ENERGY EFFICIENCY

Energy Efficiency Policies for the SEMED/Arab Region

Introduction to Policy Development Working Session

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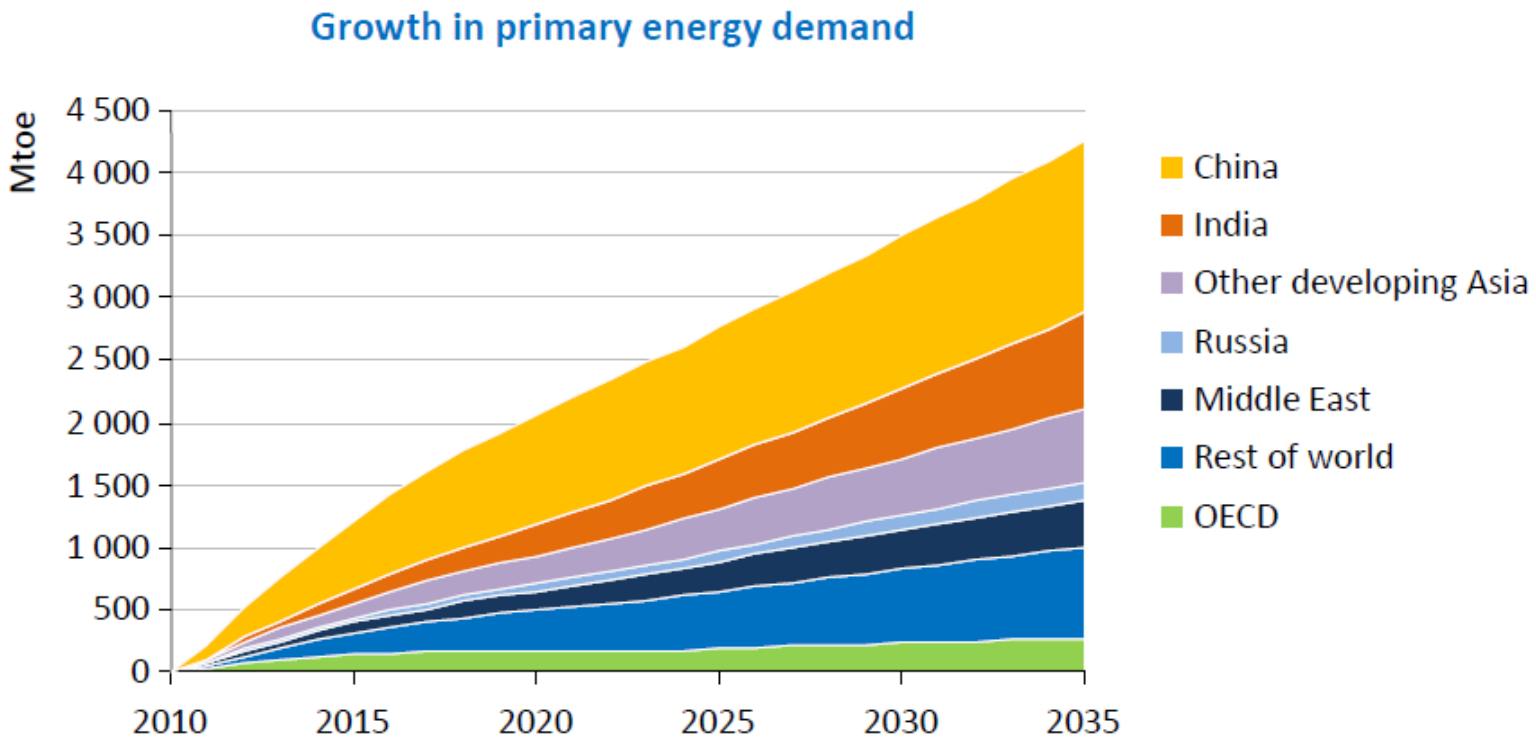
Agenda

- The Big Picture
- The role of energy efficiency policies in overcoming barriers to energy efficiency
- Organization of the policy development sessions

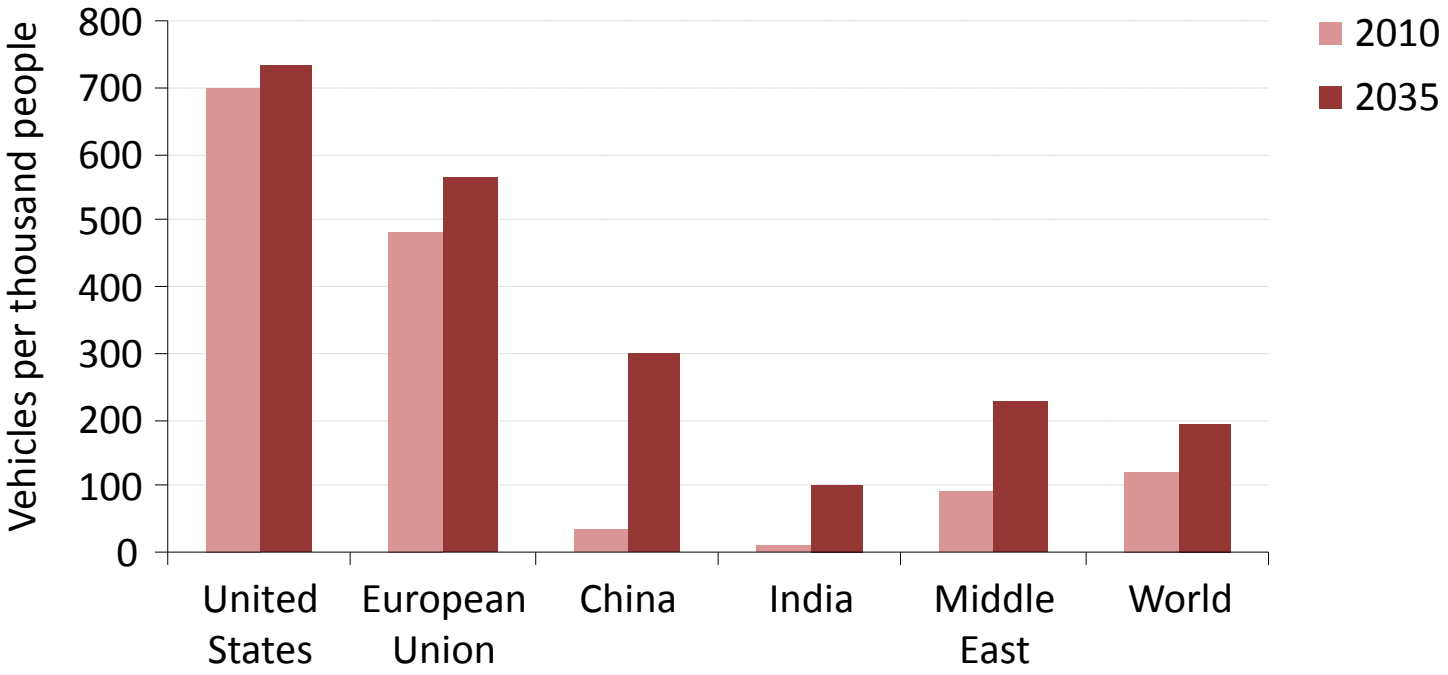
Energy demand will continue to grow – but the growth rate can be managed



