

IMPROVEMENT OF THE MALAYSIAN ENERGY STATISTICS: CHALLENGES AND THE WAY FORWARD



WORKSHOP ON ENERGY BALANCE: AN INTRODUCTION TO DATA PROVIDERS

5th DECEMBER 2011
BERJAYA TIMES SQUARE HOTEL
KUALA LUMPUR

OUTLINE

- ❖ Introduction
- ❖ Definition
- ❖ Data Collection and Compilation
- ❖ Energy Balances
- ❖ Users and Uses of Energy Statistics
- ❖ Challenges
- ❖ Suggestions
- ❖ Way Forward



INTRODUCTION

Energy is fundamental for socio-economic development. The availability of and access to energy and energy sources is particularly essential to poverty reduction and further improvements in the standards of living. However, at the same time, with the constantly increasing demand for energy, there are growing concerns about the sustainability of the current production and consumption patterns and the impact of the use of fossil fuel on the environment. Under these circumstances the reliable and timely monitoring of the supply and use of energy becomes indispensable for sound decision making. However, such a monitoring is possible only if high quality energy statistics are systematically compiled and effectively disseminated.

Source: United Nations



DEFINITION

Definition of the Oil, Gas and Energy NKEA

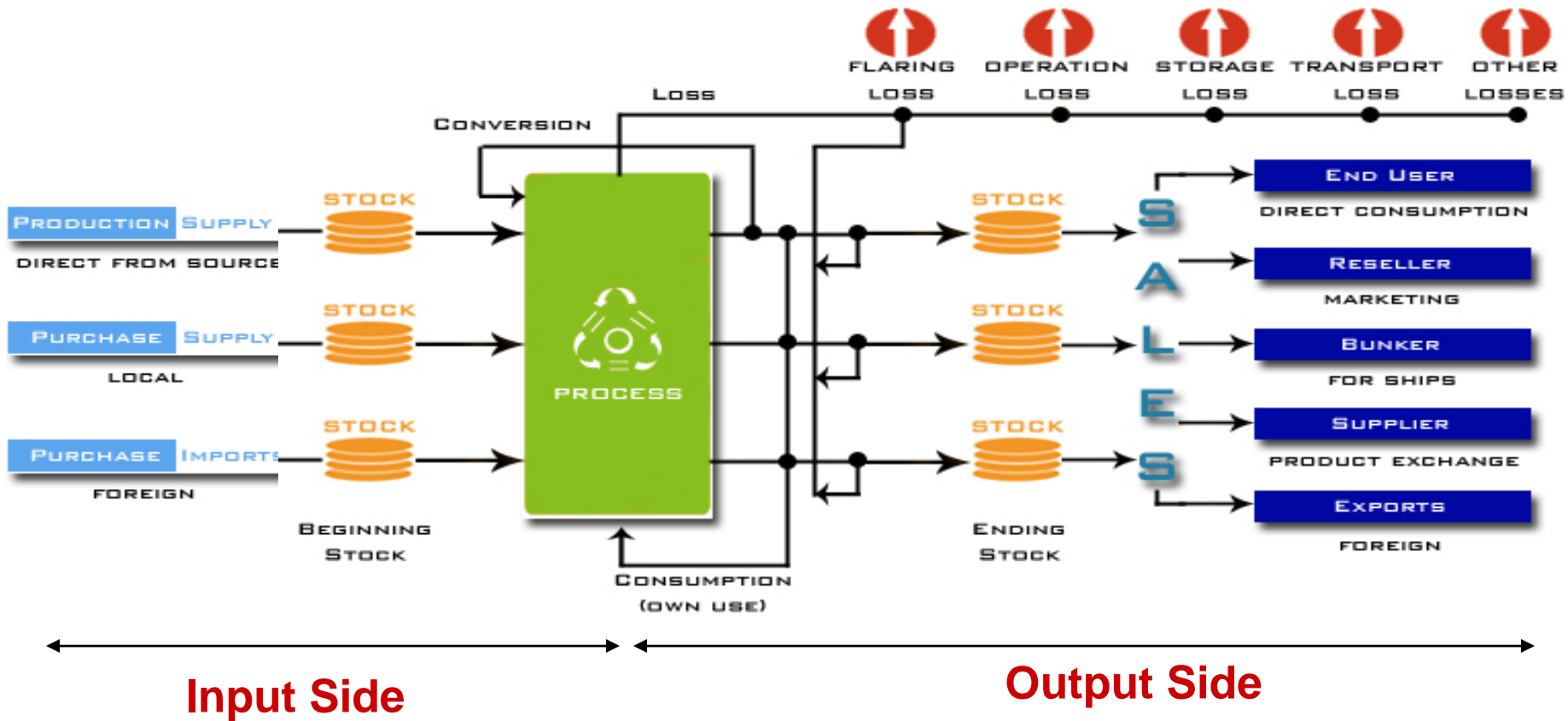
The oil and gas industry is generally divided into upstream, midstream and downstream activities. Upstream activities consist of exploration, development and production of oil and gas resources. Midstream and downstream activities range from the transportation of oil and gas, to refining and processing through to marketing and trading of end products. The energy sector comprises power generation, transmission and distribution.



