation and Methodology

- The DME uses excel spreadsheets that can convert physical units into energy units and create the energy balances
- DME does not have its own energy statistics methodology manual but uses the IEA and UN frameworks
- DME is in the process of signing an MOU with Statistics SA to make our energy statistics be regarded as “official statistics” and develop a SA Energy Statistics methodology manual
- We also participate in the OSLO Working Group and other international meetings to develop and improve the energy statistics methodology

# Scope of Energy Statistics

- Data is collected only in physical units and converted to energy units.
- Data are collected on a national rather than a regional basis
- Data on the electricity and petroleum infrastructure was collected for the SA Energy Security Master plans
- SA has limited reserves of crude oil and natural gas
- Up to date data on coal reserves are not available but a study is presently being undertaken in this regard
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# Classification of Energy Data and Products

- DME uses the Statistics SA industrial sector classification for energy demand
- IEA classifications are used to classify energy products for the energy balances

# Data Compilation

- DME has done limited energy data surveys but the intention is to conduct such surveys for the SA National Integrated Energy Modelling System (NIEMS) that is being developed
- These surveys are mainly done on household electricity, Liquefied Petroleum Gas and coal usage

# Problems with Data Collection

- DME relies presently on the voluntary supply of energy data and this poses challenges in receiving data timeously
- The liberalisation of the SA energy sector has resulted in fragmentation of data sources
- Local Authorities (Municipalities) are not always aware of the importance of collection of energy data and often lack capacity
- Quality of data is sometimes questionable
- Demand side data are very sparse
- Confidentiality issues of commercially sensitive data also create problems in the supply of data

# Problems with Data Collection

- Biomass data are sparse and out of date
- Classification of data provided by our sources do not necessarily agree with the IEA classification that are used for our publications
- There is limited funding for data collection exercises
- Statistics are not available on a provincial or regional basis.
- DME has limited capacity to collect energy statistics
- DME does not have a centralised data storage system

# Addressing Data Collection Problems

- The new National Energy Act developed by DME provides for the compulsory provision of energy data
- DME will be developing regulations for the collection and dissemination of energy data. These regulations will take account of data sensitivity issues and avoid duplication in supply of data
- DME has restructured its Energy Planning Division to create an institutional framework for all aspects of data collection and energy planning. This new structure is not yet fully funded
- DME is nurturing its relationship with all data providers

# Addressing Data Collection Problems

- The MOU with Statistics SA is mainly aimed at improving the quality control of energy statistics, assisting with surveys and capacity building and training. The DME is investigating the possibility of including questions on household energy usage in the census forms
- DME participates in national and international energy statistics workshop which are aimed at developing and improving our energy statistics processes and methodologies
- DME has sent staff for training courses and workshop on energy planning and statistics to further develop their skills and knowledge

# Institutional Arrangements

- DME collects energy data and has a team responsible for collection, storage and dissemination of data
- DME has a working relationship with Statistics SA and the IEA and UNSD
- DME has established an Energy Statistics Committee comprising of energy experts to assist with the review and verification of SA Energy statistics
- DME has working relationships with data suppliers

# Units of measurement and conversion factors

- Metric physical units are used for data collection and data dissemination
- Energy price data are collected and disseminated in the local currency unit (SA Rand)
- The data for coal and crude oil are expressed in metric tons
- Liquid Petroleum products are expressed in litres
- LPG is expressed in Kilograms
- Electricity is expressed in Gigawatt hours
- For purposes of the energy balance physical units are converted to Terajoules

# Units of measurement and conversion factors-country specific conversion factors

- DME has country specific calorific values for all energy carriers
- For example the calorific value for coal for power generation purposes is 20.1 (Megajoules per kilogram) and for coal for general purposes is 24.3
- DME uses international conversion factors to convert between different energy units example for electricity we convert kilowatt hours to Joules for energy balances

# Energy Balances

- DME does compile Energy Balances
- The main problems in the compilation of our energy balances are the following:
  - **Timeous supply of data**
  - **Quality and accuracy of the data**
  - **Understanding of the structure of the relationships within the energy balances for example domestic supply, transformation and final consumption**
  - **Lack of data for RE, Biomass**

j1

## Diapositiva 17

**j1** balance your domestic supply of coal
where is it used
balance that taking electrical output
proper view of what coal represents in SA
Jump in coal data from year to year
jeff; 20/11/2008

# Energy Balances

- The main problems in the compilation of our energy balances are the following
  - **Energy Balances are not available on a provincial or regional basis due to non-availability of such disaggregated data and confidentiality issues**
  - **Evaluation of the data**
  - **Understanding of the SA energy economy**
  - **Limited Human Resources within DME and with data suppliers**

j6

## Diapositiva 18

**j6** balance your domestic supply of coal
where is it used
balance that taking electrical output
proper view of what coal represents in SA
Jump in coal data from year to year
jeff; 20/11/2008

# Data Quality Assurance and Dissemination

- Data is then inputted into the energy balance and a further comparison is done
- Data is then reviewed by experts in the energy sector
- The Director General of DME approves the release of the data as well as further revisions that are made to the data
- The data is also critiqued by the IEA and other energy institutions on an informal basis

j3

## Diapositiva 19

**j3** balance your domestic supply of coal
where is it used
balance that taking electrical output
proper view of what coal represents in SA
Jump in coal data from year to year
jeff; 20/11/2008