Global energy demand increases by one-third from 2010 to 2035, with China & India accounting for 50% of the growth

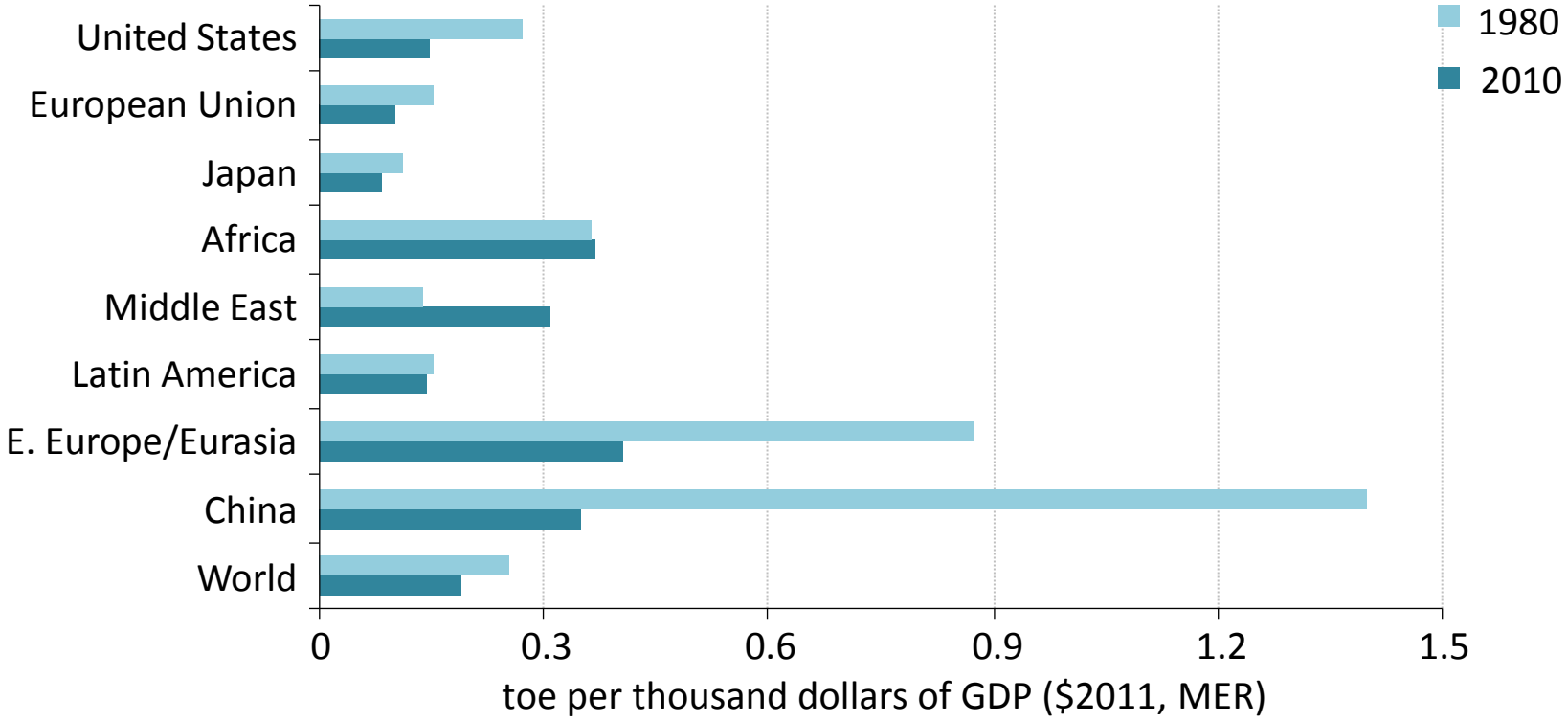
Middle East and North African car ownership will double in 20 years

PLDV ownership in selected markets in the New Policies Scenario



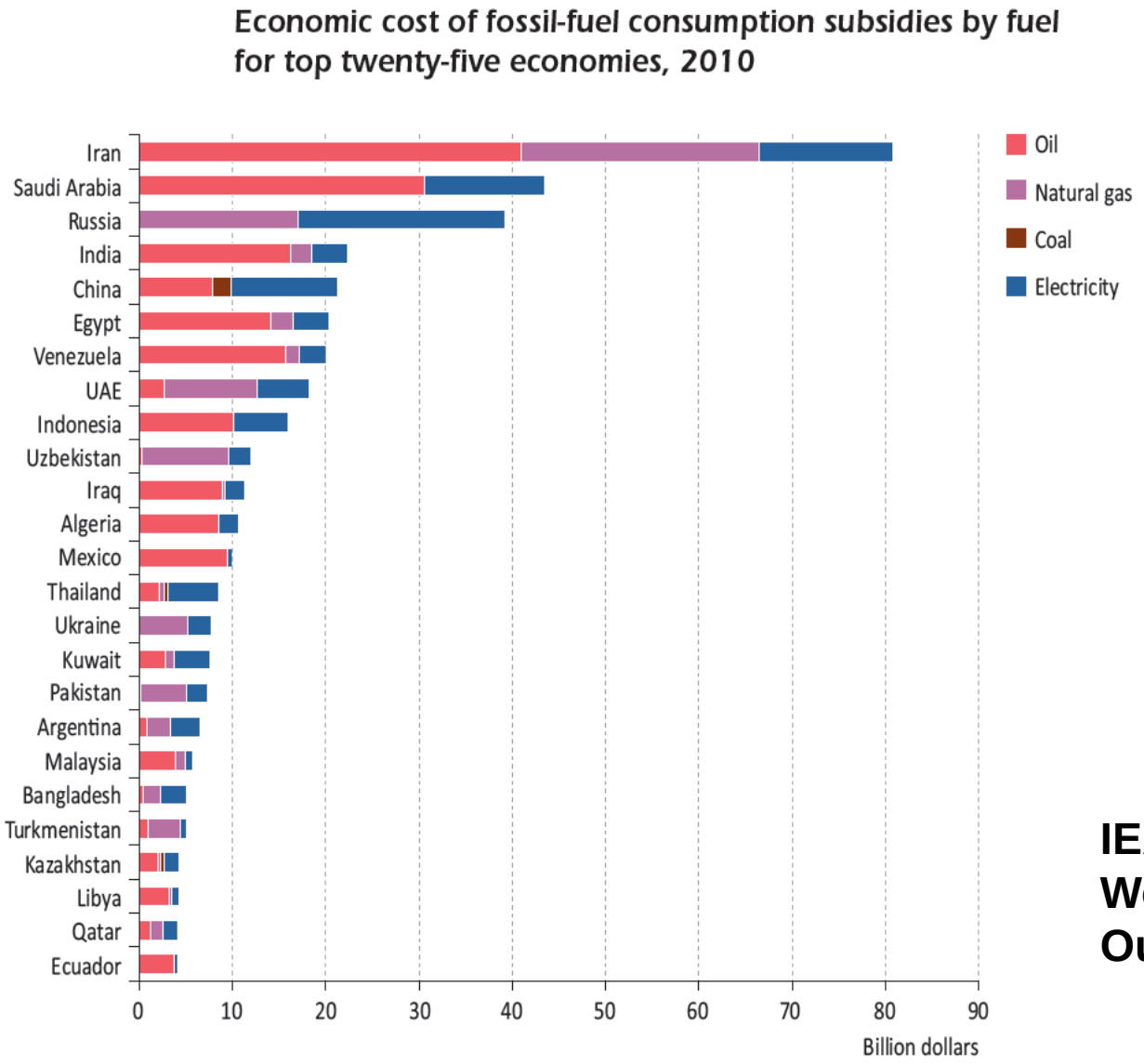
Starting from a very low base, car ownership in non-OECD countries is set to grow considerably, driven by China. The extent of growth will determine future oil demand.

