

Energy Efficiency Introduction Central & West Asia Regions

Session 1

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Energy Efficiency Introduction

- Energy Projections
 - Asia and the Pacific's primary energy demand is projected to increase at 2.1% per year over the period (2010–2035)—faster than the projected world average growth rate of 1.5% per year during the same period. With this growth, primary energy demand of Asia and the Pacific will reach 8,358.3 million tons of oil equivalent (Mtoe) by 2035, up from 4,985.2 Mtoe in 2010.

Energy Efficiency Introduction

- Fossil fuels will dominate the primary energy mix
 - coal will increase by 1.7% yearly through 2035, slower than the growth in overall primary energy demand (2.1%), and will reduce its share of overall demand to 42.1% by 2035 from 46.2% in 2010.
 - oil will also increase more slowly, at 1.9% per year, and have a lower share of overall primary energy demand, at 26.3%, compared with 24.8% in 2010.
 - natural gas will increase at a brisk 3.9% per year because of increased use for power generation, and increase its share to 17.5% by 2035 from 11.4% in 2010.

Energy Efficiency Introduction

- **Coal**

- Demand for coal in Asia and the Pacific will increase by 52.8% from 2010 to 2035, reaching 3,516.3 million tons of oil equivalent (Mtoe) by 2035.

- **Oil**

- Oil demand in Asia and the Pacific is projected to increase by 1.9% yearly over the outlook period and reach 1,973.0 Mtoe by 2035, 59.3% higher than the 1,238.2 Mtoe in 2010.

- **Natural Gas**

- Demand for natural gas is projected to increase at 3.9% per year, reaching 1,463.2 Mtoe in 2035, 2.6 times the 2010 level of 566.7 Mtoe.

Energy Efficiency Introduction

- Growth in Primary Energy Demand
 - will differ by region and by member economy, reflecting the regional diversity in economic development and population growth.
 - primary energy demand in Asia and the Pacific will increase to 92.4% in 2035 from 87.2% in 2010.
 - In contrast, the share of the Developed Group will be reduced to 7.6% in 2035, from 12.8% in 2010.

Energy Efficiency Introduction

		Primary Energy Demand (Mtoe)			Annual Growth Rates (%)		
		2010	2020	2035	2010–2020	2020–2035	2010–2035
Coal	DMCs	2,133.8	2,520.7	3,349.6	1.7	1.9	1.8
	Developed Group	167.6	167.5	166.7	0.0	0.0	0.0
	Asia and the Pacific Total	2,301.4	2,688.2	3,516.3	1.6	1.8	1.7
Oil	DMCs	989.3	1,299.1	1,775.2	2.8	2.1	2.4
	Developed Group	248.9	215.5	197.8	(1.4)	(0.6)	(0.9)
	Asia and the Pacific Total	1,238.2	1,514.6	1,973.0	2.0	1.8	1.9
Natural Gas	DMCs	450.4	708.2	1,271.3	4.6	4.0	4.2
	Developed Group	116.2	147.0	191.9	2.4	1.8	2.0
	Asia and the Pacific Total	566.7	855.2	1,463.2	4.2	3.6	3.9
Nuclear	DMCs	77.2	220.4	347.3	11.1	3.1	6.2
	Developed Group	75.1	57.0	14.9	(2.7)	(8.5)	(6.3)
	Asia and the Pacific Total	152.3	277.3	362.3	6.2	1.8	3.5
Hydro	DMCs	89.2	155.8	192.5	5.7	1.4	3.1
	Developed Group	10.3	12.3	12.9	1.8	0.3	0.9
	Asia and the Pacific Total	99.5	168.1	205.3	5.4	1.3	2.9
Others	DMCs	603.3	684.1	783.9	1.3	0.9	1.1
	Developed Group	21.3	41.7	54.5	6.9	1.8	3.8
	Asia and the Pacific Total	624.6	725.8	838.4	1.5	1.0	1.2
Total	DMCs	4,345.4	5,588.2	7,719.6	2.5	2.2	2.3
	Developed Group	639.8	641.0	638.7	0.0	0.0	0.0
	Asia and the Pacific Total	4,985.2	6,229.1	8,358.3	2.3	2.0	2.1

(-) = negative number, DMC = developing member country, Mtoe = million tons of oil equivalent

Source: ADB Energy outlook (2013)

