
Energy Security: The European Approach and the ASEM Ministerial Conference Perspectives

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1. Energy Integration in the EU – Present Situation and Future Prospects

1. Context
2. The three challenges
3. The EU response
4. External energy policy aspects
5. EU energy relations with Asia

2. ASEM Ministerial Conference

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2. Conference Materials

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2. Increasing cooperation on climate change, energy, and sustainable development
3. Further increasing energy efficiency and conservation
4. Accelerating growth of new and renewable energy sources
5. Promoting actively nuclear safety and security
6. The Way Forward

4. ADB GMS RETA N° 6440 Project: The GMS Power Market Integration

Note: This Presentation is based on information coming from the DG Energy and Transport, European Commission, as well as from IEA and ADB GMS RETA No 6440.

Disclaimer: The content of this presentation is the sole responsibility of CEERD and can under no circumstances be regarded as reflecting the position of the European Union, IEA and ADB

1. Energy Integration in the EU

- 1.1 Context**
- 1.2 The three challenges**
- 1.3 The EU response**
- 1.4 External energy policy aspects**
- 1.5 EU energy relations with Asia**

1. Energy Integration in the EU

1.1 Context

1.2 The three challenges

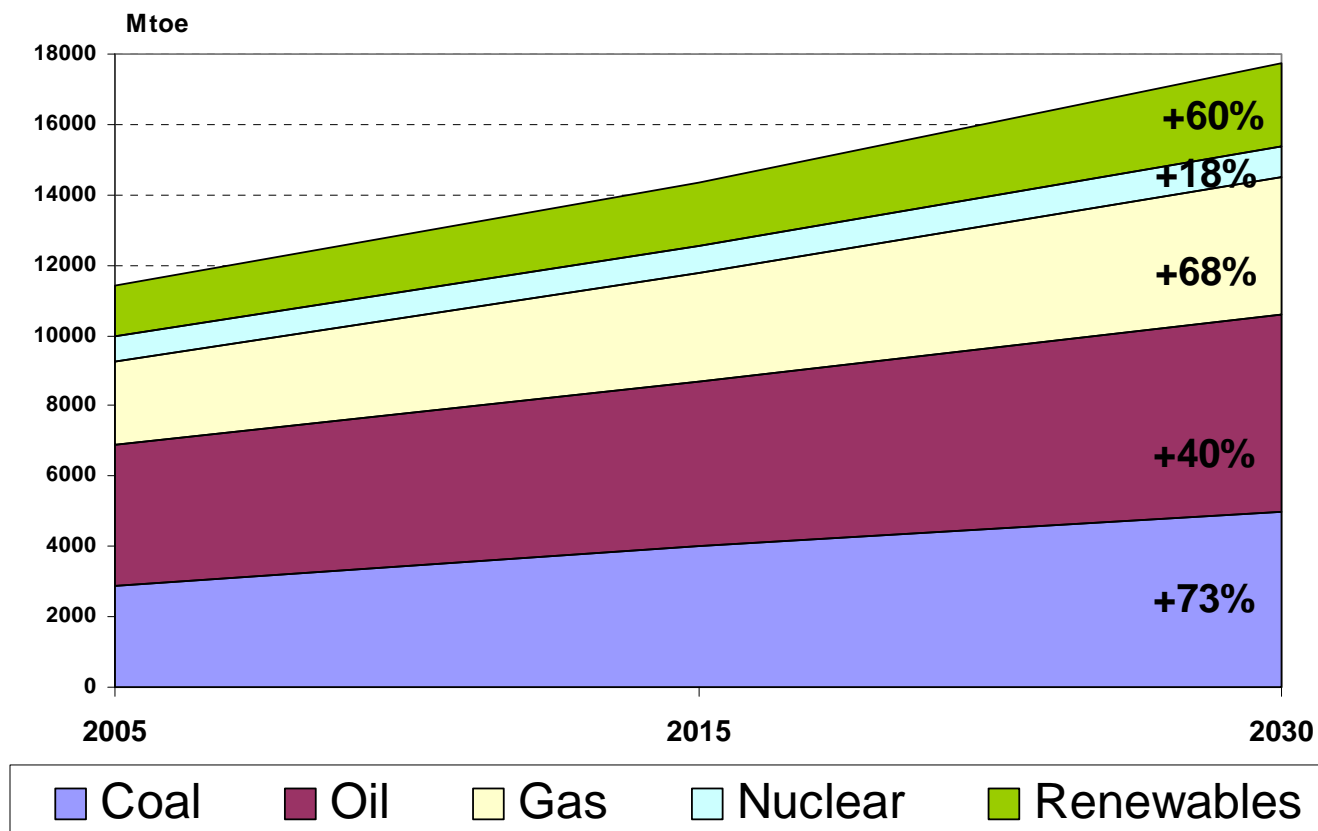
1.3 The EU response

1.4 External energy policy aspects

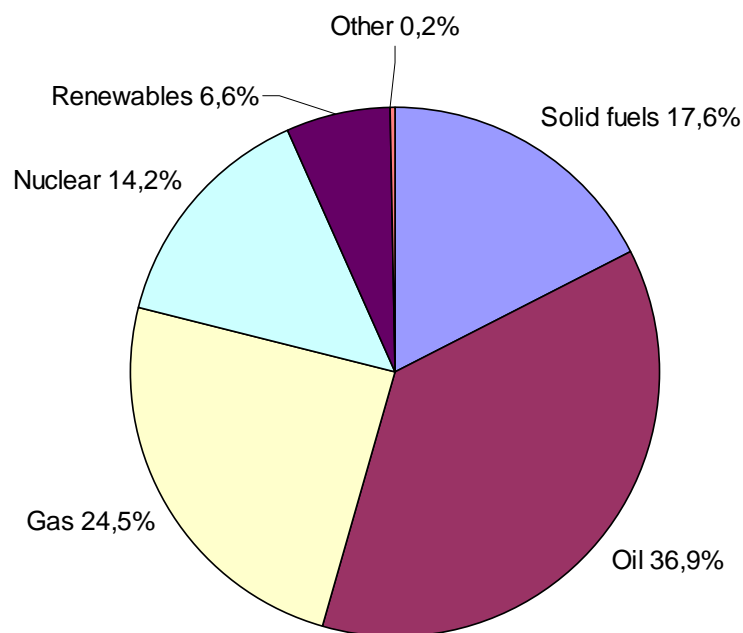
1.5 EU energy relations with Asia

1.1 Context: World Energy demand

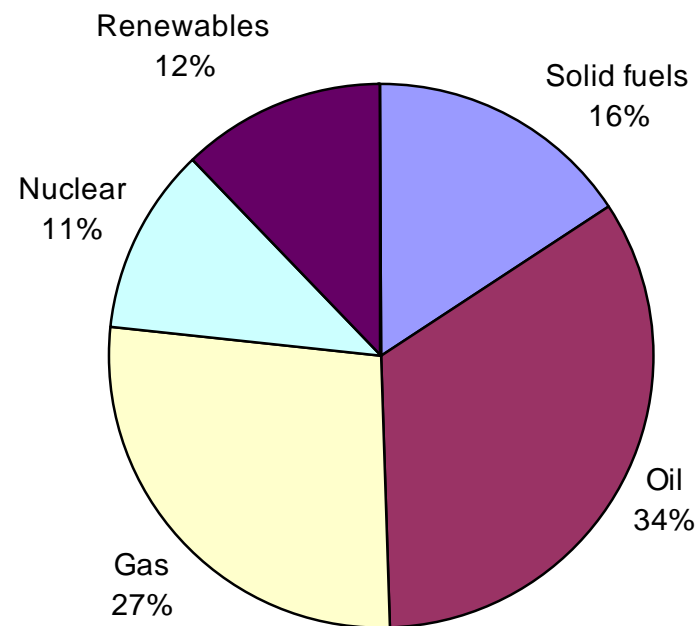
**Total energy demand up by 55% in business as usual
between 2005 and 2030**