Energy intensity has worsened in Middle East and Africa regions



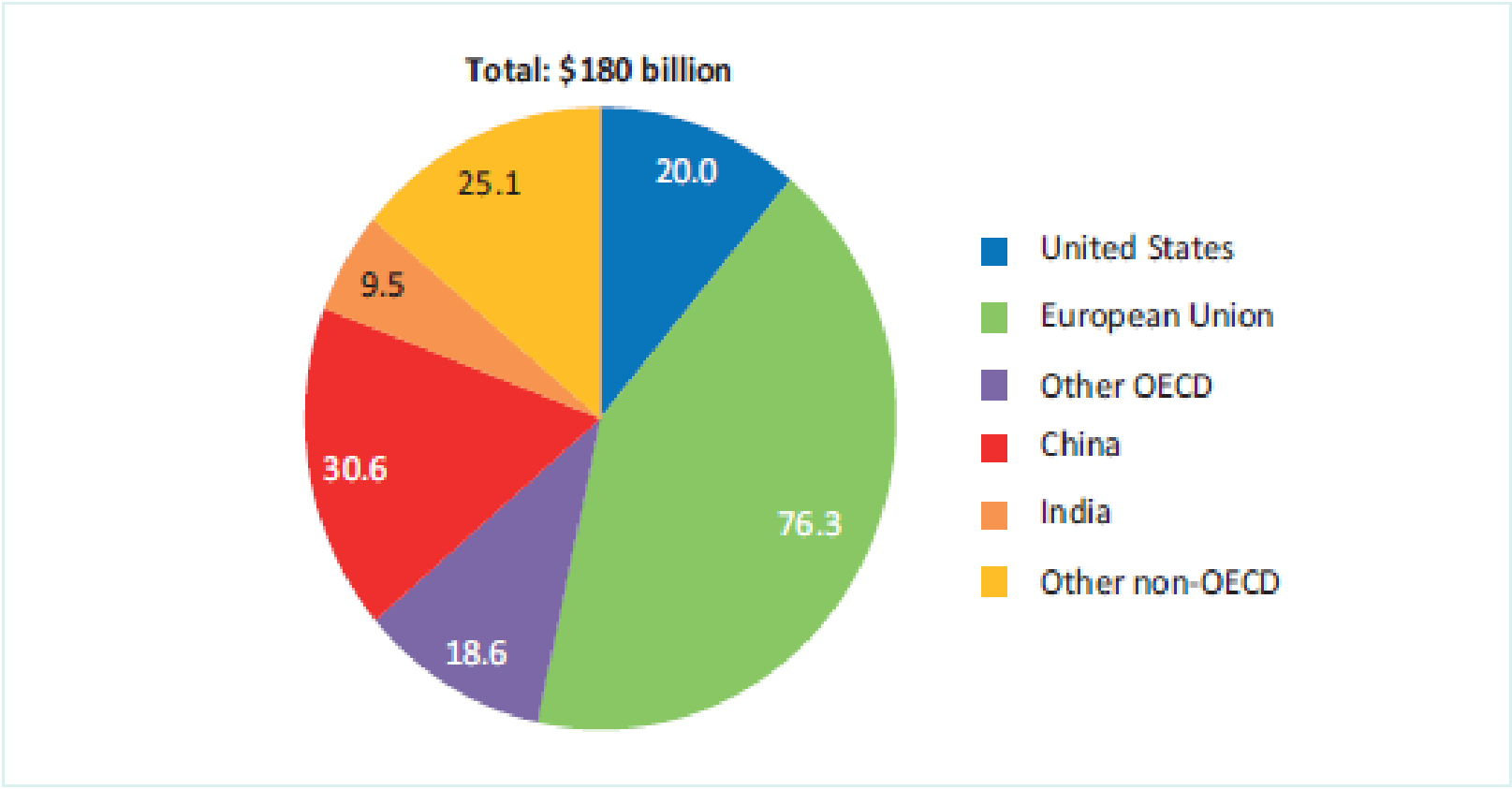
These regional trends are counter to the global trend

Middle East and North Africa account for about two-thirds of total fossil-fuel subsidies

