The background of the slide is a red globe with a white grid of latitude and longitude lines. A yellow map of the world is overlaid on the globe, with several dark grey arrows pointing outwards from the map. The text is centered on the map.

World Energy Outlook

The importance of good data for modeling

Laura Cozzi
Economic Analysis Division

Energy Indicators Workshop
IEA, Paris, 26-27 April 2006

World Energy Outlook

- IEA's flagship publication for medium- to long-term energy demand, supply, investment and CO₂ emissions projections
- Updated every second year, in odd year in-depth analysis of "hot topic"
- Projections are done through partial equilibrium model *World Energy Model* - soft link between top-down econometrics and bottom-up sub-modules
- More than 20 regions covered (including country models for China, India, Brazil, Indonesia, Mexico, Russia)
- WEO is designed to stimulate the policy debate on the basis of rigorous analysis - no policy recommendations

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Three Distinct Policy Scenarios... three distinct outcomes

● Reference Scenario

- Energy needs in 2030 50% higher than today
- Energy Security: Dependence on MENA rises from 22 mbd today to 39 mbd in 2030. MENA gas export set to grow as well
- Environment: Global CO2 emissions rise by 52% by 2030.

● Deferred Investment Scenario

- If MENA countries do not/can not step up their investment efforts...
- Much higher oil (gas) prices

● World Alternative Policy Scenario

- These outcomes can be changed with additional policies
- More than 1000 policies analysed
- Lower oil/gas demand – lower call on MENA – reduced CO2 emissions growth

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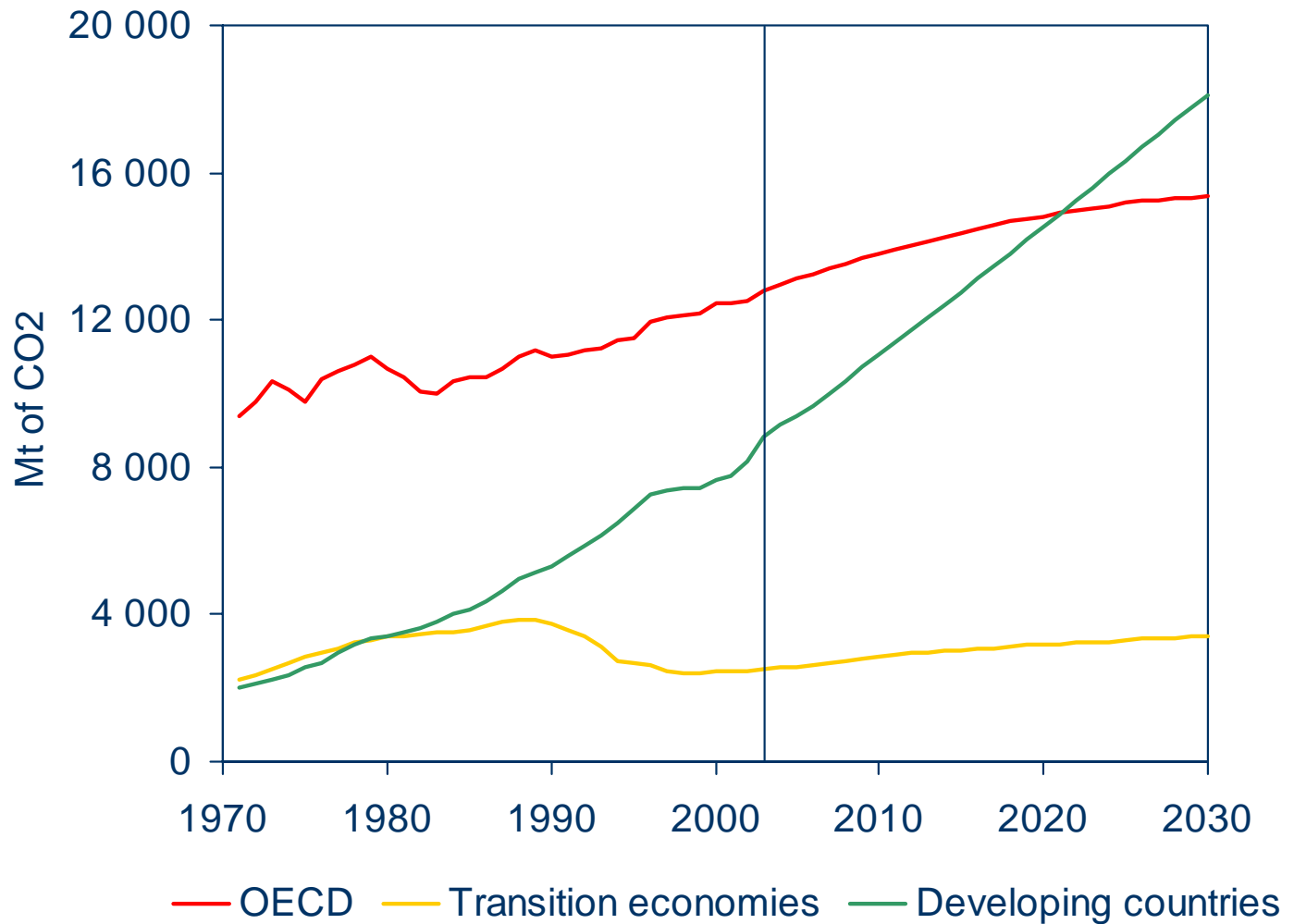
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Reference Scenario

