

# ENERGY EFFICIENCY ACTION PLANS- NAMIBIA

USEA GLOBAL EE WORKSHOP

WASHINGTON DC

06-12 MARCH 2010

# BACKGROUND

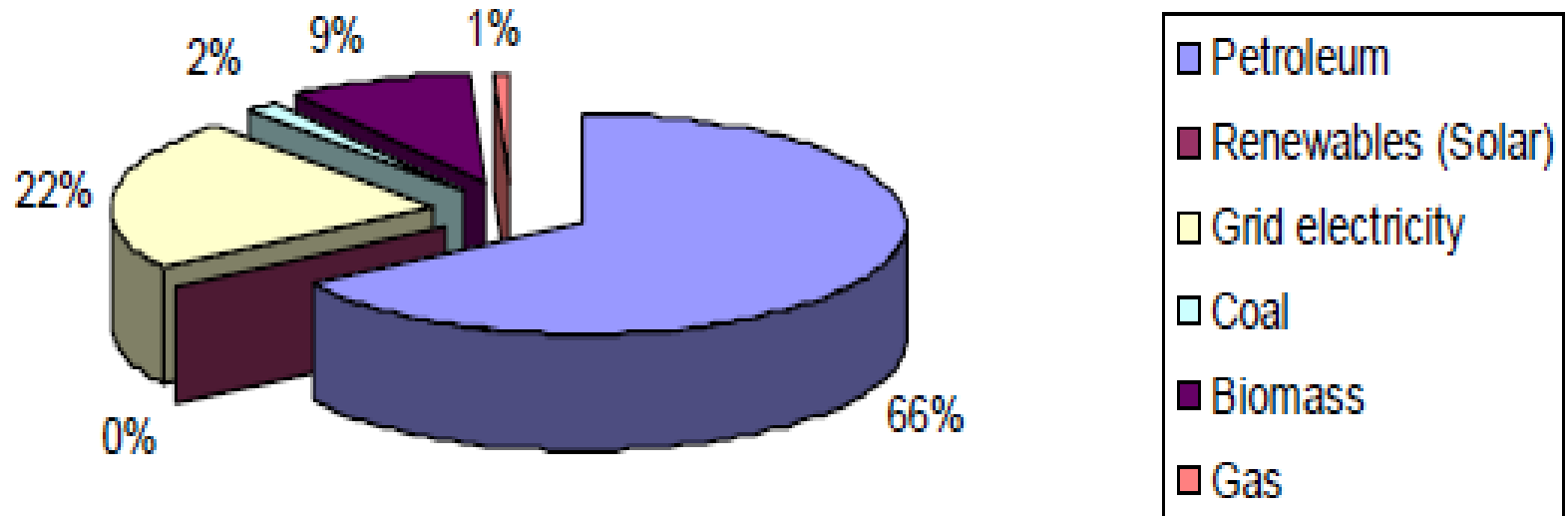
- Namibia is an energy intensive country just like most developing countries;

	2000	2001	2002	2003	2004	2005
Europe	7,461	7,457	7,317	7,361	7,293	7,177
Africa	6,535	6,602	6,453	6,472	6,461	6,365
South Africa	10,959	10,833	10,175	10,616	10,853	10,006
Zimbabwe	6,205	6,367	6,772	7,506	6,757	8,431
Botswana	5,848	4,962	4,576	4,111	4,434	4,117
Namibia	4,252	4,717	4,877	5,034	5,005	5,045