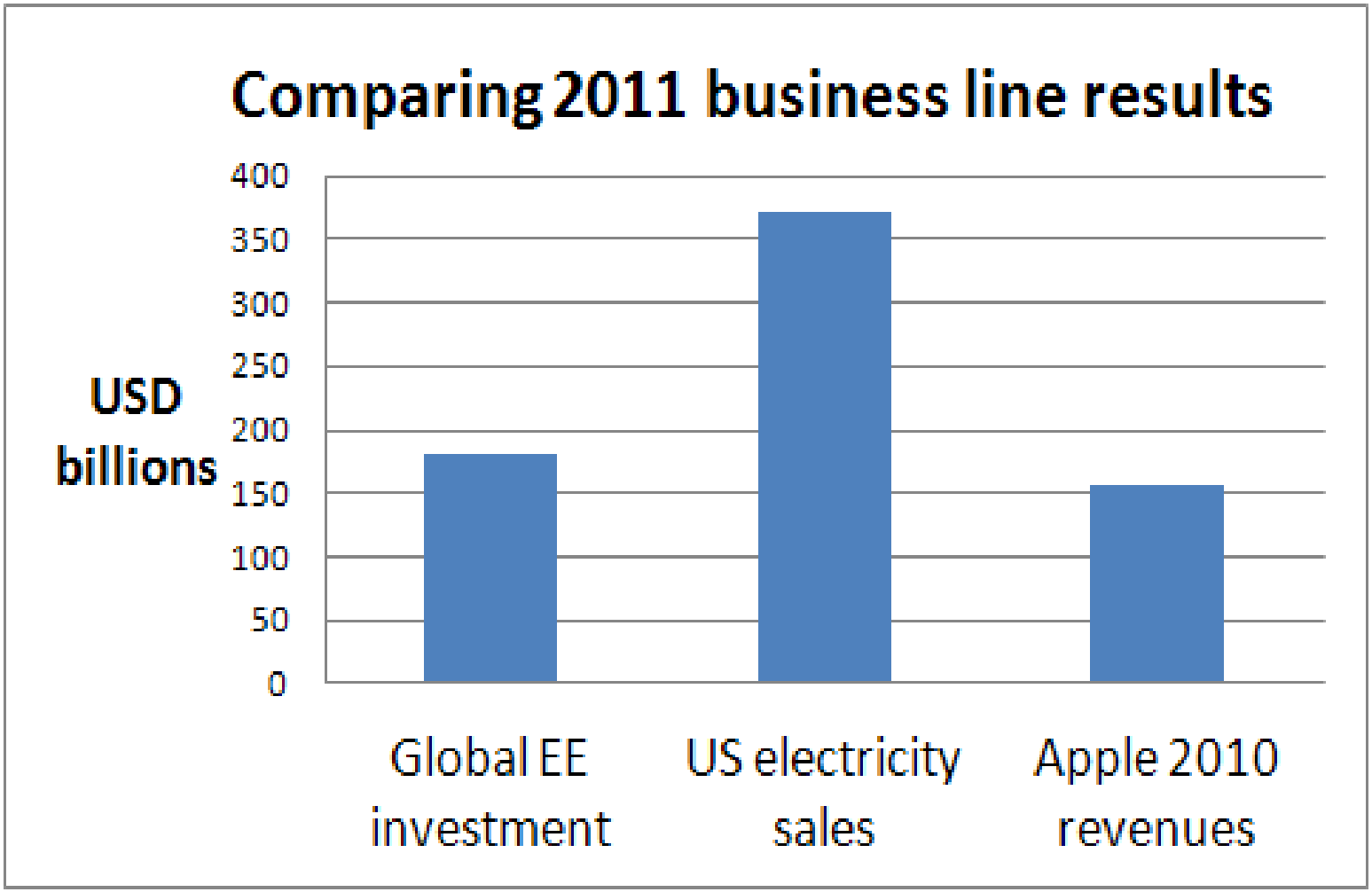


IEA World Energy Outlook 2011

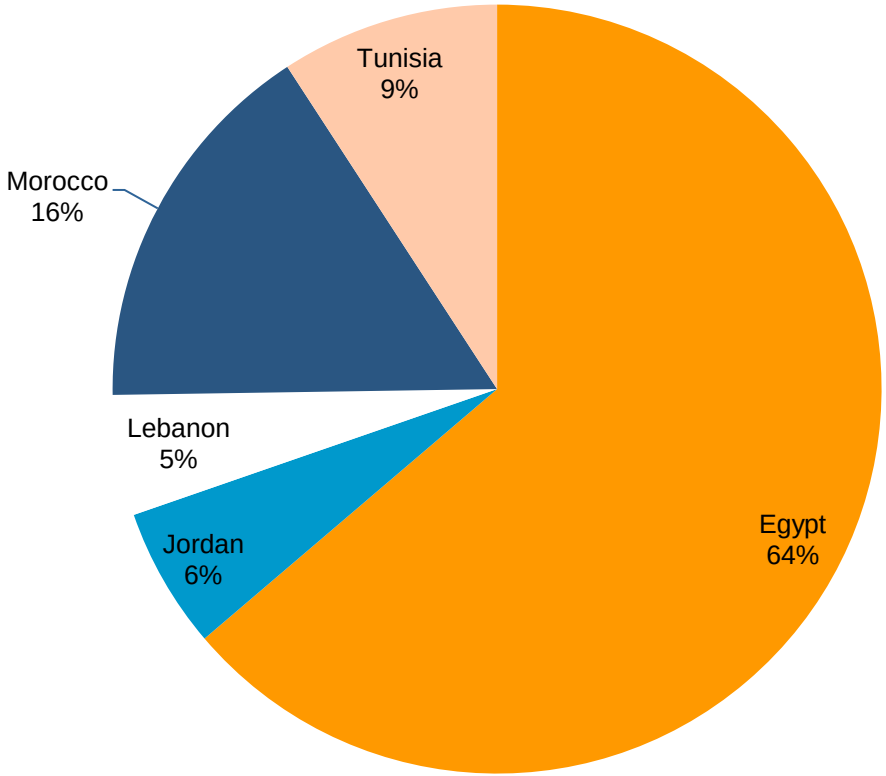
Global investment in energy efficiency