The Environmental Challenge



Global emissions grow 50% between now and 2030, and developing countries' emissions will overtake OECD's in the 2020s

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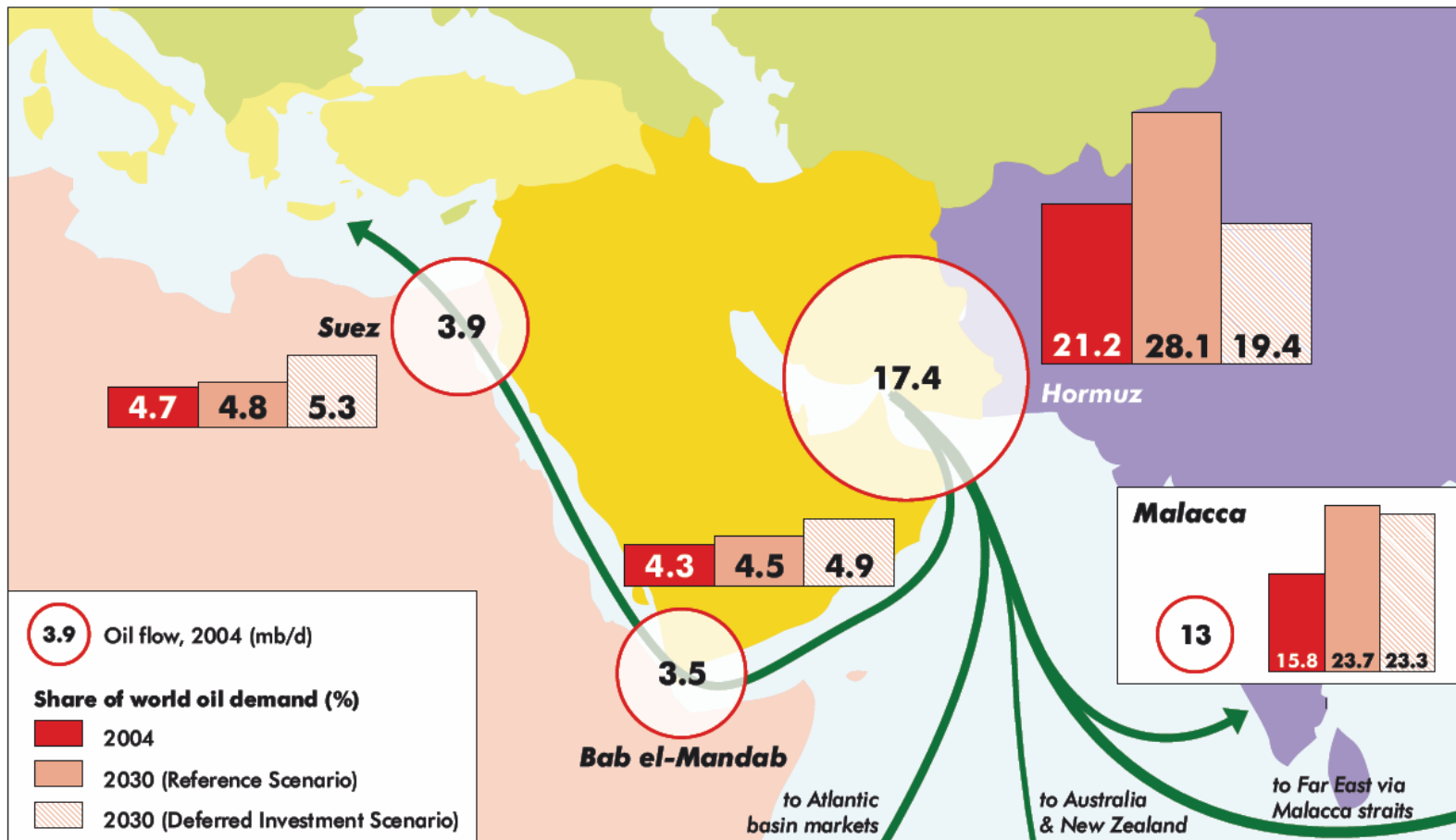
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Energy Security