DEFINITION

No	Product Name	Product Description	No	Product Name	Product Description	No	Product Name	Product Description
1	ATF & Av Gas	ATF (Aviation Turbine Fuel)	38	Electricity	Electricity	75		Light Detergent Feedstock
2		Aviation Gas (AVGas)	39	Fuel Oil	Fuel Oil Bunker	76		Liquid Lubricants
3		DPK (Dual Purpose Kerosene)	40		Fuel Oil	77		MTBE
4	Coal & Coke	Brown Coal Coke	41		Fuel Oil - Cogen	78		Naptha
5		Bituminous Coal	42		Fuel Oil - Thermal - Steam	79		Oil Slops
6		Charcoal	43		Fuel Oil - Thermal - Utility sets	80		Other Lubes
7		Coal - Thermal - Steam	44		Fuel Oil (other than Residual)	81		Petroleum Solvent (Others)
8		Coke (Semi Coke)	45		Residual Fuel Oil	82		Platformate / Reformate
9		Fuel Wood	46	Fuel Oil (LSWR)	83	Petroleum Jelly		
10		Graphite	47	Hydro Power	Elect - Hydro - Major	84		Solid Lubricants
11		Gas Coke	48		Elect - Hydro - Mini	85	Other Waxes	
12		Lignite (Brown Coal)	49	Kerosene	Regular Kerosene	86	Petroleum Waxes	
13		Lignite Briquettes	50	Liquified Natural Gas	LNG Liquified Natural Gas	87	Waxy Raffinates	
14		Other Coal	51	LPG	LPG Liquified Petroleum Gas	88	Others	Local Condensate
15		Peat	52	Motor Petrol	Mogas (Others)	89		Crude Residuum
16		Pattern Fuel Briquettes	53		Mogas (w Naptha L 92 RON)	90		Foreign Condensates
17		Petroleum Coke	54		Mogas (w Naptha UL 92 RON)	91		Residue (FE)
18		Retort Carbon	55		Mogas (w Naptha UL 97 RON)	92		Slops Reprocessed
19		Semi Coke	56		Mogas (wout Naptha L 92 RON)	93		Private Licencee Fossil
20	Co-Generation Fossil	Elect - Cogen - Diesel	57	Mogas (wout Naptha UL 92 RON)	94		Elect - Private Licensee - Natgas	
21		Elect - Cogen - Fuel Oil	58	Mogas (wout Naptha UL 97 RON)	95	Private Licencee Renewable	Elect - Private Licensee - Biomass	
22		Elect - Cogen - Natgas	59	Natural Gas	Butane	96	Refinery Gas	Flared Gas
23	Co-Generation Renewable	Elect - Cogen - Biomass	60		Ethane	97		Refinery Gas
24		Elect - Cogen - Palm Oil	61		Methane	98	Solar	Elect - Solar
25	Crude Oil	Local Crude Oil	62		Natural Gas Fuel	99	Thermal	Elect - Thermal - Combined Cycle - Diesel
26		Other Foreign Crude Oil	63		Natural Gas	100		Elect - Thermal - Combined Cycle - Natgas
27		West Asian Crude Oil	64	NatGas - Thermal - Combined Cycle	101	Elect - Thermal - Geothermal		
28	Diesel	Diesel Oil Bunker	65	NatGas - Cogen	102	Elect - Thermal - Steam - Biomass		
29		Diesel Oil	66	NatGas - Thermal - Open Cycle	103	Elect - Thermal - OpenCycle - Diesel		
30		Diesel - Cogen	67	NatGas - Private Licencee	104	Elect - Thermal - OpenCycle - Natgas		
31		Diesel - Thermal - Open Cycle	68	NatGas - Thermal - Steam	105	Elect - Thermal - Steam - Coal		
32		Diesel - Private Licencee	69	Non Energy	Propane	106		Elect - Thermal - Steam - Diesel
33		Diesel - Thermal - Steam	70		Bitumen / Asphalt / Mexphate	107		Elect - Thermal - Steam - Fuel Oil
34		Diesel - Thermal - Utility Sets	71		Bitumen Mastics	108		Elect - Thermal - Steam - Natgas
35		Gas Oil	72		Heavy Detergent Feedstock	109	Elect - Thermal - Utility Sets - Diesel	
36		High Speed Diesel Fuel			73	White/Industrial Spirit	110	Wind Turbine
37				74	Lubes / Grease			