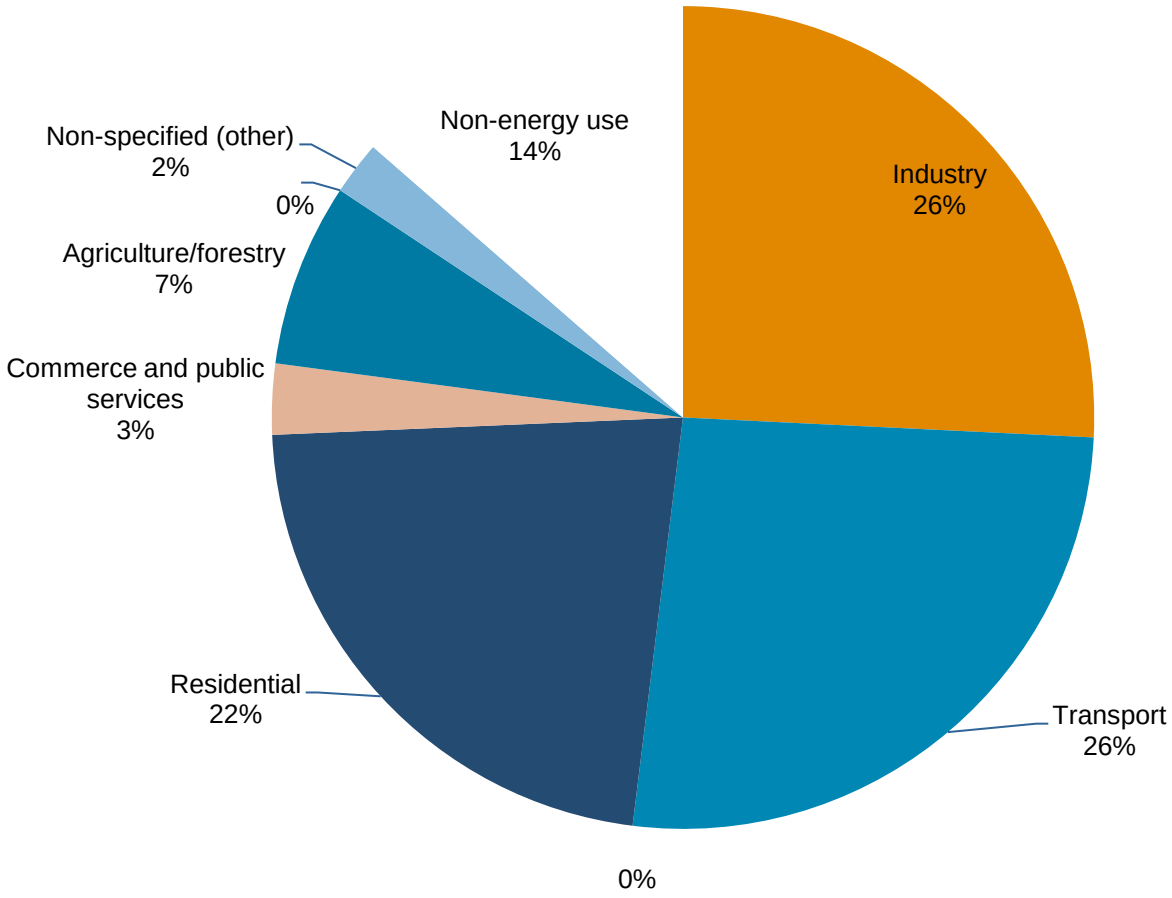
Source: 2011 estimates, WEO 2012



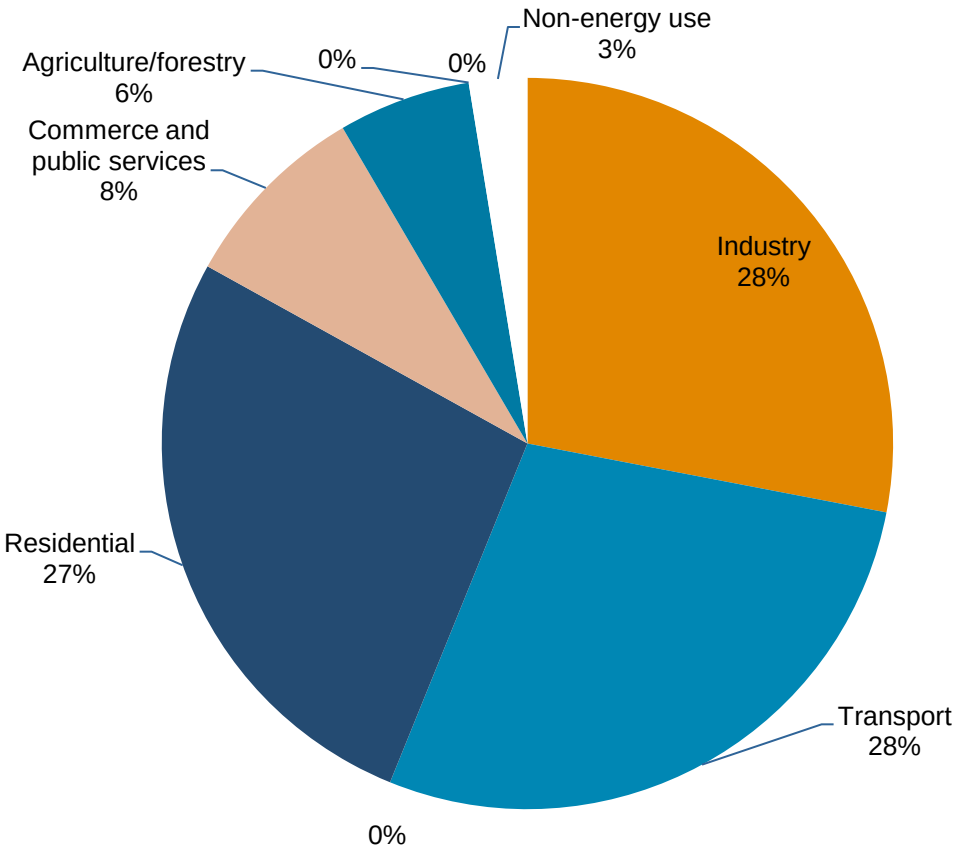
Total Final Energy Consumption (TFC) – across countries in SEMED (+1) region