**EU-27 ENERGY MIX: High dependence on fossil fuels
=> Business as usual is **NOT SUSTAINABLE****



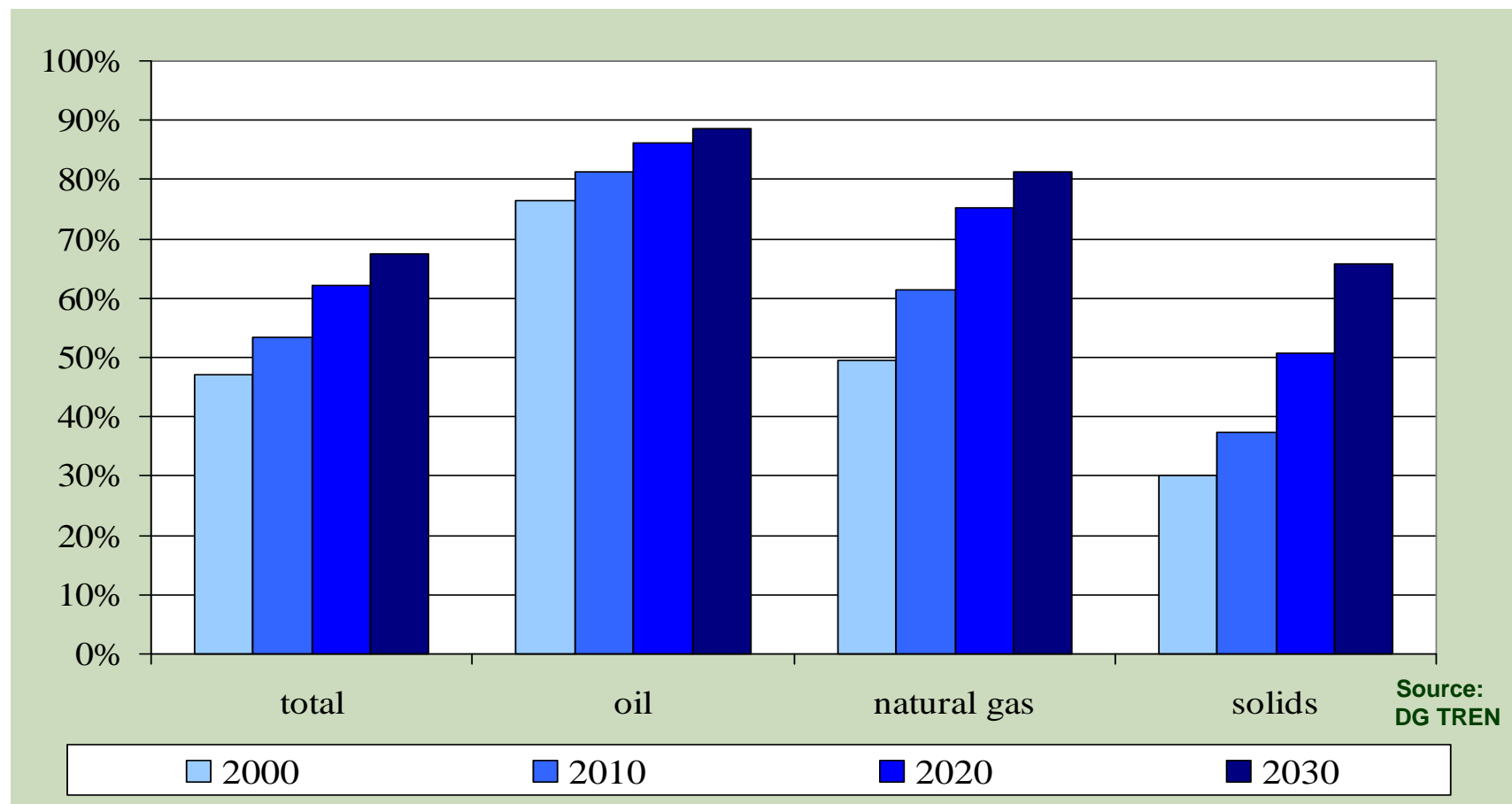
2005



2030 (BaU)

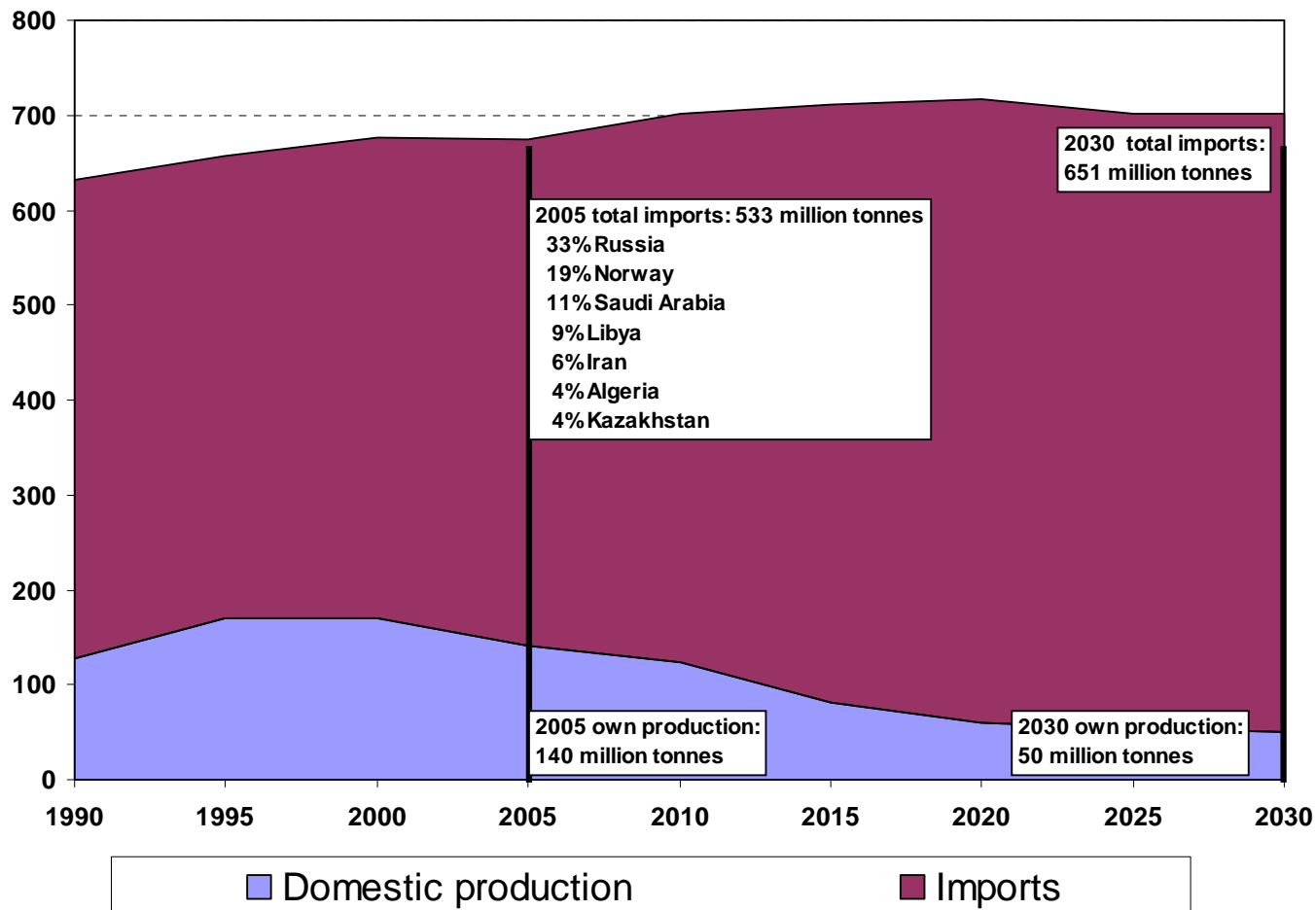
Source: DG TREN/EUROSTAT

Anticipated growth in the EU's import dependency



1.1 Context: OIL: EU-27 Oil demand

Reserves concentrated in the Middle East but a global market



Proven reserves:
 Saudi Arabia 22%
 Iran 11.5%
 Iraq 9.5%
 Kuwait 8.5%
 UAE 8%
 Venezuela 6.5%
 Russia 6%
 Central Asia+Caspian 4%*
 Libya 3%
 Nigeria 3%
 Others 17.5%