DEFINITION



DEFINITION

1. Residential/Domestic

Retail - Residential
Public Lighting

2. Commerical

Retail - Commercial
Wholesale & Retail (Hotel /
Complexes)
Real Estate & Services
Government & Military

3. Agriculture

Agriculture & Livestock

4. Non Engery

Non Energy Use

5. Industrial

Retail - Industry
Forestry & Logging
Fishing
Mining & Quarry
Construction
Refining
Ceramic
Food, Beverage & Tobacco
Glass & Glass Products
Rubber, Plastic & Non Metalic
Wood & Furniture
Textile Apparel & Leather
Power Generation
Brick
Cement
Iron, Steel & Metal
Pulp, Paper Products & Printing
Chemical & Petrochemical
Other Oil Companies
General Manufacturing (Others)

6. Transportation

Retail - Transportation
Road
Rail
Air
Inland Water

7. Utility

Utility Generation - TNB
Utility Generation - SESCO
Utility Generation - SEB
Utility Generation - Others

8. Bunker

International Shipping



DATA COLLECTION AND COMPILATION

- ❖ Currently, about 70 data providers
- ❖ Divided into fuel types ; oil, gas, electricity and coal
- ❖ In quarterly basis based on region
- ❖ Questionnaire based on energy balance format
- ❖ Collected via email, fax and postage
- ❖ Primary and secondary sources
- ❖ Common unit of measurement based on fuel types



DATA COLLECTION AND COMPILATION



ExxonMobil



TENAGA NASIONAL



Shell



Jabatan Perangkaan
MALAYSIA



DATA COLLECTION AND COMPILATION

STAGE 1

- Data Collection
- Data Checking
- Data Verification
- Data Analysis

STAGE 2

- Draft Report Preparation
- Internal Screening
- Technical Meeting

STAGE 3

- Amendments
- Final Report Publication
- Dissemination



ENERGY BALANCES

- ❖ Featuring data on Malaysia's Primary production of energy supply, secondary supply of energy and the final demand of energy.
- ❖ Structured into 3 main sectors ; Primary supply, Transformation and Final Use.
- ❖ Energy supply = Production + Imports - Exports - Bunkers +/- Stock change
- ❖ Energy demand = Gross Inland Consumption
 - = Final Energy Consumption + Consumption of energy in transformation sector
 - + Distribution losses
 - + Non-energy Consumption