# Data Quality Assurance and Dissemination

- DME makes the Energy Balance available on its website
- The electronic version of the Energy Balance is sent to specific stakeholders for example the IEA and data suppliers
- The Energy Balance is then published in the Digest of South African Energy Statistics and this publication is then distributed to stakeholders
- The Energy Price Report is also available on our website and also published and distributed

## Diapositiva 20

**j5** balance your domestic supply of coal
where is it used
balance that taking electrical output
proper view of what coal represents in SA
Jump in coal data from year to year
jeff; 20/11/2008

# Uses of Energy Statistics

- DME uses the energy statistics to draw up energy balances and for planning and policy development purposes
- The data is used by the energy industry for investment purposes and for research purposes
- Statistics SA use the data for the compilation of their national energy accounts
- Other Government departments use it for purposes of planning and policy development
- The IEA and UNSD use the data to incorporate it into their publications
- Students and researchers use the data for research

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## Diapositiva 21

**j2**

balance your domestic supply of coal
where is it used
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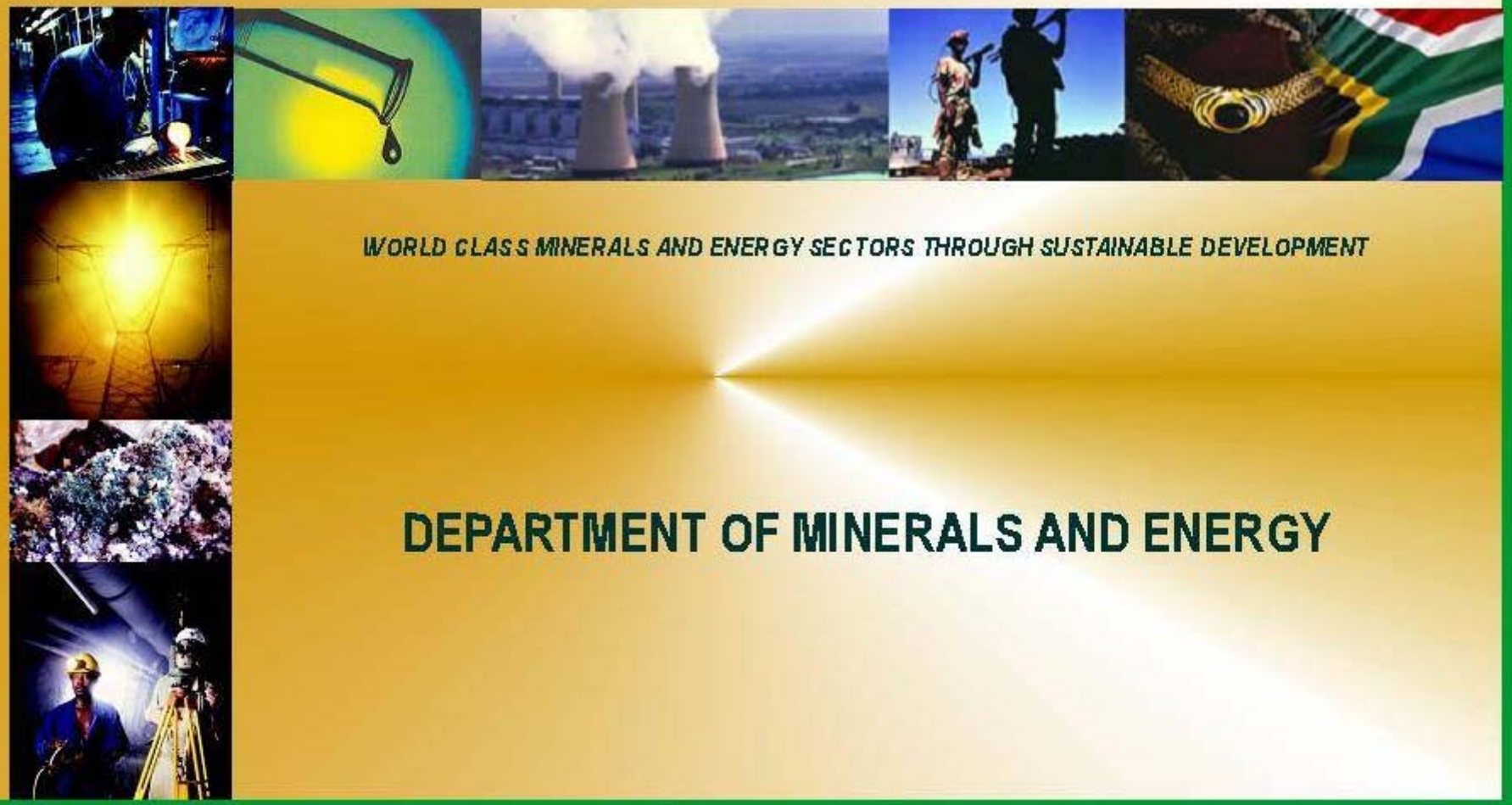
Jump in coal data from year to year
jeff; 20/11/2008

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# I Thank You