MENA Oil Exports through the "Dire Straits"



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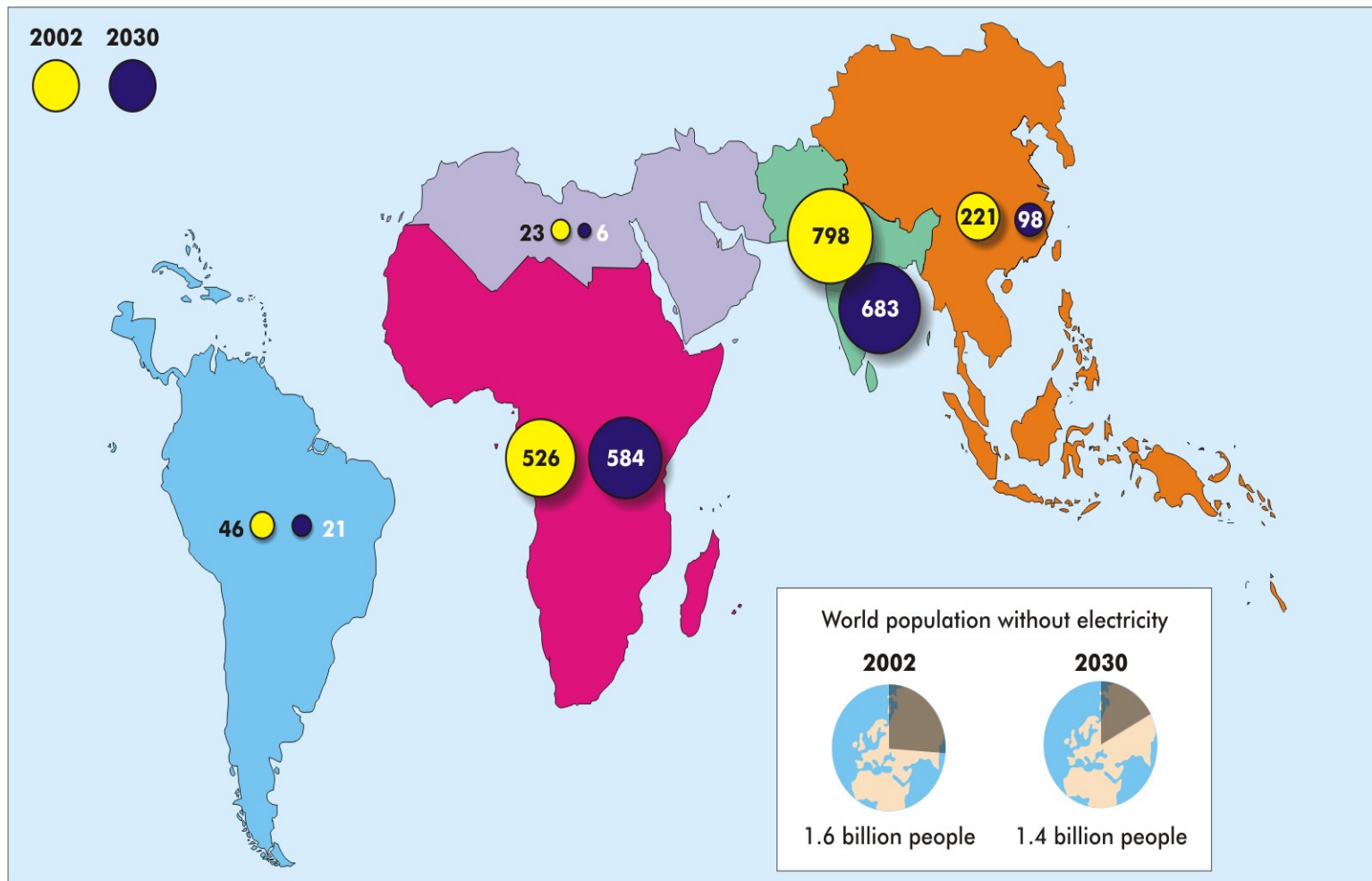
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Much of the additional oil and LNG exports from MENA in the future will be shipped through just three maritime routes