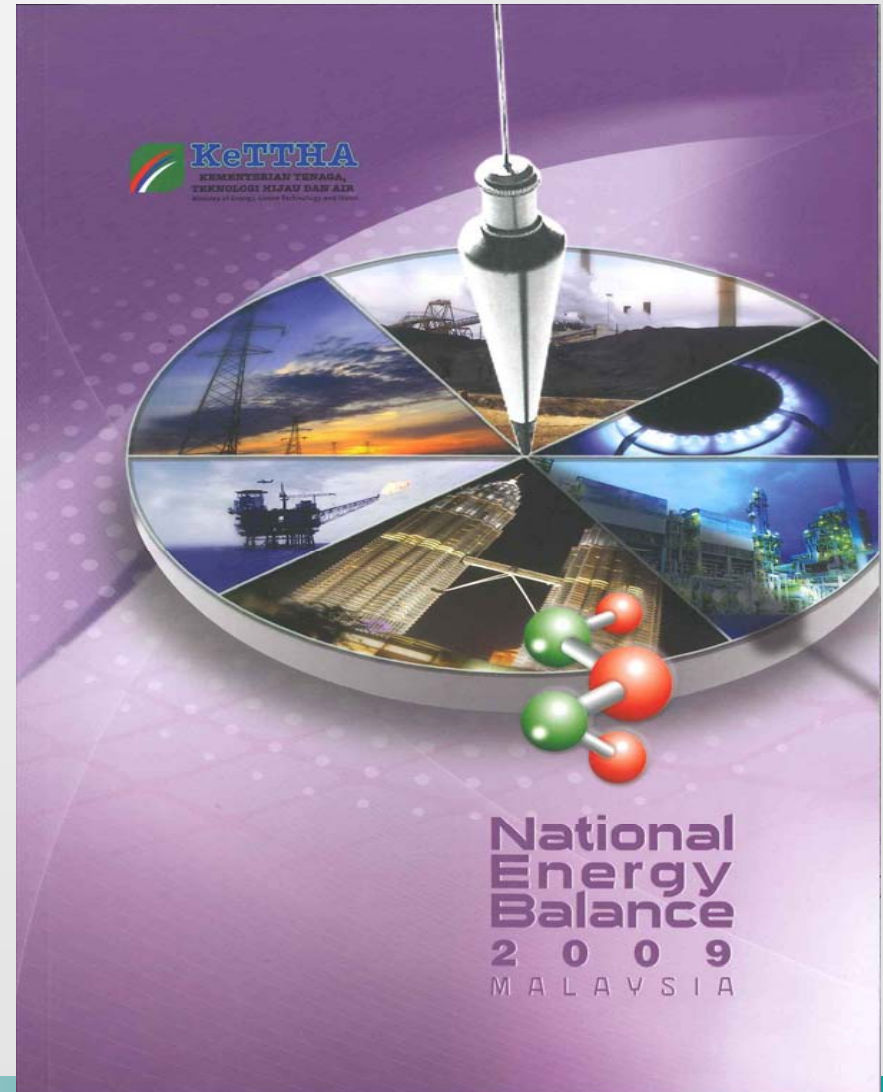
ENERGY BALANCES



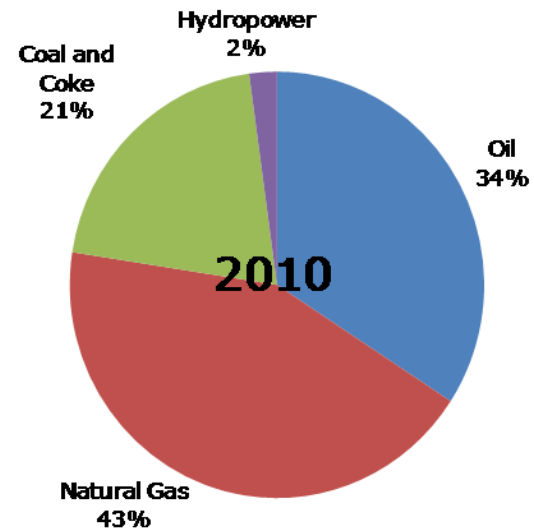
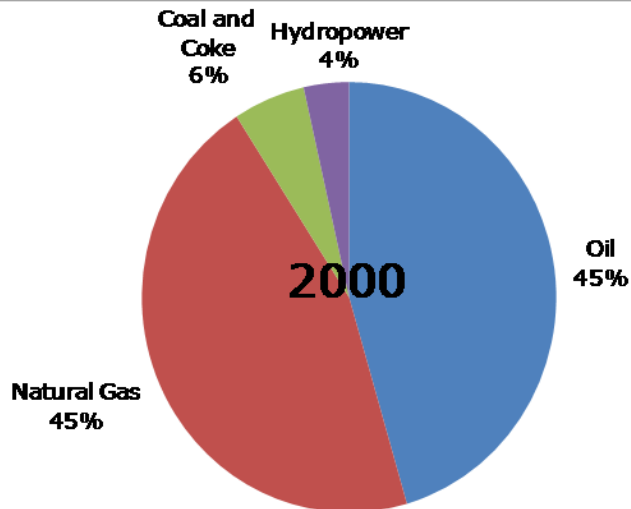
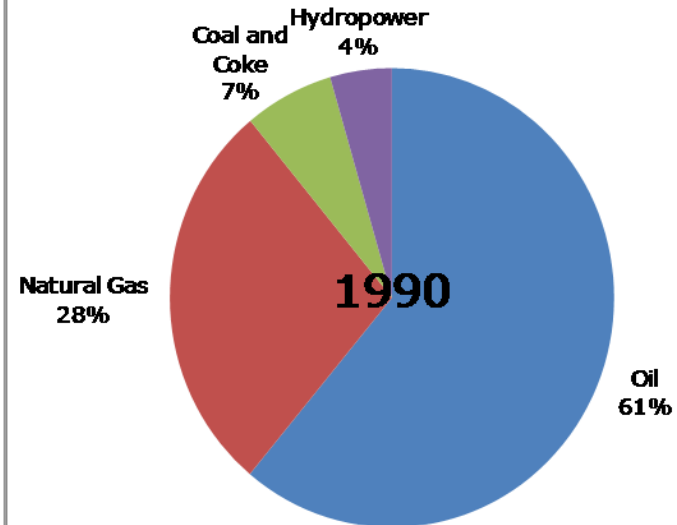
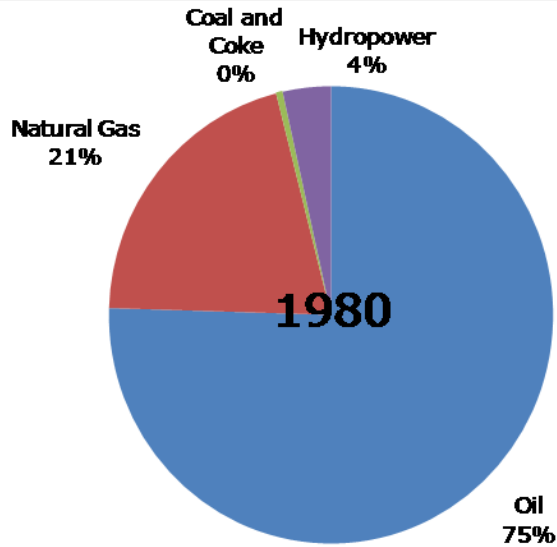
NATIONAL ENERGY BALANCE MALAYSIA 1980 - 1990

Kementerian Tenaga, Telekom dan Pos, Malaysia
Ministry of Energy, Telecommunications
and Posts, Malaysia