Energy Efficiency

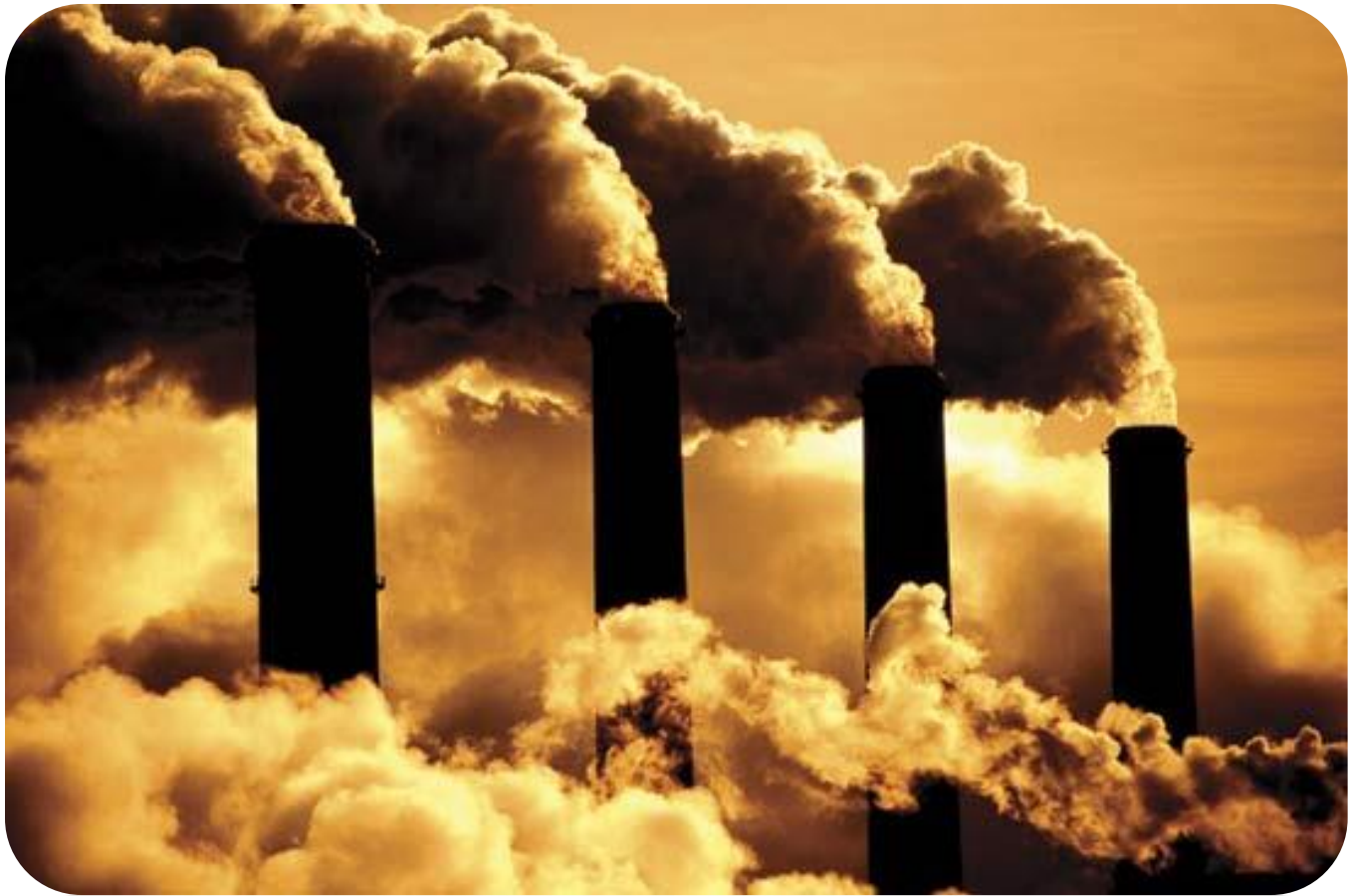
- **Why Change ?**
 - Energy Security
 - Sustainability
 - Climate Change
 - Global Warming



**Our Space Ship
“Earth”**



Inconvenient Truths...



Inconvenient Truth...



Inconvenient Truth

Earth's eco systems provide goods & services worth \$83 trillion per year – for free! – about twice the value of global GNP (which is just \$18 trillion)