Note: True Central Asian reserves are unknown – still using old information

Challenges
 Transport sector
 Russia
 Caspian
 Middle East

Major Oil Pipelines towards the European Union (EU)



MapID: 1485
 Production Date: 14 January 2006

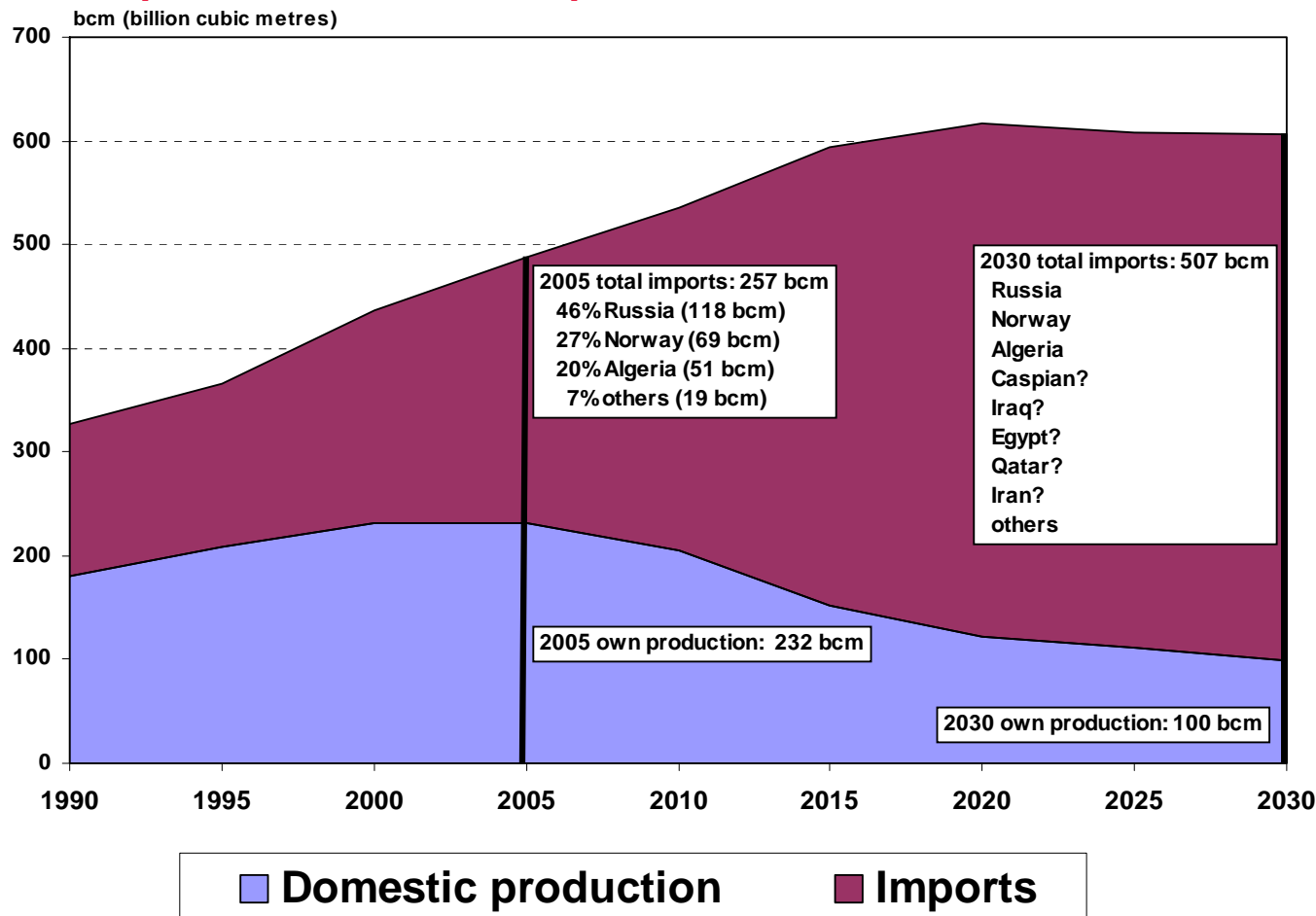
0 225 450 900 Kilometers

Scale 1:21 500,000 for A3 printing Projection: World Mercator
 Source: The Petroleum Economist Ltd (World Energy Atlas) & BBC news website

Disclaimer: This map does not reflect the official opinion of the European Commission or other European Community institutions. Neither the European Commission nor any person or company acting on the behalf of the European Commission is responsible for the use that may be made of the information contained in this map.

1.1 Context: GAS: EU-27 gas demand

EU production halves, imports double to 2030. Where will the imports come from?



Proven reserves:

Russia 26%

Iran 15%

Qatar 14%

Central Asia+Caspian 5%*

Saudi Arabia 4%

UAE 3.5%

USA 3%

Nigeria 3%

Algeria 2.5%

Venezuela 2.5%

Others 21%

Note: True Central Asian reserves are unknown – still using old information

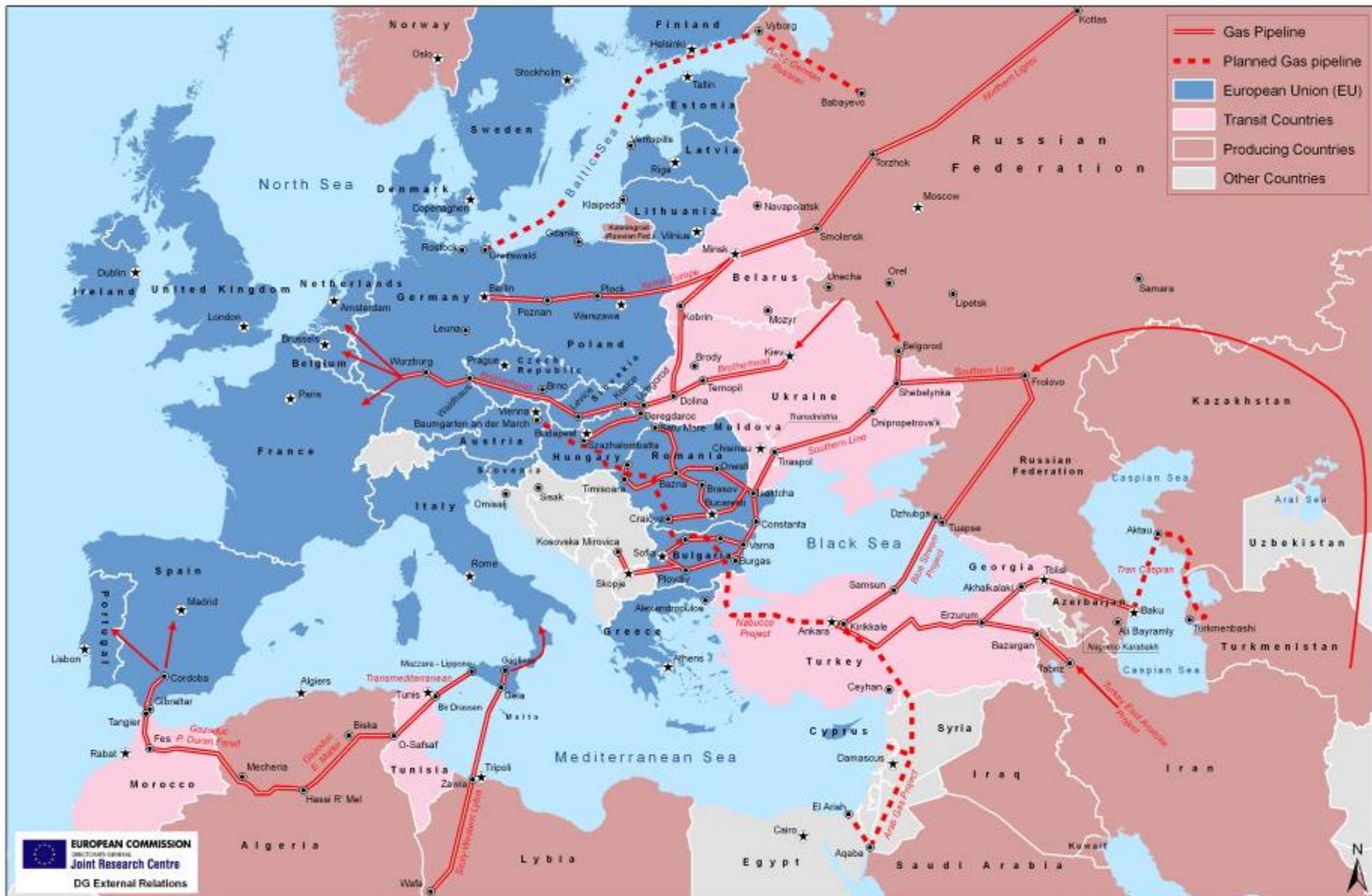
Challenges

Can Russia supply?

Importance of networks.

LNG?

Major Gas pipelines towards the European Union (EU)




EUROPEAN COMMISSION
 Joint Research Centre
 DG External Relations

MapID: 1485
 Production Date: 14 January 2006

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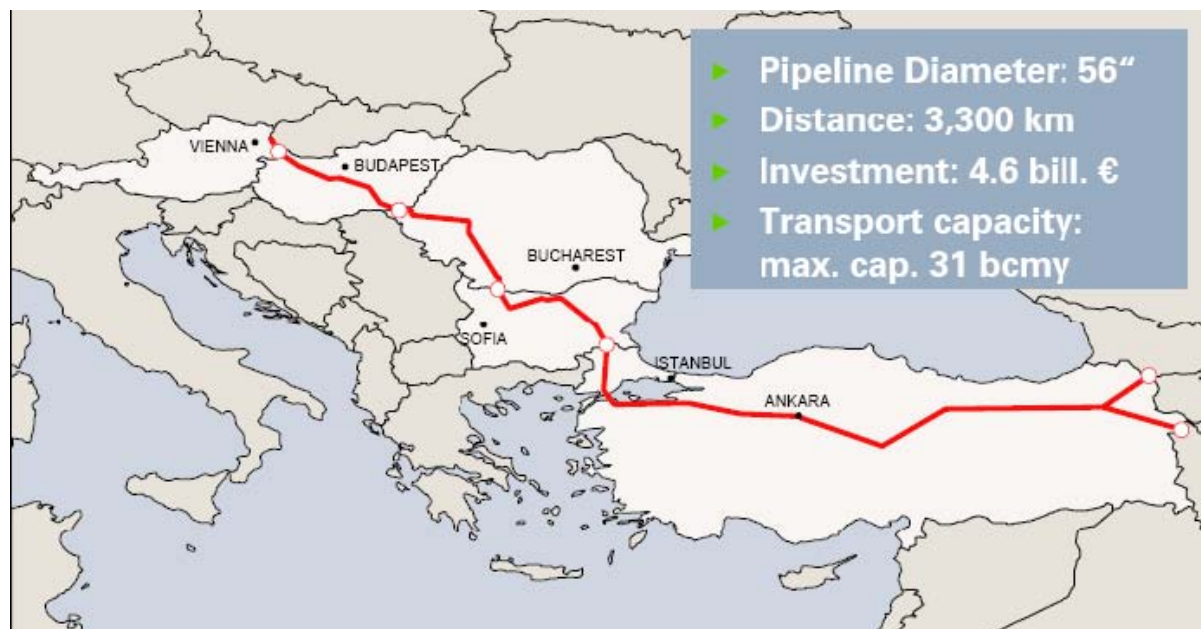
Scale 1:21,500,000 for A3 printing Projection: World Mercator
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1.1 Context: GAS: Nabucco pipeline

The Nabucco pipeline will be connected with the Tabriz (Iran) - Erzurum pipeline, and with the South Caucasus Pipeline, connecting the Nabucco Pipeline with the planned Trans-Caspian Gas Pipeline.

Once completed, it will allow transportation of natural gas from producers in the Middle East and Caspian region such as Iran, Azerbaijan and Turkmenistan, to Western Europe and to the countries along its path.

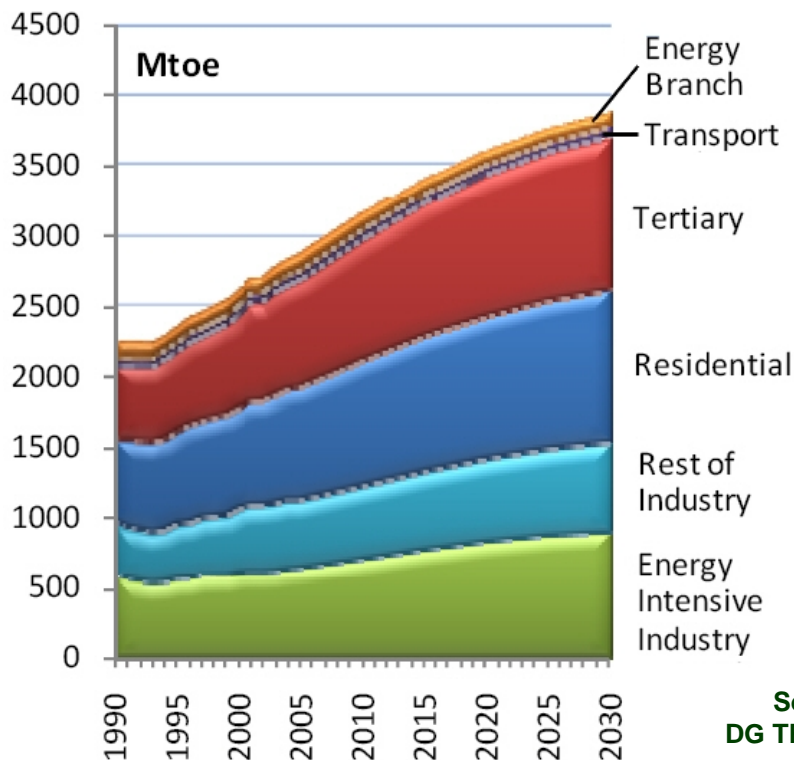


Source: MVV Consulting, 2007

With construction due to start in 2008-09, total transport capacity should reach 31 Bcm/y with 16 Bcm/y arriving in Austria by 2020.

1.1 Context: ELECTRICITY: EU-27 demand

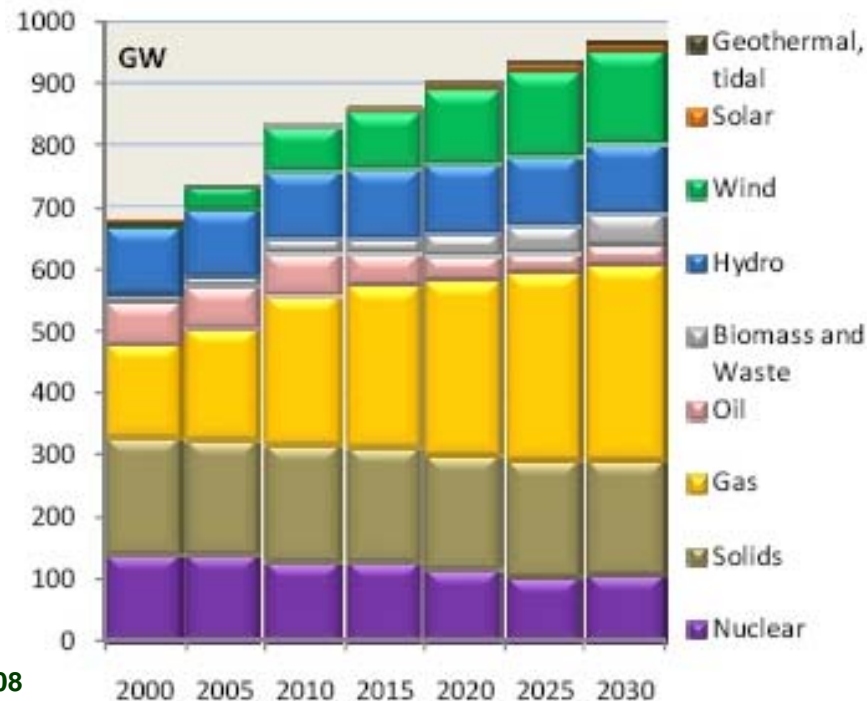
Electricity Consumption by Sector



Source:
DG TREN, 2008

Electricity represents 23% of total final energy demand in 2030, compared to 17% in 1990 and 20% in 2005.