- Source; Energy Information Administration-2005)*

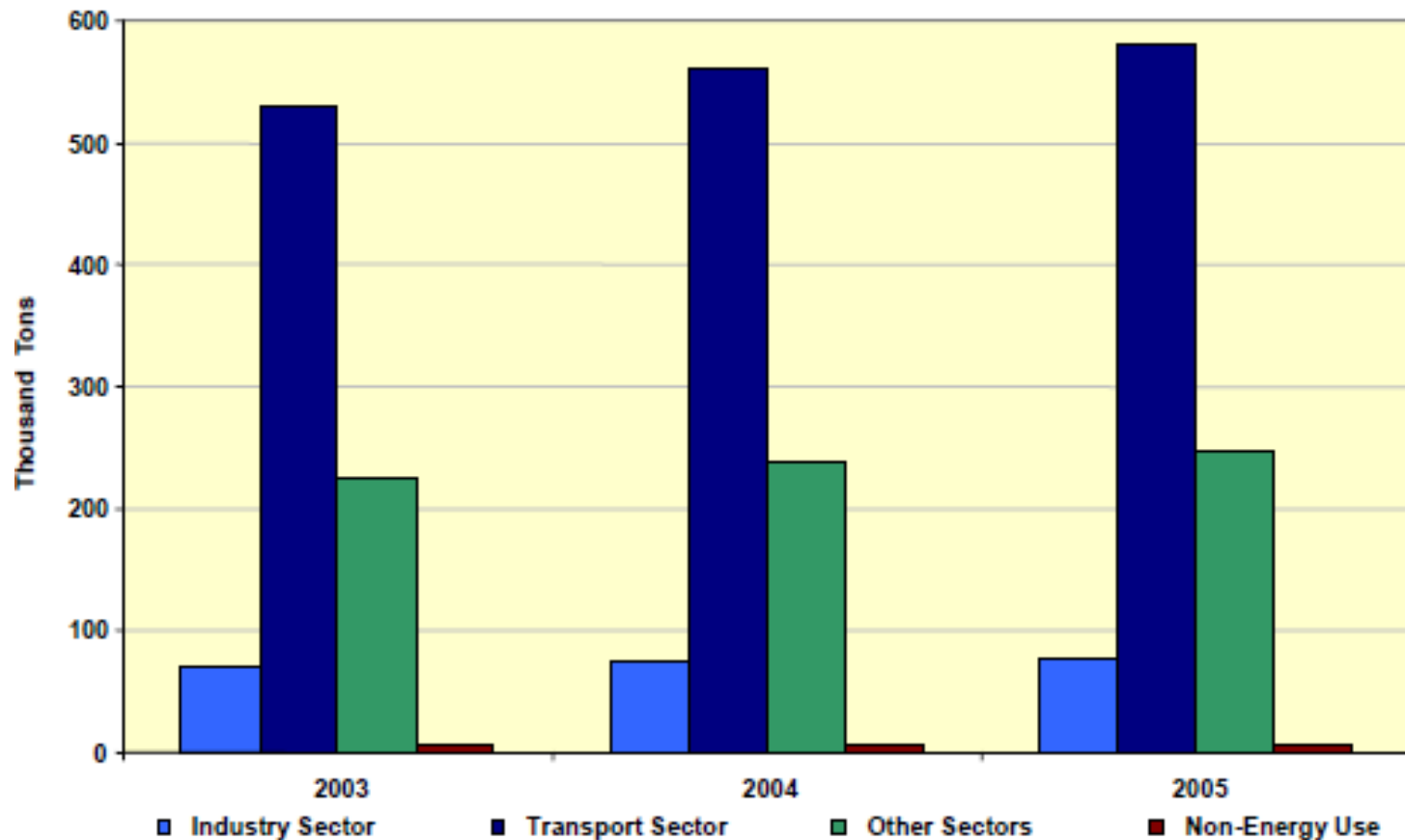
# BACKGROUND

Namibia Energy Consumption by Resource  
in 2006 (Source; REEEI)



# BACKGROUND

- Petroleum Demand by Sector



Source: IEA, Energy Balances of Non-OECD Countries

# INTERVENTIONS

- Priority areas are identified based on energy consumption, security of supply, & environmental consideration
- Interventions and Action Plans are thus Sector specific

# SPECIFIC SECTOR

- Transport and Agriculture
- Built Environment ( Buildings and equipment)
- Residential
- Trade and Industry
- Energy Supply Service

# TRANSPORT SECTOR

Measures	Activities	Priorities	Stakeholders
1) Encourage fuel switching in motor Vehicles	<ul style="list-style-type: none"> <li>• Build and expand fuel switching facilities</li> <li>• Provide incentives for fuel switching</li> </ul>	High	TransNamib, Service Providers, Freight and logistics, NABTA, Driving Schools, MVA, Aviation, MTWC, NCCL, MAWF.
2) Switching of small taxis with minibuses	<ul style="list-style-type: none"> <li>• Taxi recapitalization with modern fleet of minibuses</li> </ul>	High	
3) Promote increased use of rail	<ul style="list-style-type: none"> <li>• Awareness raising</li> <li>• Implement road toll fees</li> </ul>	High	
4) Encourage cycling	<ul style="list-style-type: none"> <li>• Awareness raising</li> <li>• Reduction / elimination of customs duty on bicycle spares</li> <li>• Encourage manufacturing of bicycles locally</li> </ul>	High	
5) Encourage use of diesel to petrol	<ul style="list-style-type: none"> <li>• Encourage use of locally produced biodiesel</li> </ul>	High	
6) Develop energy efficiency labels for vehicles	<ul style="list-style-type: none"> <li>• strict technical inspection</li> <li>• Awareness raising on how to drive efficiently</li> <li>• Optimise passenger and good services</li> <li>• Vehicles roadworthiness testing</li> </ul>	High	
7) Encourage research on use of natural gas, fuel cells, and electric vehicles	<ul style="list-style-type: none"> <li>• Awareness raising</li> <li>• Build and expand gas and related facilities</li> </ul>	Medium	
8) Infrastructure upgrade	<ul style="list-style-type: none"> <li>• Improve existing infrastructure to accommodate the growing economy</li> </ul>	Medium	
9) Practice EE in Agricultural Activities	<ul style="list-style-type: none"> <li>• Improve insulation for heating and cooling (Especially in the meat industry)</li> <li>• Introduce technologies such as biogas plants</li> </ul>	High	