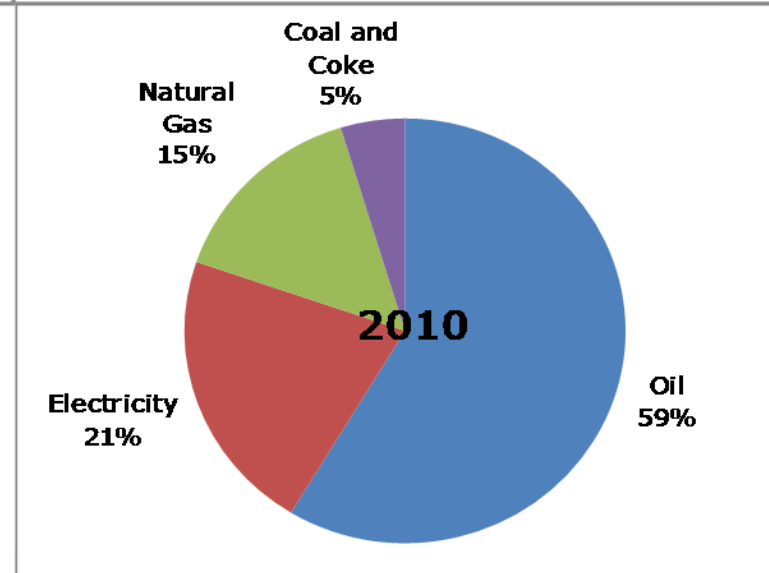
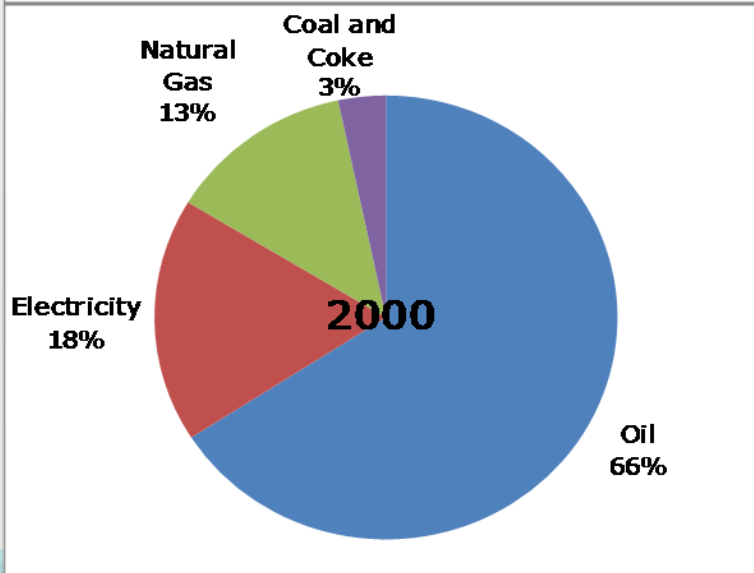
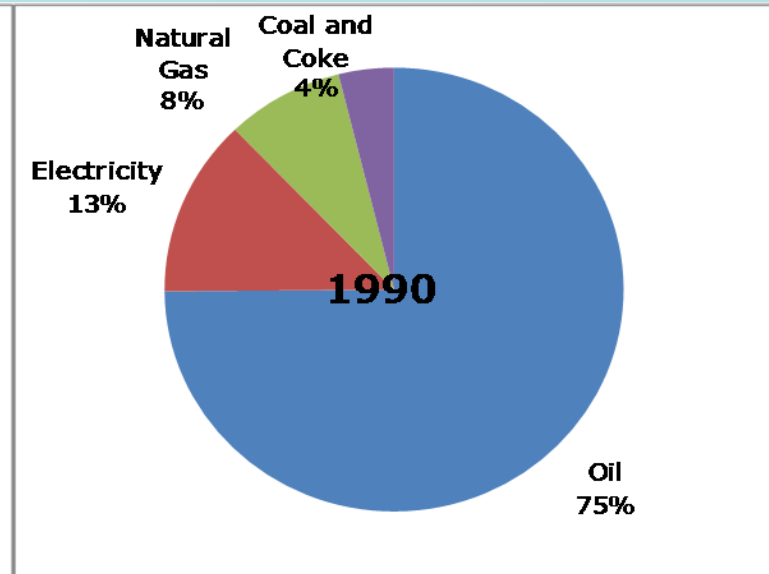
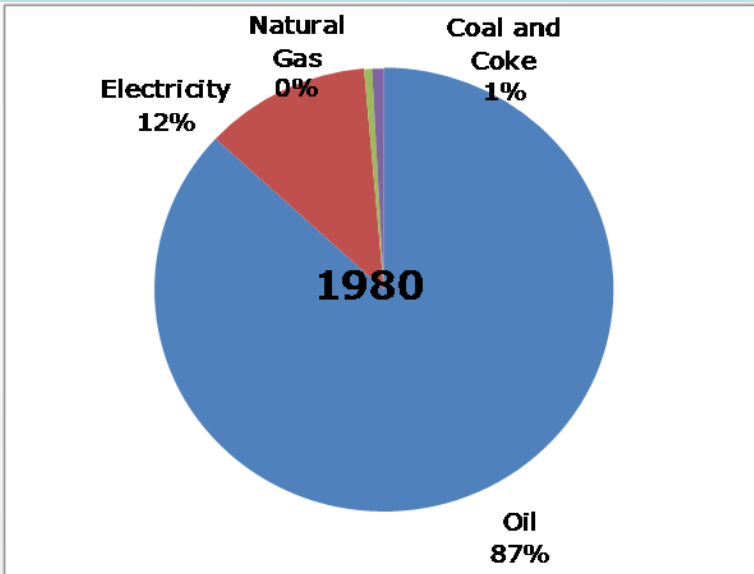
DECEMBER 1991