**Power Generation Capacity (net)
by Type of Main Fuel Used**

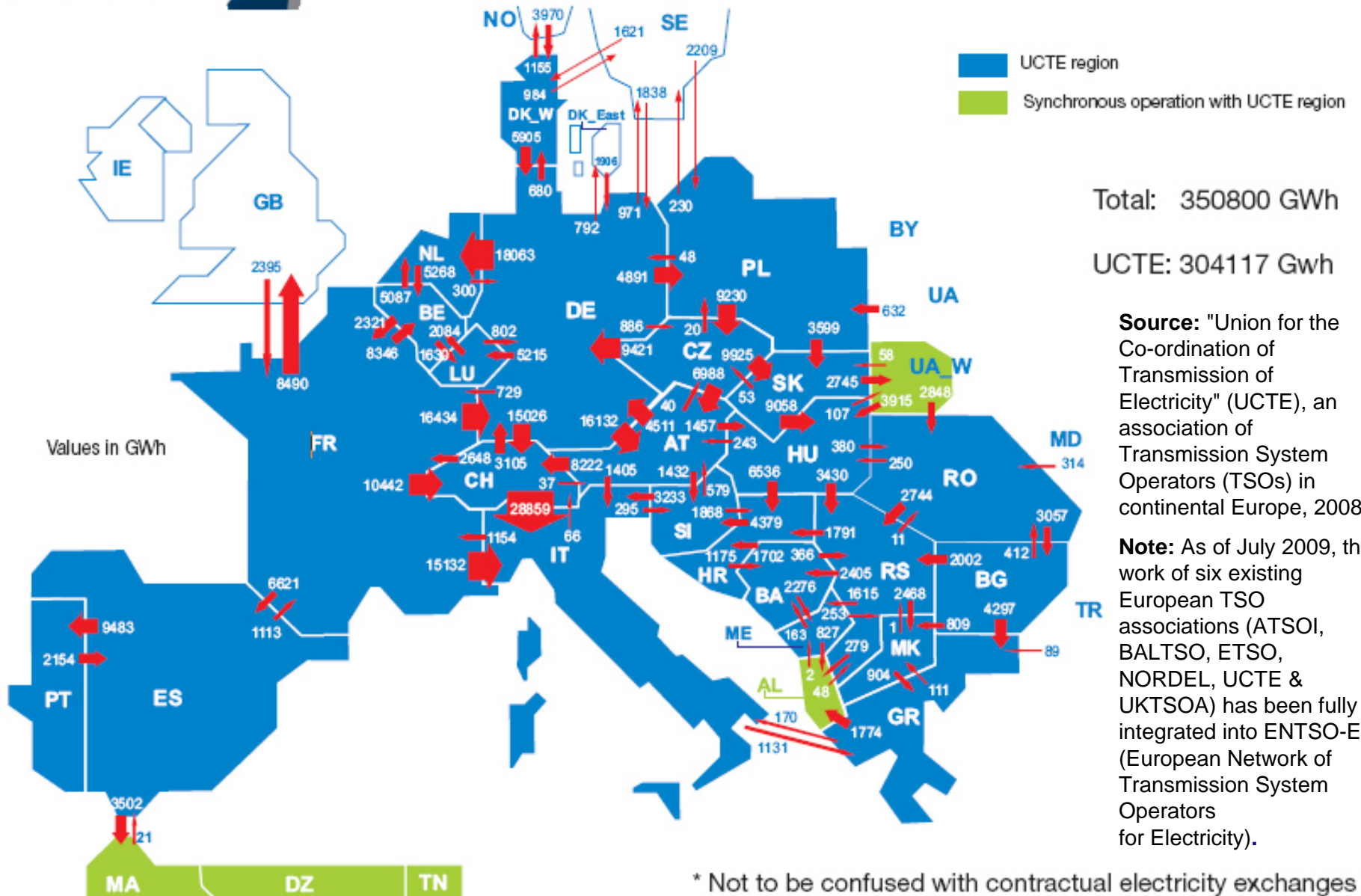


Total net power capacity is projected to increase by 31% between 2005 and 2030 in order to meet power load.