Electricity Deprivation



In 2030, if no major new policies are implemented, there will still be 1.4 billion people without electricity.

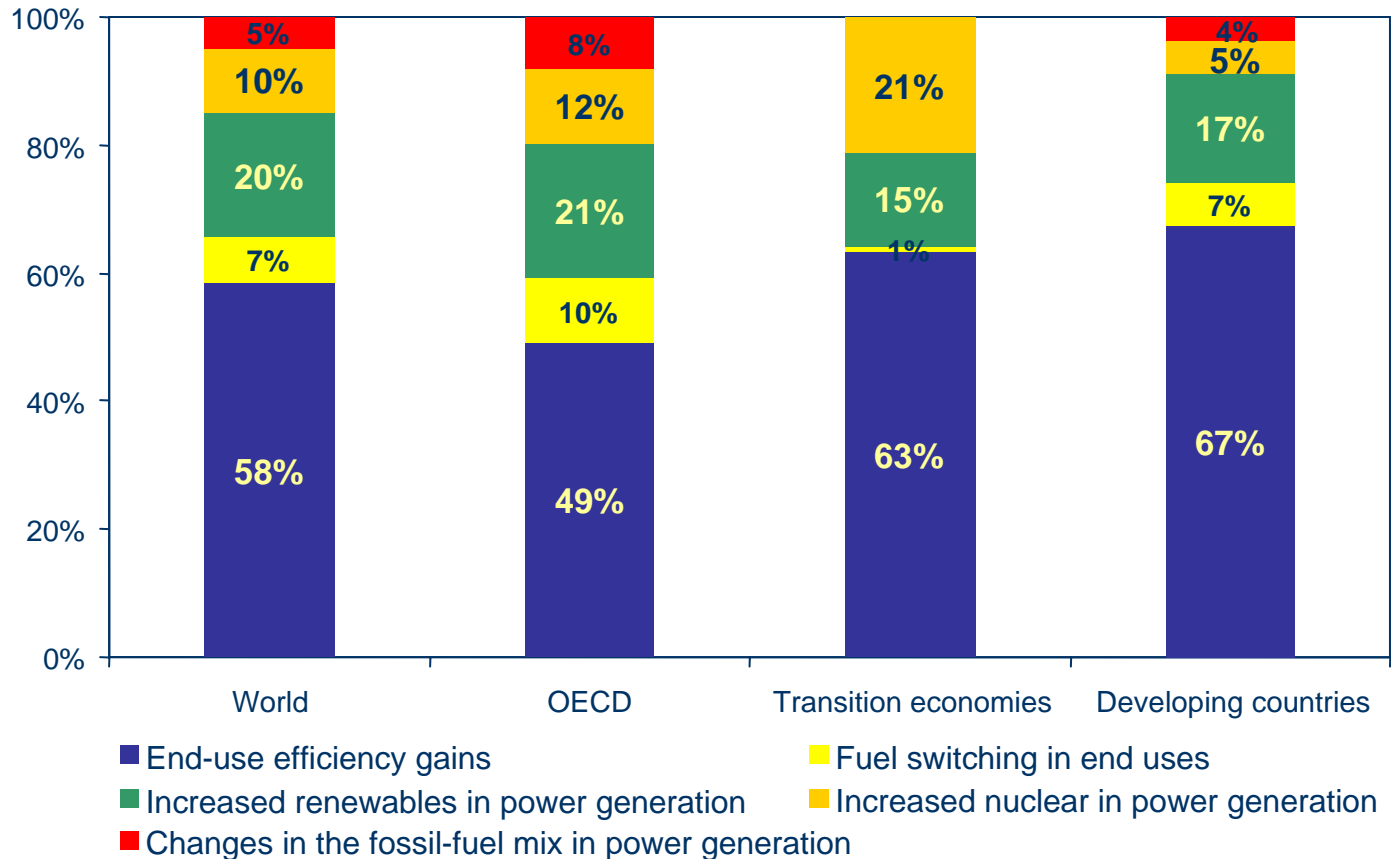
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Alternative Scenario Contributory Factors in CO₂ Reduction



Improvements in end-use efficiency contribute for more than half of decrease in emissions, and renewables use for 20%

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Key Statistics in/for WEO

- IEA ESD (OECD and non-OECD balances, end-use prices, production)
- IEA Oil Market Report (short term oil demand/supply)
- IEA Implementing Agreements (on efficiency of technology, costs etc.)
- Oil and gas reserves, production field-by-field
- Investment in the energy supply chain
- Expenditure on demand side capital stock
- Energy data and Indicators to build “Alternative Policy Scenario”
 - Ex. Transport: pkm, tkm, efficiency by modes
 - Ex. Households: square meters, efficiency
- Electricity access by country
- Energy subsidy

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Importance of Statistics for WEO

- Good time series are key to make LT projections
- Importance of timeliness and accuracy of submission
- Last available data is key to projections (example of US gas demand or China oil demand)
- Non-OECD countries are growing in importance, but we shouldn't neglect liberalizing OECD markets
- Non-fossil sources are increasing fast, and their current consumption level is often shadowed by statistical uncertainties...
-, but oil, gas and coal will remain crucial
- Other increasingly important data:
 - Electrification
 - Costs
 - Increasing breakdown in energy use and related indicators
 - New vectors (Hydrogen: 1% of electricity generation in 2030)

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.. And How We Move Ahead: WEO2006

- Alternative Policy Scenario- G8 mandate
 - Beyond APS
- Tracking Energy Investment
- Impact of High Energy Prices on the Global Economy and Demand
- What role for Nuclear Power?
- Biofuels outlook – an economic assessment
- Country in focus – Brazil
- Sustainable Biomass use in Developing Countries

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