International Energy Agency

WORLD ENERGY OUTLOOK 2012

World Energy Outlook 2012

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- Foundations of global energy system shifting
- Resurgence in oil & gas production in some countries
- Retreat from nuclear in some others
- > Signs of increasing policy focus on energy efficiency

All-time high oil prices acting as brake on global economy

Divergence in natural gas prices affecting Europe (with prices 5-times US levels) and Asia (8-times)

Symptoms of an unsustainable energy system persist

- Fossil fuel subsidies up almost 30% to \$523 billion in 2011, led by MENA
- CO₂ emissions at record high, while renewables industry under strain
- > Despite new international efforts, 1.3 billion people still lack electricity



Share of global energy demand



Global energy demand rises by over one-third in the period to 2035, underpinned by rising living standards in China, India & the Middle East



United States oil and gas production



The surge in unconventional oil & gas production has implications well beyond the United States



Iraq oil exports

Iraq oil production



Iraq accounts for 45% of the growth in global production to 2035; by the 2030s it becomes the second-largest global oil exporter, overtaking Russia



Middle East oil export, by destination



By 2035, almost 90% of Middle Eastern oil exports go to Asia; North America's emergence as a net exporter accelerates the eastward shift in trade

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Natural gas: towards a globalised market

Major global gas trade flows, 2035

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Rising supplies of unconventional gas & LNG help to diversify trade flows, putting pressure on conventional gas suppliers & oil-linked pricing mechanisms



Net oil & gas import dependency in selected countries



While dependence on imported oil & gas rises in many countries, the United States swims against the tide

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A power shift to emerging economies WORLD ENERGY OUTLOOK 2012

Change in power generation, 2010-2035



The need for electricity in emerging economies drives a 70% increase in worldwide demand, with renewables accounting for half of new global capacity



Global renewable energy subsidies of \$4.8 trillion, 2011-2035



Renewable subsidies were \$88 billion in 2011; over half the subsidies required to 2035 has been committed to existing projects or is needed to meet 2020 targets



Average household electricity prices, 2035



Electricity prices are set to increase with the highest prices persisting in the European Union & Japan, well above those in China, Russia & the United States



Energy efficiency potential used by sector in the New Policies Scenario



- Unrealised energy efficiency potential
- Realised energy efficiency potential

Two-thirds of the economic potential to improve energy efficiency remains untapped in the period to 2035



Total primary energy demand by scenario



Economically viable efficiency measures can halve energy demand growth to 2035

The Efficient World Scenario delays carbon lock-in



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Energy efficiency can delay "lock-in" of CO_2 emissions permitted under a 2 C trajectory – which is set to happen in 2017 – until 2022, buying five extra years

Foundations of energy system shifting: implications for Poland

- With Poland's robust economy & ageing energy infrastructure, government & industry face critical policy & investment choices
- Energy efficiency as well as nuclear, renewables & natural gas can help Poland address both energy security & climate change
- Unconventional natural gas resources in Poland, if cost-effective & developed in a sustainable manner, can have profound implications for the nation itself, as well as the EU as a whole
 - Poland's energy sector should foster developments of crucial new energy technologies, including CCS, & remain responsive to the ever-changing global energy landscape