UCTE

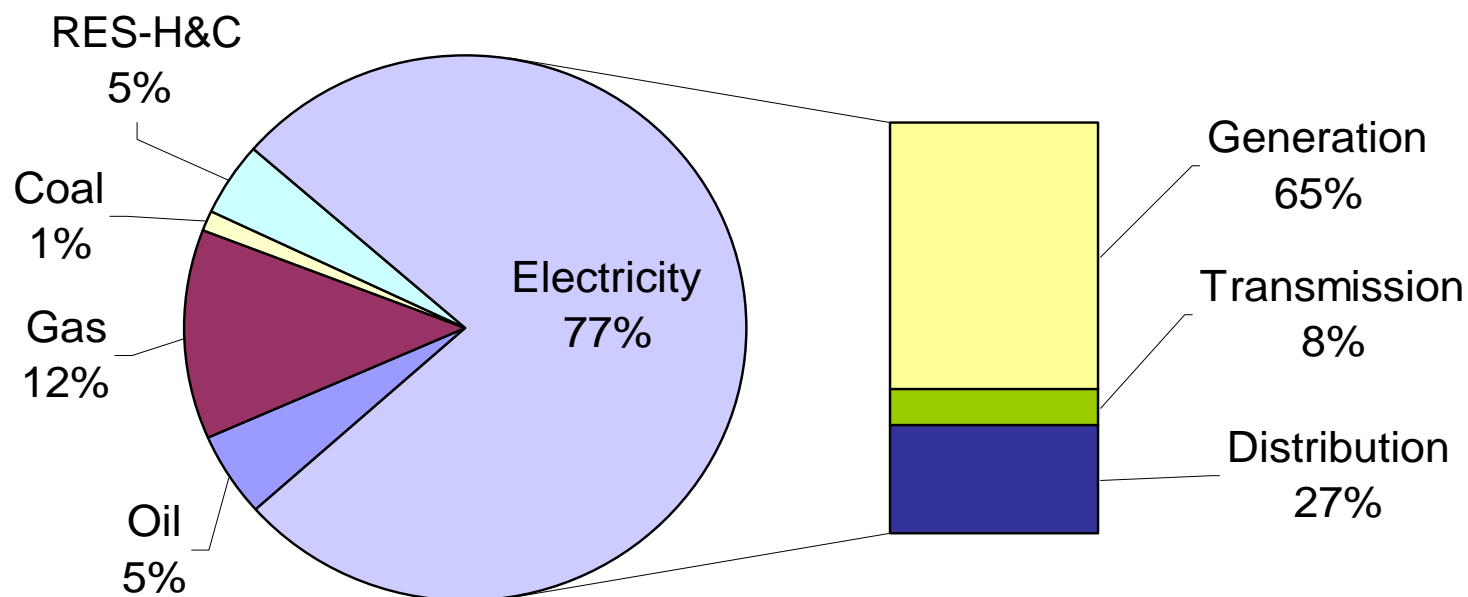


Physical energy flows 2007 *



1.1 Context: The need for investments

EU-27 INVESTMENT NEEDS up to 2030: €1.79 trillion



Source: DG TREN/EUROSTAT

1. Energy Integration in the EU

1.1 Context

1.2 **The three challenges**

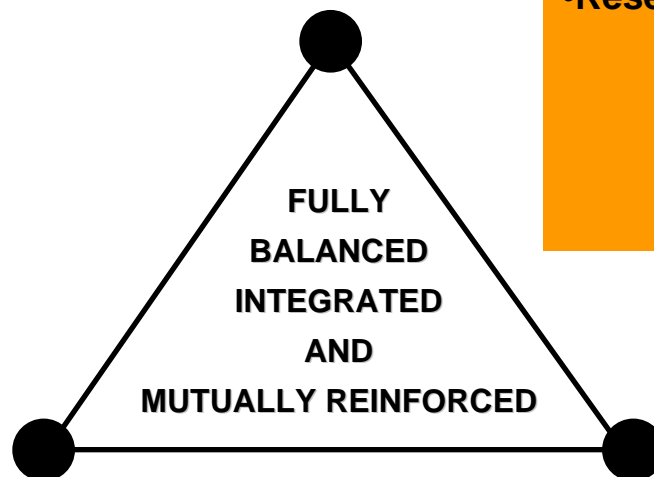
1.3 The EU response

1.4 External energy policy aspects

1.5 EU energy relations with Asia

Competitiveness

- **Internal Market**
- **Interconnections** (Trans-European networks)
- **European electricity and gas networks**
- **Research and innovation**
 - Clean coal
 - Carbon sequestration
 - Alternative fuels
 - Energy efficiency
 - Nuclear



Sustainable Development

- Renewable energy
- Energy efficiency
- Nuclear
- Research and innovation
- Emission trading

Security of supply

- International Dialogue
- European stock management (oil/gas)
- Refining capacity and energy storage
- Diversification

Source: DG TREN

1. Energy Integration in the EU

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1.3 The EU response: Acting together

- 1) Fully realising the Internal market for electricity and gas, and improving interconnections
- 2) Making EU solidarity a daily reality
- 3) Strong measures to improve energy efficiency
- 4) Longer term and binding targets for renewables
- 5) A strategic approach to energy technology, with a priority for low carbon technologies
- 6) A clear perspective on nuclear
- 7) A common external energy policy and a common voice in negotiations with partners

1.3 The EU response: An integrated EU energy market

Policy Actions for enhancing the physical integration of EU Energy Infrastructure with:

- Continuous identification of missing infrastructure;
- European coordinators intervene for 4 priority projects:
 - Power-Link Germany, Poland, Lithuania,
 - Connections to off-shore wind power Northern Europe,
 - Electricity interconnections France-Spain,
 - Nabucco pipeline;
- Trans-European Energy Networks (TEN-E) projects of “European interest” (PEI). A time span of five years for planning and approval procedures should be the maximum;
- Increased funding of Trans-European Energy Networks.

1.3 The EU response: An integrated EU energy market

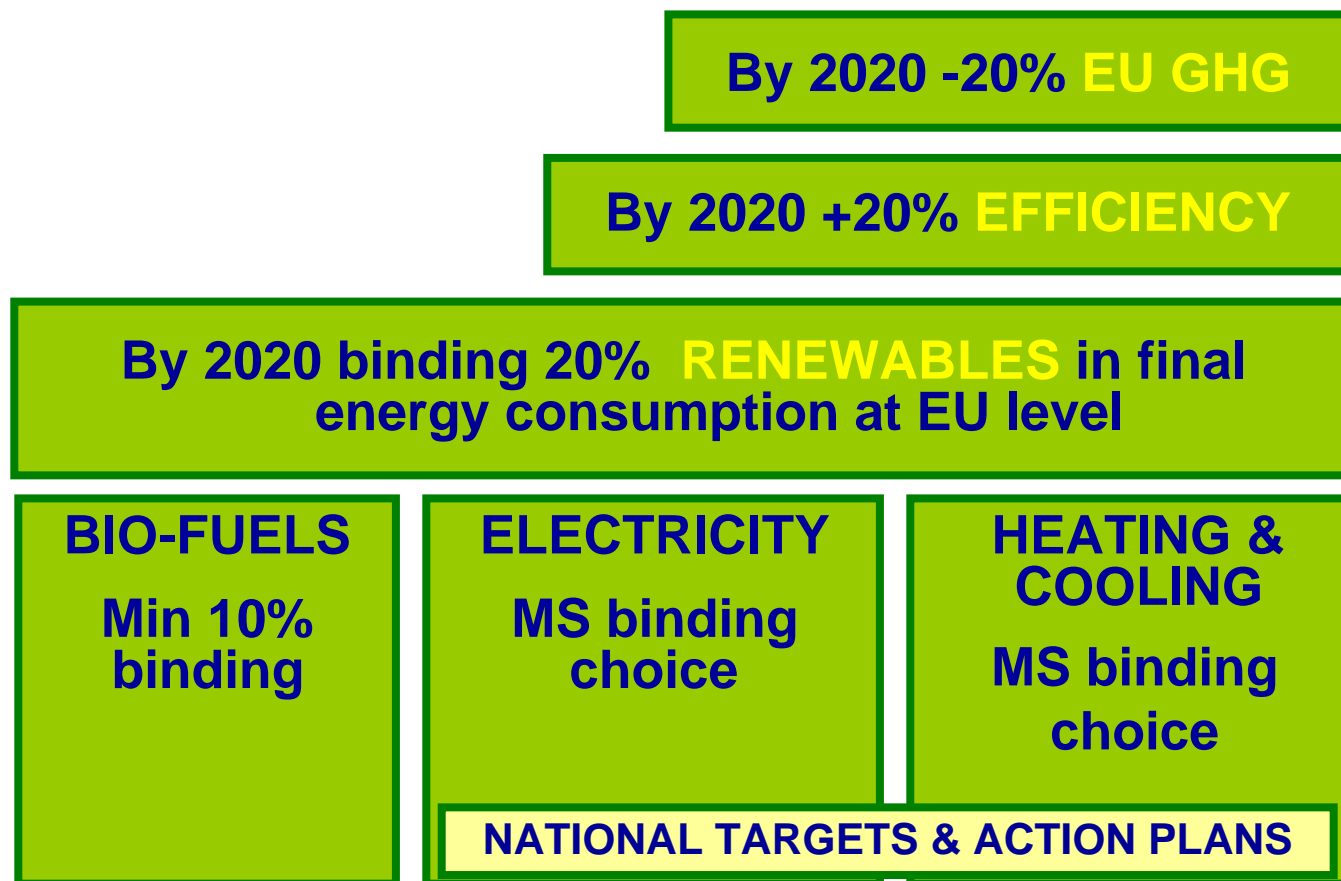
Policy Actions for further integrating the EU market:

- Ensuring the full implementation of the EU's legislation in the energy sector;
- Non-discriminatory access to networks through unbundling;
- Enhancing the role of national regulators and reinforcing co-ordination at an EU level;
- Interconnection: more co-ordination between the Transmission System Operators (TSOs).