Inconvenient Truths

Annual resource-productivity improvement required to meet global demand
2010-30

Materials
GDP/metric ton

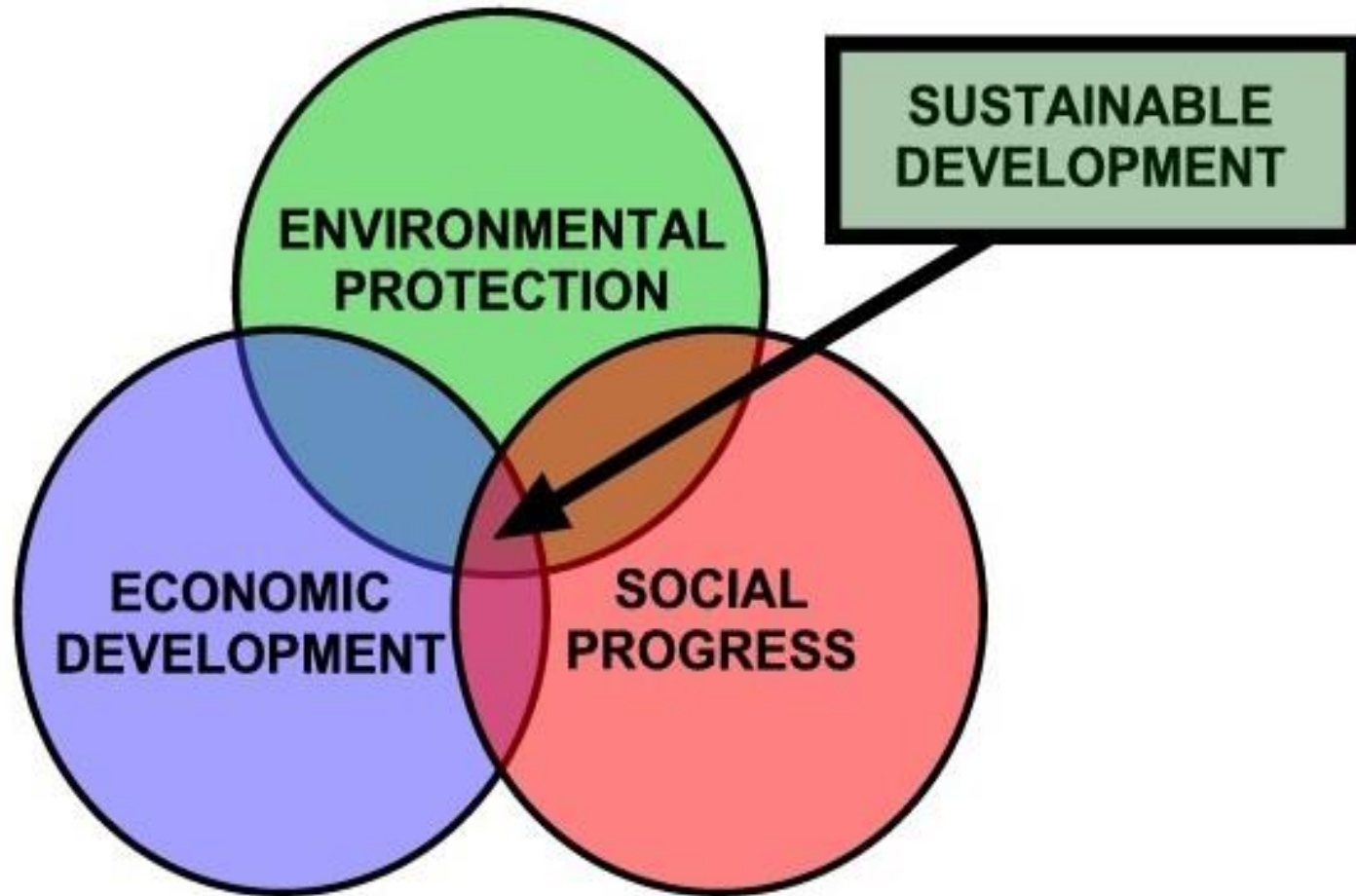
Food
yield/hectare

Energy
GDP/Btu

Water
GDP/cubic meter



Integration of Policy and Practice



The Brundtland Definition

Sustainable Development is:

“Development which meets the needs of the present without compromising the ability of future generations to meet their own needs.”

Our Common Future (1987)

Energy Efficiency Seminar

- **The Key Questions to be addressed:**
- **Energy demand growth:**
 - Will the current pace of energy demand growth continue in the future? When and what would be the factors that can change the future trajectory of energy demand growth from the current robust growth in Asia and the Pacific?
- **Choice of energy source:**
 - How would the choice of energy in Asia and the Pacific change from the current energy mix? What are the factors that affect such a transformation?
- **Investment for upstream, midstream, and downstream:**
 - How much money will be required to develop energy supply infrastructure to meet the energy demand growth in the future? How will the regional member countries' energy investment burdens differ? What are the factors affecting the difference in these burdens?
- **Technology and energy savings potential:**
 - What is the technical potential for the regional member countries to save energy through the deployment of advanced technologies? What is the additional cost that regional members have to bear to deploy advanced technologies?

Energy Efficiency Measurements

- Energy Efficiency measured against what?
 - GDP
 - Industrial Sectors
 - Large conurbations
 - Individual Companies / Organisations /Outputs
 - Individuals



Energy Efficiency Stakeholders

- Stakeholders with a sustainable agenda
 - Direct
 - National
 - Local
 - Eco Groups
 - Shareholders
 - Indirect
 - Industrial
 - Commercial
 - Residential

Energy Efficiency Barriers

- Barriers to Implementation
 - Sustainability
 - Energy Subsidies
 - Technology
 - Education
 - Culture / Behaviour
 - Location
 - Communication

Energy Efficiency Q&A

Any Questions ??