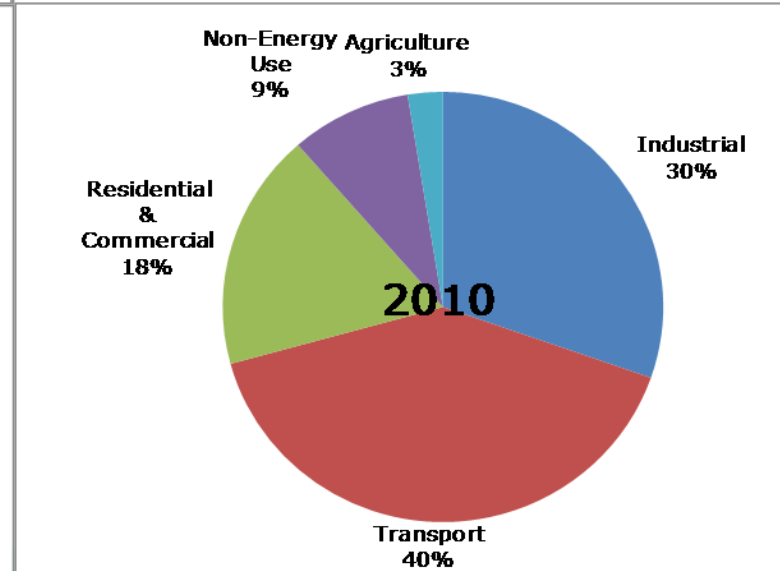
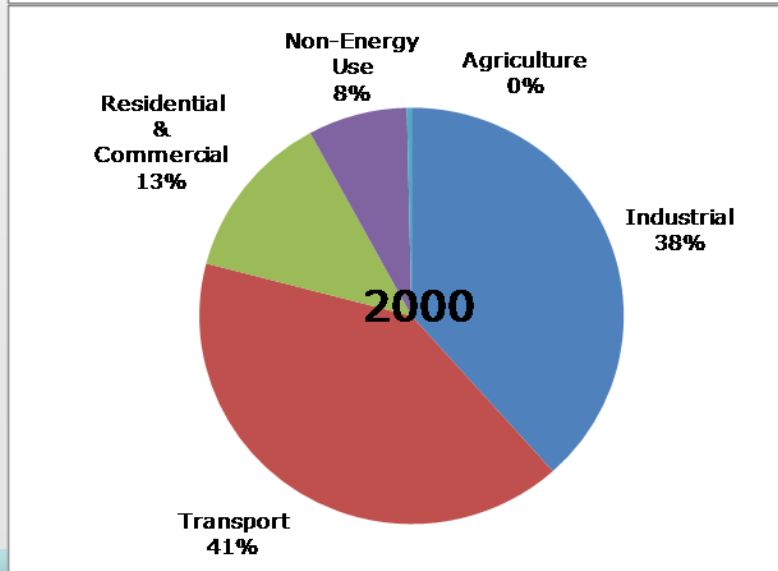
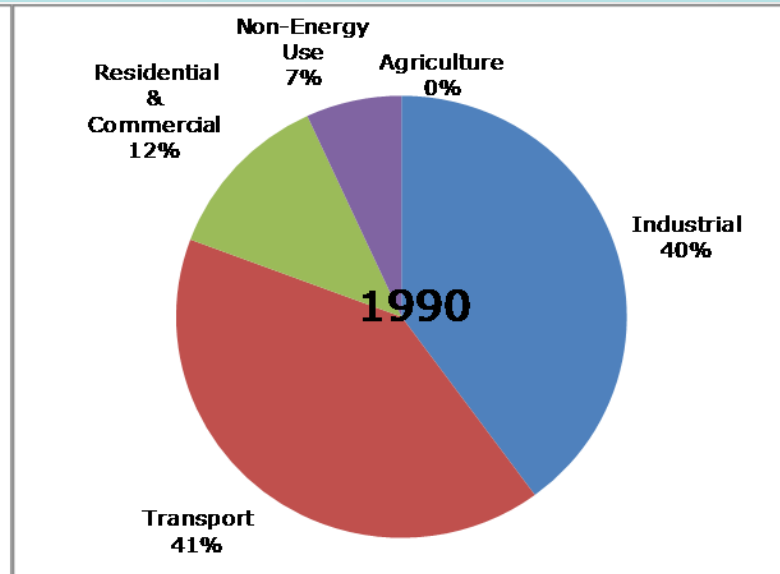
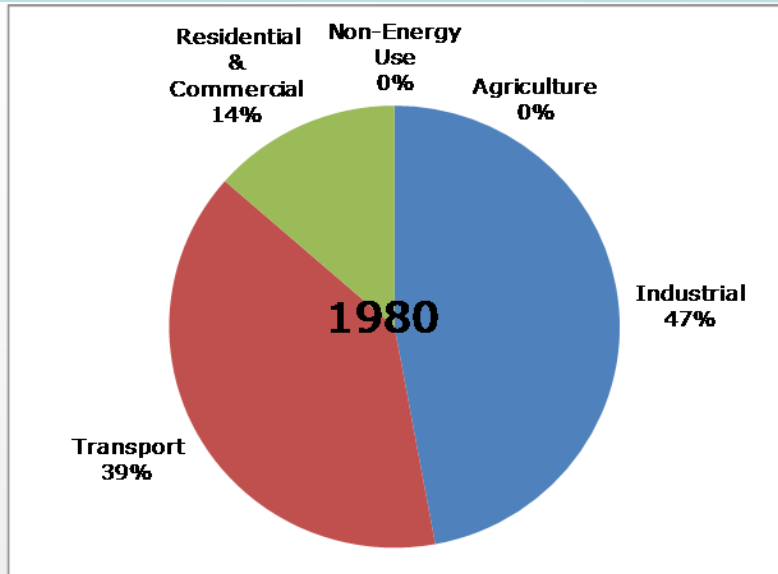
ENERGY BALANCES: ENERGY SUPPLY