1.3 The EU response: Consultation and solidarity

- **A fully functioning EU-wide internal energy market is the best guarantee of supply security.**
- **EU Network of Energy Security Correspondents**
- **EU Gas Coordination Group**
- **EU Oil Supply Group**
- **Communication foreseen on security of supply (strategic stocks, effective mechanisms for energy crisis management)**

1.3 The EU response: Energy Efficiency & Renewables



1.3 The EU response: Technology co-operation

STRATEGIC ENERGY TECHNOLOGY PLAN

Technology for a low carbon future

- **To focus, strengthen and give coherence to the overall energy technology efforts across the EU**
- **Identification of 6 priority industrial initiatives:**
 - **Sustainable coal and gas, particularly carbon dioxide capture and storage;**
 - **Smart electricity grid, including storage;**
 - **Second generation biofuels: use of catalysts vs. fermentation (bacteria);**
 - **Photovoltaic – large scale demonstration;**
 - **Large-scale offshore-wind;**
 - **Generation IV fission power, fusion energy.**

1.3 The EU response: Future of Nuclear

Nuclear Energy represents at present:

- Around 1/3 of the electricity and 15% of the EU energy mix
- CO₂-free source with importance in low emission scenarios
- Concerns on nuclear waste and decommissioning

Policy Actions:

- Sustainable Nuclear Energy Technology Platform (SNE-TP) to overcome fragmentation and to better coordinate research;
- High Level Group (HLG) mandated to seek consensus on further improving nuclear safety and safe waste management at a European level;
- European Nuclear Energy Forum, which aims for the first time at an inclusive and wide-ranging stakeholder discussion on the opportunities and risks of using nuclear energy in a low carbon energy mix.

1. Energy Integration in the EU

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1.4 External energy policy: Speaking with one voice

What is the objective?

- To ensure a reliable, competitive and sustainable flow of energy to the EU.

What are the possible external risks?

- Risk of external geopolitical or commercial disputes affecting energy flows;
- Exposure of crucial external energy infrastructure to disruptions caused by a variety of reasons, including lack of effective maintenance or investment, adverse climatic conditions or a terrorist threat;
- Danger of external suppliers adopting anti-competitive practices on, or with respect to, the EU's internal energy market;
- Unforeseen events, be they political, economic or environmental.

1.4 External energy policy: Objectives

- Diversification of energy imports by fuel, by source and by transportation route,
 - Promoting the development of production and export capacities in producer countries in a safe and secure environment,
 - Promoting the upgrade of existing and the development of new energy transportation infrastructures by producer and transit countries,
 - Improvement of the investment conditions in third countries,
 - Improvement of the conditions for energy trade, including non-discriminatory transit and third party access to the export pipeline infrastructures,
 - Promoting the highest levels of physical and environmental safety and security of energy infrastructures and the highest standards of nuclear safety,
 - Encouragement of energy efficiency and energy savings in third countries, as well as the promotion of the relevant Kyoto Protocol mechanisms.
-

1.4 External energy policy: Actions

Russia : Energy Dialogue since October 2000.

Ukraine: MoU on energy cooperation signed in December 2005.

Norway: Dialogue since Spring 2002.

Kazakhstan & Azerbaijan: MoU's signed in 2006.

Turkmenistan & Uzbekistan: MoU's under preparation/planned.

Morocco & Jordan: Declarations on energy cooperation.

Algeria & Egypt: MoU's being negotiated.

South-East Europe: Energy Community in place between the EU and the countries of South East Europe*.

US, China, India, Japan, Brazil, ASEAN: Energy dialogues underway.

ASEM: Energy Security Forum – Vietnam 11 April 2008, Ministerial Meeting 18 June 2009, Brussels.

Canada, Australia: Launching of energy cooperation planned.

* Albania, Bosnia & Herzegovina, Bulgaria, Croatia, Republic of Macedonia, Romania, Serbia & Montenegro

1.4 External energy policy: Future prospects

Building EU capacity to speak with one voice and respond effectively to external energy crisis:

- A second Strategic Energy Review was adopted by the Commission in November 2008 as a basis for an action plan for the period after 2010.
- A five-points EU Energy Security and Solidarity Action Plan was proposed:
 - Infrastructure needs and diversification of energy supplies;
 - External energy relations;
 - Oil and Gas stocks and crisis response mechanisms;
 - Energy efficiency;
 - Making the best use of EU's indigenous energy resources.

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- 1.5 **EU energy relations with Asia**

Bilateral dialogues

- **Japan - Dialogue between DG TREN and Agency for Natural Resources and Energy (ANRE):**
 - Policy developments, geopolitical developments and impacts on global energy scene;
 - Instrumental for cooperation on the International Partnership for Energy Efficiency Cooperation.
- **China - High Level Dialogue on Transport and Energy with the National Development and Reform Commission (NDRC) and Dialogue with the Ministry of Sciences and Technology (MOST):**
 - Policy developments, energy efficiency, carbon capture and storage, research cooperation.

Bilateral dialogues (con't)

- **India - EU-India Energy Panel since 2005:**
 - **Policy developments, development of clean coal technologies, increasing energy efficiency and savings, promoting environment friendly energies as well as assisting India in energy market reforms.**

Regional dialogues

- **New EU-ASEAN Senior Officials Dialogue on Energy Cooperation**
 - **First meeting – August 2007**
 - **Initial areas of focus – biofuels, energy efficiency and investment climate**
 - **Building on previous cooperation and instruments**
 - **Unique region-to-region cooperation**

1.5 Energy under ASEM framework

- **Energy and climate change identified among the major topics for future dialogue at ASEM 6**
- **3rd ASEM Environment Ministers' Meeting, 8th ASEM Foreign Ministers' Meeting**, among others
- **1st Ministerial Conference on Energy Security** – Brussels, 18th June 2009

Topics involved included:

- **energy security, including the transparency and effective functioning of global energy markets**
- **opportunities and methods of promoting renewable energy energy efficiency and energy saving**
- **energy technology cooperation**
- **trade and investment related issues**
- **climate change and energy security**

2. ASEM Ministerial Conference on Energy Security

2.1 Conference Agenda

2.2 Conference Materials

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2.2 Conference Materials

First ASEM Ministerial Conference on Energy Security

Salle Alcide de Gasperi, Charlemagne Building, Brussels



Thursday 18th June 2009

09:15-10:30

Welcome/opening addresses:-

Moderator: Mr. James Moran, Director Asia, DG External Relations, European Commission

- **Commissioner Benita Ferrero-Waldner**, European Commissioner for External Relations and European Neighbourhood Policy (10 mins)
- **Mr. Jitin Prasada**, Minister of State Petroleum and Natural Gas, India – ASEM Coordinator (10 mins)
- **Mr. Martin Tlapa**, Deputy Minister of Industry and Trade of the Czech Republic (10 mins)
- **Mr. Yasuo Tanabe**, Deputy Director General, Economic Affairs Bureau of Ministry of Foreign Affairs, Japan (10 mins)

10:50 - 12:00

Session I: Energy policies – what needs to be done?

Introduction: Ms. Maud Olofsson, Deputy Prime Minister and Minister of Enterprise, Sweden – ASEM Coordinator from 1/7/2009 (10 mins)

Keynote speeches

- **Commissioner Andris Piebalgs**, European Commissioner for Energy (10 mins)
- **Sub. Lt. Prapas Limpabandhu**, Vice Minister of Energy, Thailand (10 mins)

10:50 - 12:00
continued

Discussants

- **Mr. Xu Yongsheng**, Director General of the Department of Electric Power, China (10 mins)
- **Ms. Stefania Gabriella Anastasia Craxi**, Secretary of State, Ministry of Foreign Affairs, Italy (10 minutes)

Discussion

12:00-13:00

Session II: Tackling energy security through sustainable energy choices

Moderator: Ms. Anne Houtman, Director, DG Energy and Transport, European Commission.