# BUILT ENVIRONMENT

Measures	Activities	Indicators	Priorities	Stakeholders
1) Mandatory energy audits in public building	<ul style="list-style-type: none"> <li>• Support establishment of energy savings companies</li> <li>• Awareness raising</li> </ul>	Energy audit programme in place	High	NHE, Architects, Quantity Surveyor, Engineers, Tender board, Developers, City planners, Capital providers, MME, MWTC, Estate agents, Users,
2) Building codes should be revised and implemented	<ul style="list-style-type: none"> <li>• Revise and adopt building codes to include north-south orientation, insulation or glass wool, two skin air gaps, shading of south facing windows, SWH,</li> </ul>	Revised Namibian building codes	High	
3) Performance contracting	<ul style="list-style-type: none"> <li>• Support establishment of Energy Saving Companies (ESCOs)</li> </ul>		High	
4) High performance buildings	<ul style="list-style-type: none"> <li>• Encourage use of Renewable Energy in buildings</li> </ul>		High	
5) Introduce an EE codification programme on equipment for cooling, heating, lighting and HVAC, SWH, occupancy sensors for all public building and monitoring of savings.	<ul style="list-style-type: none"> <li>• Label appliances for EE in buildings</li> </ul>	A list of approved and EE labelled equipment	High	
6) Life cycle costing of buildings	<ul style="list-style-type: none"> <li>• Promote and encourage a life cycle costing practice to be adopted in Namibia</li> </ul>		High	



# RESIDENTIAL

Measures	Activities,	Indicator	Priorities	Stakeholders
1. Introduction of SWH	<ul style="list-style-type: none"> <li>Promote solar water heater through incentives &amp; disincentives; rebates &amp; subsidised interests rates,</li> <li>Promote local manufacture of SWH</li> </ul>	40% of all new houses and a replacement of 2% (ECB 2005) electric heaters.	High	Municipalities, NHE, resident associations, financial associations, Nampower, Regional authorities, schools and various institutions, Ministry of Mines and Energy, Ministry of Trade and Industry, Standards body, Retailers, Architects, Building developers, MWTC, Shack dwellers Federation, Build Together
2. Energy saving bulbs	<ul style="list-style-type: none"> <li>Promote the use of CFLs,</li> </ul>	24MW electricity capacity saved	High	
3. Energy efficient stoves	<ul style="list-style-type: none"> <li>Awareness raising</li> <li>Promote local manufacturing and use of energy efficient stoves</li> </ul>		High	
4. Appliance labelling	<ul style="list-style-type: none"> <li>Establish standards for household appliances labelling in EE</li> <li>Awareness raising</li> <li>Establish an appliance labelling programme.</li> <li>Promote the use of appliance labelling</li> </ul>		High	
5. Building codes & practice	<ul style="list-style-type: none"> <li>Review building codes</li> <li>Establish EE building codes and practices</li> <li>Awareness raising</li> </ul>		High	

# ELECTRICITY SUPPLY INDUSTRY

Measures	Activities	Priorities	Stakeholders
1) Restructuring of utility pricing	<ul style="list-style-type: none"> <li>• Introduce innovative utility rates that provide incentives for energy efficiency</li> <li>• introduce power factor correction penalties</li> </ul>	High	Nampower, IPPs, ECB, REDs, Municipalities, Process industries.
2) Encourage co-generation and distributed power generation in utilities	<ul style="list-style-type: none"> <li>• Expand high efficient combined heating and power operations</li> <li>• Encourage municipalities to adopt CHP where feasible</li> </ul>	High	
3) Energy Efficiency targets	<ul style="list-style-type: none"> <li>• Set up minimum efficiency targets</li> </ul>	High	
4) Reduced transmission losses	<ul style="list-style-type: none"> <li>• Encourage distribution power generation</li> <li>• Encourage use of high efficient transformers</li> <li>• Encourage research and development in super conducted transformers and high temperatures transmission cables</li> </ul>	High	

# TRADE & INDUSTRY

Measures	Activities	Priorities	Stakeholders
1) Awareness raising	<ul style="list-style-type: none"> <li>• Training of business leadership in energy management</li> </ul>	High	Manufacturers, mining, agriculture, Retailers, energy suppliers, NamPower, REDs, municipalities
2) Energy audits	<ul style="list-style-type: none"> <li>• Enforce regular energy audits</li> </ul>	High	
3) Energy Efficiency accord	<ul style="list-style-type: none"> <li>• Establish energy targets in conjunction with business leadership</li> </ul>		
4) Endorsement of Energy Service Companies and to encourage greater energy efficiency within the industrial sector.	<ul style="list-style-type: none"> <li>• Establish guarantee fund</li> <li>• Facilitate interactions of ESCOs with financial institutions</li> </ul>	medium	
5) Efficient cooling / heating mechanisms	<ul style="list-style-type: none"> <li>• Encourage installation of energy efficient appliances</li> </ul>	Medium	
6) Power factor correction	<ul style="list-style-type: none"> <li>• identify potential for power correction in industry</li> <li>• implement power factor correction penalties</li> </ul>	medium	

# RECOMMENDATIONS

- Establish an EE accord & binding targets with industry so as to set measurable action plans
- Corporate senior leadership training on EE & Energy Mgmt
- Establish fora to share best practices across firms
- Support the establishment of ESCOs
- Establish EE agents in key ministries/Govt departments
- EE budgeting & policy drafting within line ministries & local authorities
- Ensure measuring, verification and monitoring of EE activities
- Promote carbon financing for EE