ENERGY BALANCES: FINAL ENERGY DEMAND



ENERGY BALANCES: FINAL ENERGY DEMAND



USERS AND USES OF ENERGY STATISTICS

Energy Statistics

Energy Indicators

- Social
- Economic
- Environment

Greenhouse Gas Emission

- IPCC Guidelines
- GHG Inventory

Energy Outlook

- National Energy Policy
- ASEAN Energy Outlook
- Mitigation NC2



ANALYSIS OF ENERGY BALANCE INFORMATION

- ❖ Energy supply mix
- ❖ Self-reliance in supply
- ❖ Share of renewable energies in supply
- ❖ Efficiency of electricity generation
- ❖ Power generation mix
- ❖ Refining efficiency
- ❖ Overall energy transformation efficiency
- ❖ Per capita consumption of primary energy and final energy
- ❖ Energy intensity



USERS AND USES OF ENERGY STATISTICS



USERS AND USES OF ENERGY STATISTICS

- ❖ Energy policy makers
 - ❖ Formulation of energy policies and monitoring their impact on the economy
 - ❖ Monitoring of national energy security
 - ❖ Planning of energy industries' development and promotion of energy-conserving technological processes
 - ❖ Environmental policy, especially greenhouse gas emission inventories and environmental statistics
- ❖ Business community
- ❖ Compilers and users of national accounts
- ❖ International organizations
- ❖ General public



CHALLENGES

- ❖ Data availability
- ❖ Data quality in terms of completeness and others
- ❖ Boundary and definition problem
- ❖ Common measurement unit
- ❖ Conversion factors



CHALLENGES

- Human Capital
- Knowledge, capacity and expertise
- Cooperation among data providers – voluntary basis
- Confidentiality issue
- Overlap with others Ministry territory
- Data collection and dissemination management system
- Data submitted no tally with other publication or reports



SUGGESTIONS

- Need to hire more experience staff
- Continuous support from international cooperation is needed, IEEJ, IEA, UNSD and others
- Mutual agreement and understanding between data providers and ST need to strengthen – energy statistics law?
- Going forward to become advance economy – need to be transparent
- Cooperation between Ministries on energy statistics need to develop
- Introduction of database system to data providers and public users
- Data providers should have their own focal point for data released
- Introduction of law or regulation in collecting and reporting the NEB
- Introduction of Malaysia Energy Information Hub (MEIH)



WAY FORWARD

- ❖ EC will prepare and publish the NEB 2010 onwards
- ❖ Training for NEB data providers of MEIH will be conducting soon
- ❖ Planning to develop a NEB apps same like IEA
- ❖ MEIH will be the hub or portal for energy statistics and NEB
- ❖ Planning to conduct a survey to get more details energy consumption data
- ❖ Relationship between EC and NEB data providers will be strengthen through meetings and dialogues





TERIMA KASIH