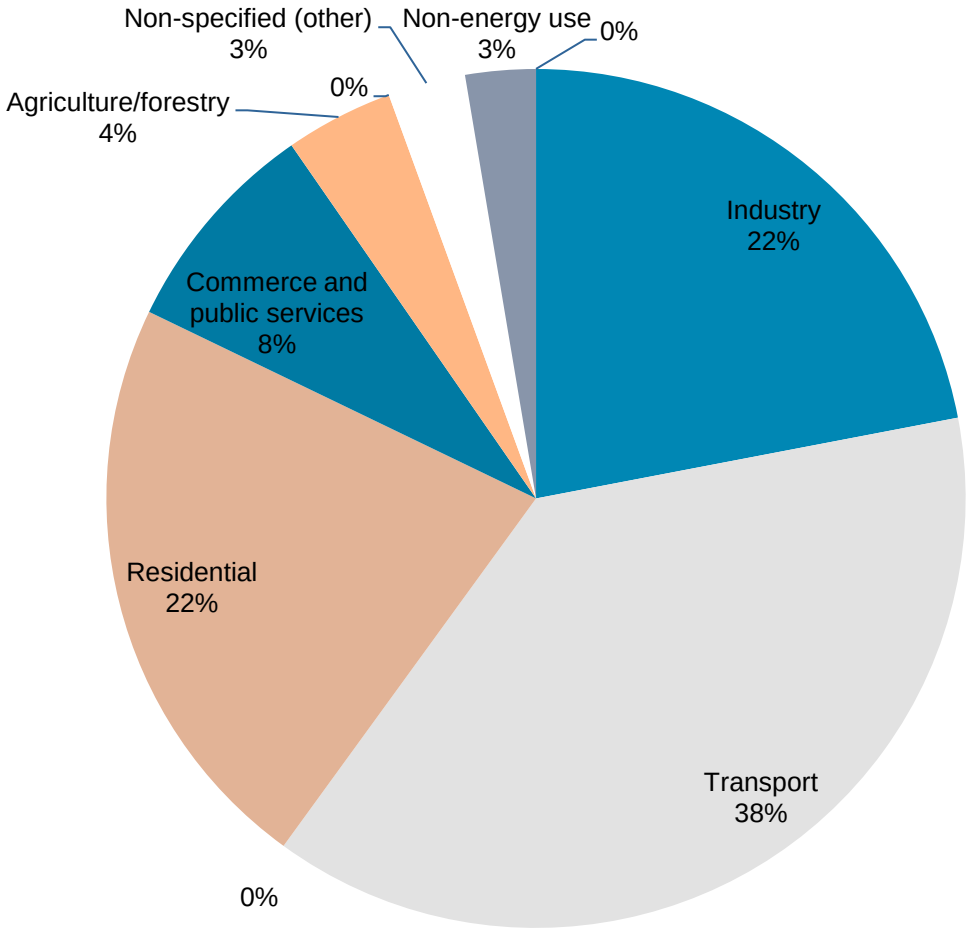
TFC by consuming sector - Egypt



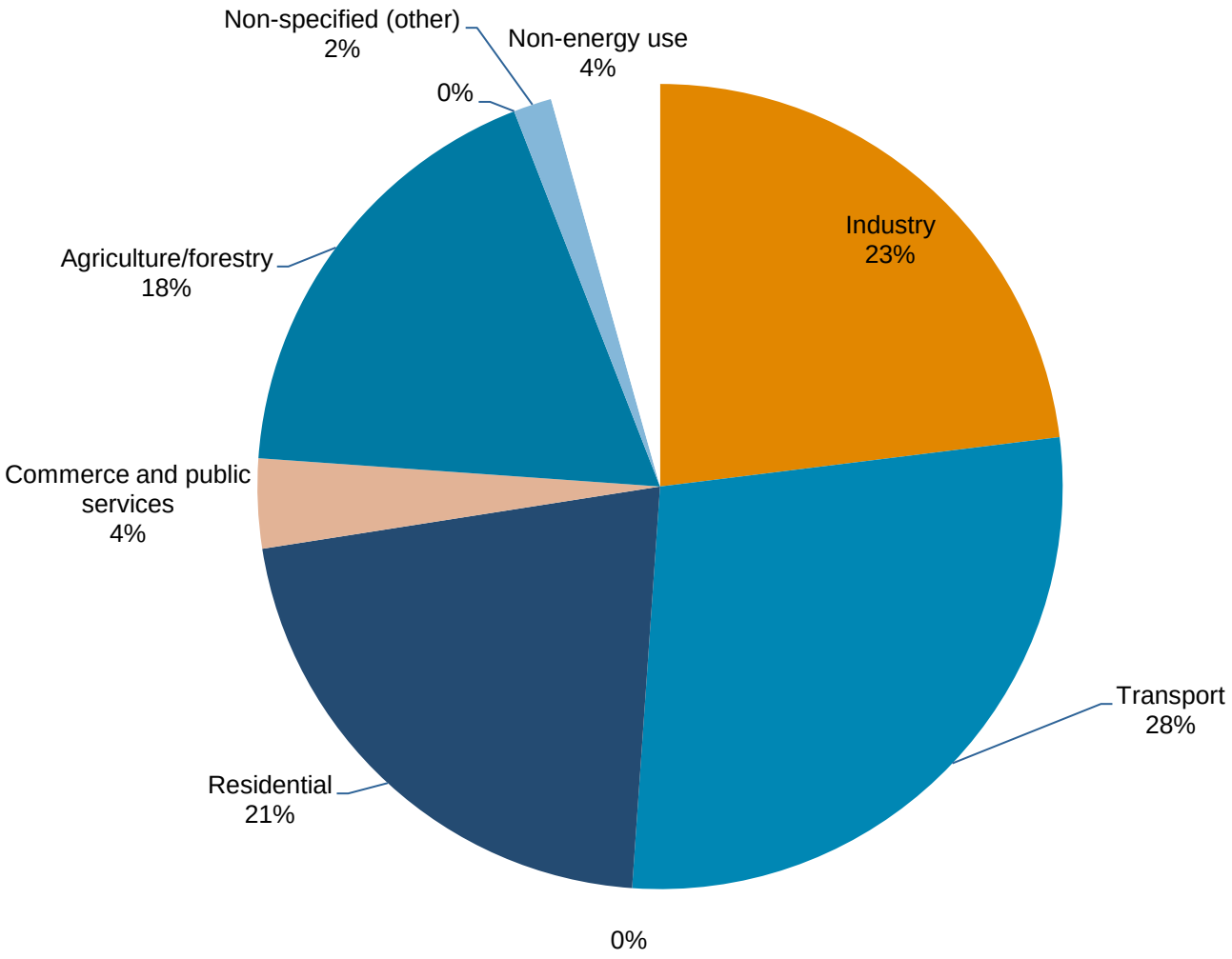
TFC by consuming sector - Tunisia



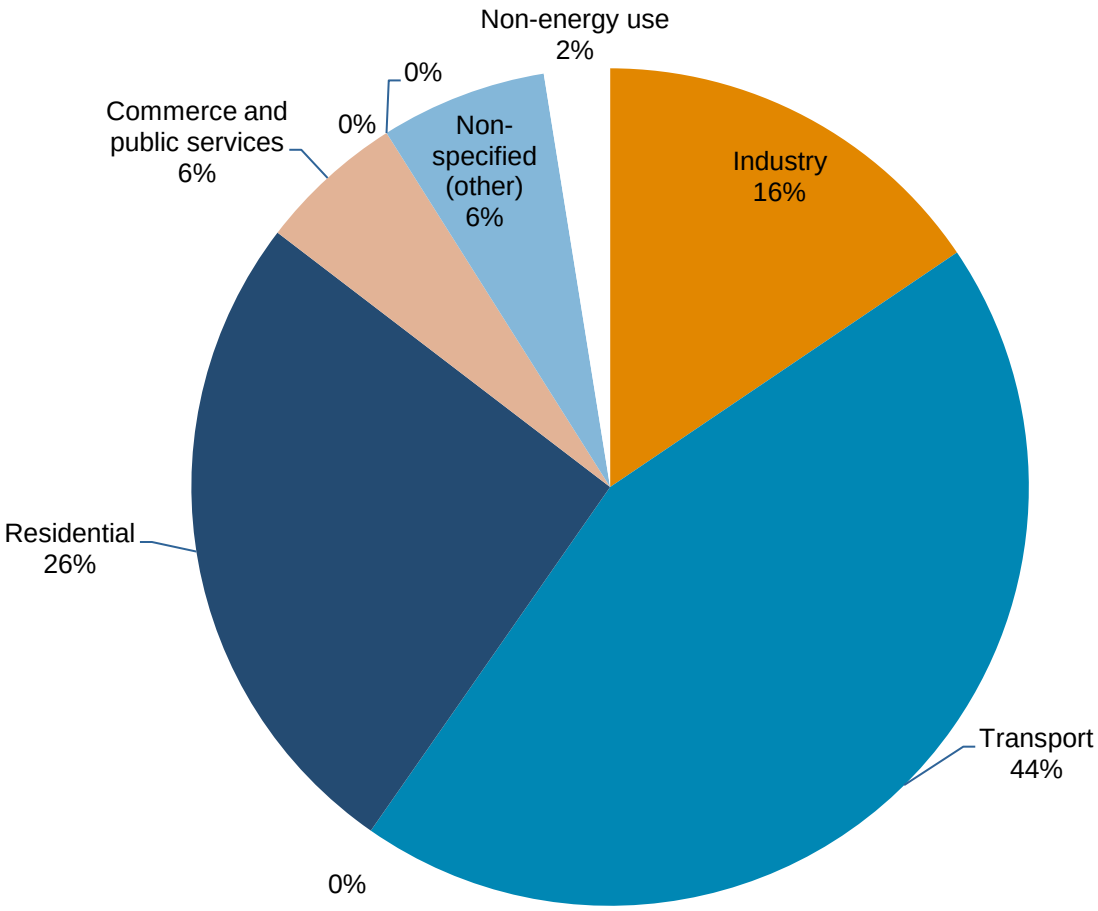
TFC by consuming sector - Jordan



TFC by consuming sector - Morocco



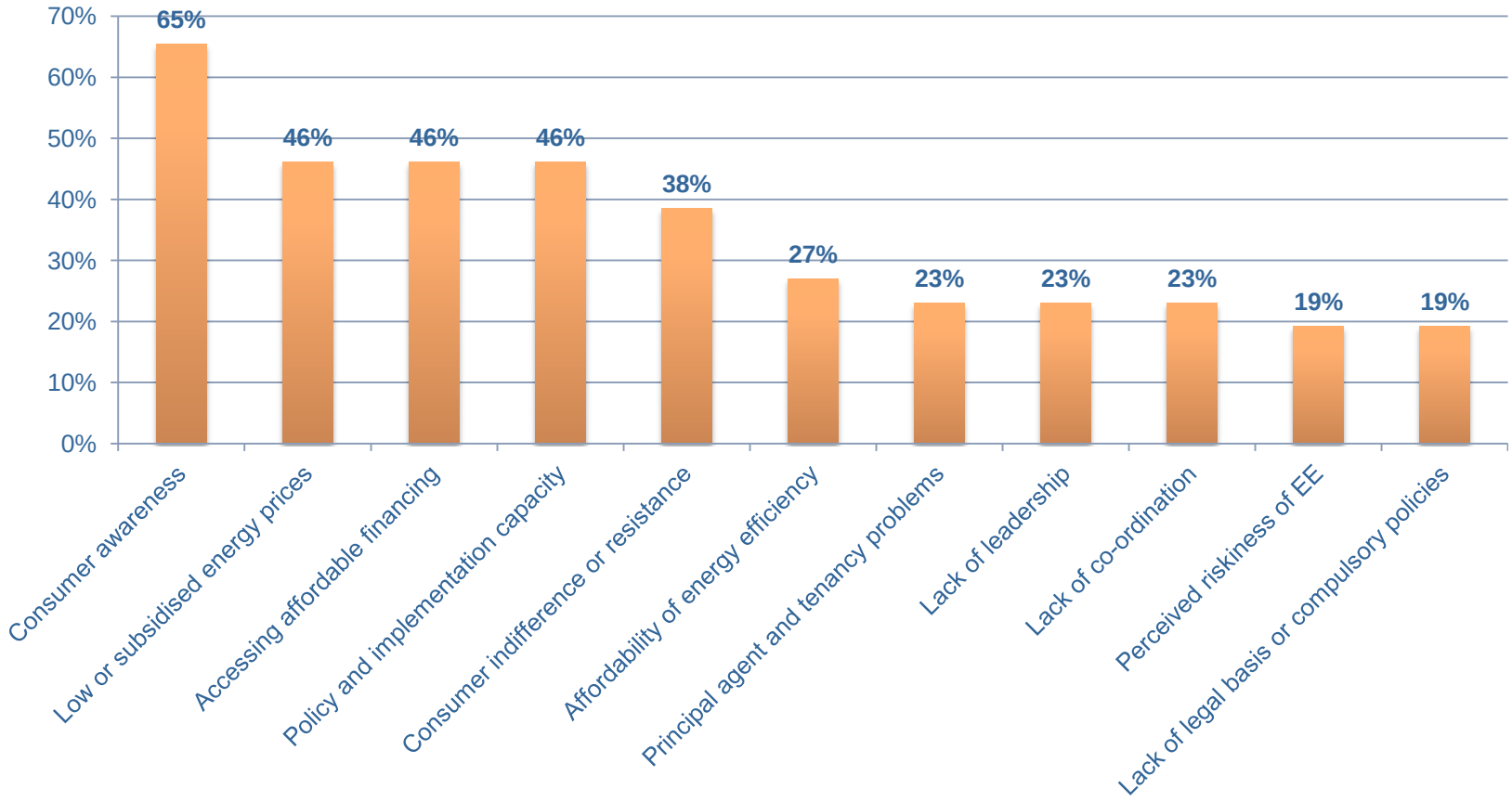
TFC by consuming sector - Lebanon



Barriers to improved energy efficiency

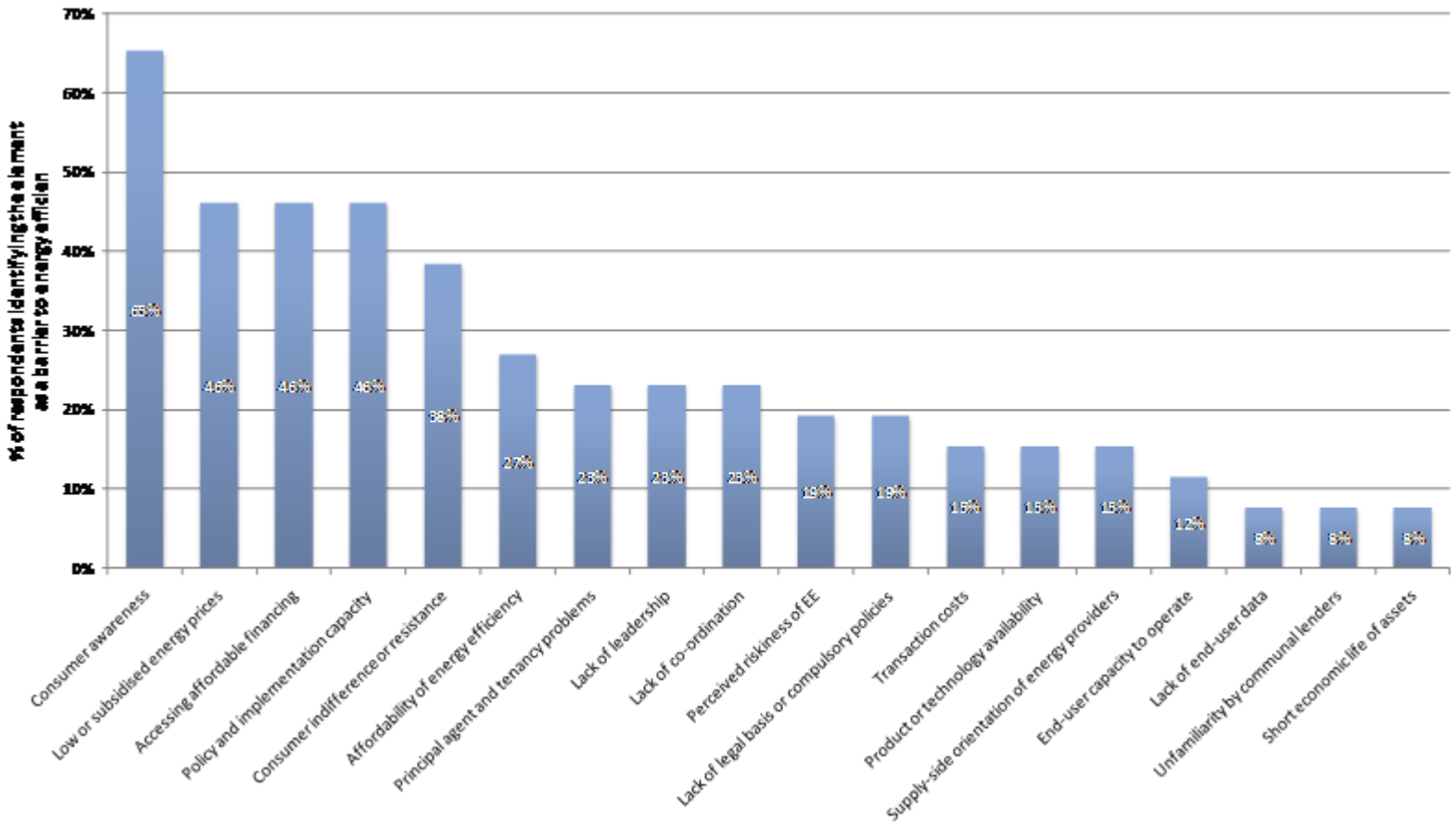
Barrier	Examples
Market failures	• Energy price subsidies • Agency problems, when benefits are split amongst several parties (e.g., renter-occupied housing), reducing the motivation to act • Project size
Financial	• Perceived risk • Transaction costs • Low capacity within the financial sector • Lending terms (period, interest rate, collateral requirements)
Information	• Lack of awareness • Consumer indifference
Regulatory and institutional	• Energy tariffs that discourage EE investment • Institutional bias • Competing
Technical	• Lack of affordable or suitable EE technologies • Measuring savings • Capacity to identifying and implementing EE projects • Project performance risk

IEA survey of energy efficiency barriers



End-user awareness, low energy prices, financing, and implementation capacity are commonly cited

IEA survey of energy efficiency barriers



Policies and interventions

- **Information and education**
  - Advice and assistance
  - Information and product labelling
  - Capacity building
- **Economic instruments**
  - Fiscal incentive
  - Financial measures
  - Market-based instruments
- **Regulatory instruments**
  - Building codes & appliance standards
  - Energy management requirements
  - Energy savings obligations
- **Technology development**
- **Enabling frameworks**
  - Legislation
  - Funding
- **Institutional arrangements**
  - Implementing agencies
  - Public-private partnerships

Matching policies to barriers - examples

Barrier	Policy
Limited Information	Appliance labeling Awareness and education campaigns
Perceived Risk	Public sector procurement Guarantee facilities
Price or market distortion	Appliance standards
Technology and capacity shortfalls	Industry formation Creating EE delivery agencies
Transaction Costs	Audit requirements Project preparation facilities
Access to financing	Revolving funds Public-private partnerships

Enabling frameworks and institutional arrangements

Frameworks & Arrangements	Egypt	Jordan	Kuwait	Lebanon	Morocco	Tunisia
Energy Efficiency Laws & Decrees			√		√	√
National Energy Strategies and Plans		√	√		√	√
Apex Agency for Energy Policy	√	√	√	√	√	√
EE Specialist Agency		√	√	√		√
Results Monitoring Capacity			√			√
Capacity Programs	√			√	√	√
EE Regulations	√		√			
Financial Arrangements					√	√
Academic & Research Capacity	√	√	√	√		√
Industrial Associations	√	√		√	√	√

Source: Tapping a Hidden Resource, World Bank 2009

Questions to consider when formulating energy efficiency policies

- Will it work?
- How much will it cost?
- Who will pay?
- How long will it take?
- Will there be unintended impacts or interference with other policies?
- Does the capacity exist to implement?

Policy Development Session

Form small groups organized by sector

- Industry
- Buildings
- Transport
- Cross-sectoral

Sequence of group discussion

1. Energy efficiency improvement opportunities

- Discuss and agree the major energy savings opportunities within the region
- Identify any major differences across countries

2. Barriers to scaling-up energy efficiency

- Discuss and agree the major barriers in your sector
- Identify any major differences across countries

3. Consider the policy recommendations put forward by the IEA and WEC and others

- Which of these are being implemented or considered?
- Any others that might be appropriate to the region?
- Which are not appropriate to the region? Why?
- Identify any major differences across countries

Sequence of group discussion (con.)

4. Develop additional, regional potential policies

- Discuss additional policies especially applicable to the SEMED/Arab region or your country
- Identify any major differences across countries

5. Rank-order the potential policies

- Work as a group to select the most important and less important potential policies
- Were there major differences across countries?

6. Prepare to report-out your results

- Work with your assigned rapporteur
- Your presentation should cover each step of your work process, policy recommendations, and major differences across countries

Group Discussion Resources

Sector	Opportunities to improve energy efficiency
Manufacturing	Industrial processes, cogeneration, waste heat recovery, preheating, efficient drives.
Buildings and municipal services	Building design and measures such as better insulation, advanced windows, energy efficient lighting, space conditioning, water heating, and refrigeration technologies. District heating systems, combined heat and power, efficient street lighting, efficient water supply, pumping, and sewage removal systems.
Transport	Efficient vehicles, urban mass transport systems, modal shifts to inter- and intracity rail and water transport, compressed natural gas vehicles, traffic demand management.
Agriculture	Efficient irrigation pumping and efficient water use, such as drip irrigation.

Source: Tapping a Hidden Resource, World Bank 2009

Consuming Sector Insights

- Manufacturing: 13 percent of regional GDP and 17 percent of exports. Most energy-intensive manufacturing industries are cement, steel, fertilizers, and glass, consuming 25 percent of the energy and contributing a significant share of GDP
- Buildings: Buildings are estimated to be responsible today for at least 40 percent of energy use in the region
- Transport: No region of the world has a transport sector that is more energy intensive. Measures to bring down energy intensity in the transport sector could include fuel price increases, demand management, greater investment in public transport, measures to improve vehicle fuel economy, and integrated transport and urban planning.
- Agriculture: Nearly half (45.7 percent) of the region's cultivated areas are irrigated, a fact that has huge implications for energy consumption and water-resource management.

Source: Tapping a Hidden Resource, World Bank 2009

Transport energy savings opportunities

Sector	Efficiency measure	Barriers	Policy recommendation	Rank
Passenger vehicles				
Motorcycles and scooters				
Trucks and inland freight				
Air and maritime				
Public transportation				
Rail				

Three transportation efficiency modalities - avoid/reduce, shift, and improve

Buildings and tertiary energy savings opportunities

Sector	Efficiency Measure	Barriers	Policy recommendations	Rank
Street lighting				
Office lighting				
Heating, ventilation and air conditioning				
Commercial refrigeration, freezing, cooking				
Small and medium motors				
Office equipment and servers				

Industry energy savings opportunities

Sector	Efficiency Measure	Barriers	Policy recommendations	Rank
Energy intensive[1]				
Electric motors and drives				
Process heat				
Non-energy intensive[2]				
SMEs				

[1]cement, glass, paper, steel, petro-chemicals, desalination

[2] Food processing, services, textiles, other

Appliances and lighting (Households) energy savings opportunities

Sector	Efficiency Measure	Barriers	Policy recommendations	Rank
Residential white goods				
Residential air conditioners				
TV and electronics				
Hot water heaters				
Heating				
Household Lighting				

Agricultural and water supply energy savings opportunities

Sector	Efficiency Measure	Barriers	Policy Recommendation	Rank
Irrigation				
Desalination				