Keynote speeches

- **Mr. Sun Qin**, Vice Administrator China National Energy Administration (10 mins)
- **Mr. Hans Jorgen Koch**, Deputy State Secretary, Energy Agency of Denmark (10 mins)

Discussants

- **Dr. Irwan Bahar**, Dept of Energy and Mineral Resources, Indonesia (5 mins)
- **Mr. Paul Magnette**, Minister for Climate and Energy, Belgium (5 mins)
- **Mr. George Pullicino**, Minister for Resources and Rural Affairs, Malta (5 mins)
- **Mr. Vytautas Naudužas**, Ambassador-at-Large, Lithuania (5 mins)

Discussion

13:00 - 14:30

Head of Delegation Luncheon hosted by **Commissioner Andris Piebalgs**, European Commissioner for Energy, with **Mr. Martin Tlapa**, Deputy Minister of Industry and Trade of the Czech Republic . Speech by: **Mr. Junggwan Kim**, Deputy Minister for Energy and Resources, Republic of Korea

14:30- 15:30

Session III: Tackling energy security through improving global energy markets and trade

Introduction/Moderator: Mr Jan-Meinte Postma, Netherlands Energy Envoy

Keynote speeches

- **Mr. Ignacio Garcia Bercero** , Director, DG for Trade, European Commission (10 mins)

Discussants

- **H.E. Pehin Dato Haji Mohammad**, Minister of Energy, Brunei Darussalam (5 mins)
- **Mr. Tim Abraham**, Director of European Energy Policy in the Department of Energy and Climate Change, UK (5 mins)

Discussion

15:30-16:00

Concluding remarks:-

Mr. Thomas Roe, ASEM Counsellor, DG for External Affairs, European Commission - ASEM Coordinator

Mr. Chea Sienghong, Secretary of State, Ministry of Industry, Mines and Energy, Cambodia - ASEM Coordinator

- **Session I: Energy policies – what needs to be done?**

With global energy consumption and dependency on oil and gas imports growing and supplies becoming more constrained, the risk of supply failure is rising. Securing energy supplies are therefore a key issue of mutual concern for ASEM countries.

Enhancing energy security requires ambitious and comprehensive energy policies that include not only a diversification of energy sources but also diversification of suppliers, markets and transport routes. Emergency mechanisms, including stocks, and integrated energy and electricity networks are also part of the answer.

On all of these issues, the EU and Asian members of ASEM have much experience to share and possibilities for co-operation so as to increase global energy stability and security.

- **Session II: Tackling energy security through sustainable energy choices**

To enhance their energy security, ASEM countries need to strongly promote a diversification of energy sources, in particular encouraging the use of more sustainable and cleaner energy resources as well as ensuring that energy is used more efficiently.

Policies, regulation and support schemes are tools to be shared so as to maximize each others' efforts in enhancing the energy mix and encouraging energy savings.

- **Session III: Tackling energy security through improving global energy markets and trade**

Trade can contribute to improving our energy security. Trade policy should ensure, as far as fossil fuels are concerned, that markets remain open throughout the energy supply chain. Trade should also provide for a transparent and non-discriminatory framework for the transit and transportation of energy. Furthermore, trade could help the diffusion of alternative energy sources as open global markets would contribute to the affordability and expansion of those technologies.

Facilitating trade in energy efficient goods and services, and promoting an investment-friendly environment, can help reduce energy consumption by improving overall energy efficiency.

2. ASEM Ministerial Conference on Energy Security

2.1 Conference Agenda

2.2 Conference Materials

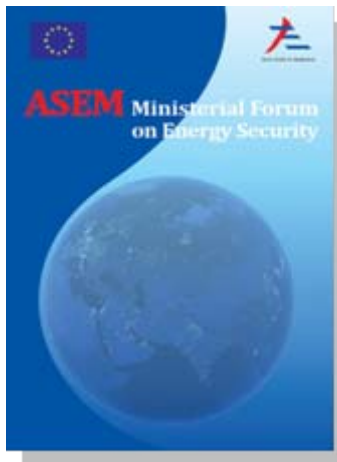
- The European Commission funded (through the ASEM Dialogue Facility) studies on **Energy Trends** in Asia and Europe and also the **Energy Profiles** of each of the 43 ASEM member countries.
- CEERD was in charge of preparing these conference materials together with a leaflet **Major Fossil Fuels - Trade flows and bottlenecks** and a brochure highlighting **ASEM Energy Co-operation potentials**



The conference materials are available for download:

http://ec.europa.eu/external_relations/energy/events/asem_energy_2009/index_en.htm

• Energy Trends in Asia and Europe



EUROPEAN UNION

II. European Union

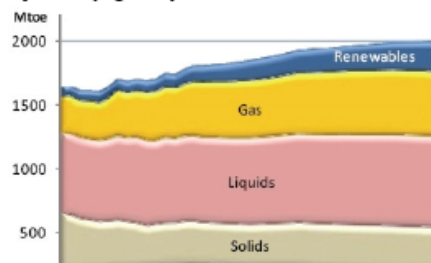
1. Primary Energy Demand

Total EU-27 energy requirements continue to increase up to 2030. In 2030 primary energy consumption is 11% higher than in 2005. The energy growth rates become smaller over time with consumption almost stabilising post 2020 reflecting lower economic growth and stagnating population in the last decade of the projection period.

Energy intensity⁹ improvements (1.7 % per year up to 2030) are driven by structural change towards services and lighter industries as well as by efficiency improvements in all sectors.

o by Fuels

Most of the primary energy consumption increase of around 200 Mtoe between 2005 and 2030 will be met by renewables and natural gas, which are the only energy sources that increase their market shares during the period. (Figure 5)



ASIA

III. Asia

1. Primary Energy Demand

Developing Asia is projected to contribute around 54% of the increase in global primary energy consumption between 2005 and 2030. The economies and populations in the Region grow much faster than those of the industrialised countries, pushing up their energy use. China and India alone account for 45% of the increase in energy use (Figure 17).

Their share of global demand expands for all primary energy sources except for non-hydro renewables.

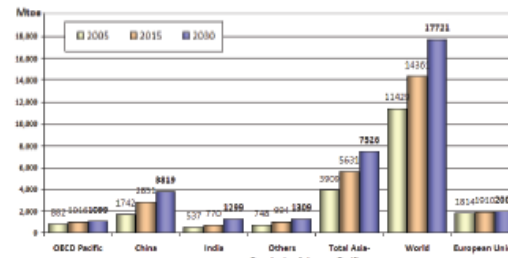


Figure 17 - Total Primary Energy Demand (Reference Scenario)
Source: IEA, WEO 2007

o Oil Products

Strong expansion of liquids use is projected for developing Asia, fueled by robust economic growth, burgeoning industrial activity, and

The fastest growth in oil consumption is projected for India at 3.4 % per year in average from 2005 to 2030.

o Natural Gas

The fastest growth in natural gas consumption is projected for developing Asia, which accounted for only 9.1% of the world total in 2005 but is projected to account for almost 23% of the increase in total natural gas demand from 2005 to 2030 (Figure 19).

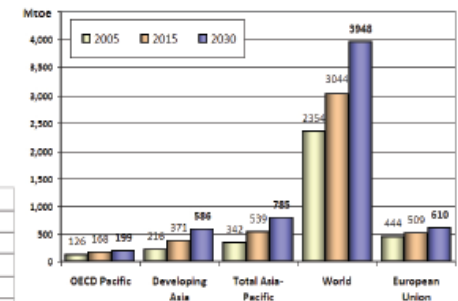


Figure 19 - Total Primary Gas Demand (Reference Scenario)
Source: IEA, WEO 2007

In both China and India, natural gas currently is a minor fuel in the overall primary energy mix. However, both countries are rapidly expanding infrastructure to serve demand. The fastest growth in gas demand is projected for China at 6.4 % per year on average from 2005 to 2030.

o Coal

In developing Asia, coal demand is projected to grow by an average of 3.4% per year

- Energy Profiles



	Asia	Europe
	Brunei	Austria
		Luxembourg
		Singapore

Key economic and energy data

Economic indicators		1990	2005	2006	2007
Population	Millions	3,0	4,3	4,4	4,5
GDP growth rate	%/year	9,2	6,4	8,2	7,7
GDP/capita	US \$	12091	26895	30379	34664
Energy security indicators					
Energy independence rate	%	n.a.	n.a.	n.a.	n.a.
Share of oil imported(+) exported(-)	%	100	100	100	100
Energy efficiency indicators					
Total consumption/GDP *	1990=100	100	90	87,1	85,7
Transport and distribution rate of losses	%	5,8	5,0	4,9	5,0
Efficiency of thermal power plants	%	30,6	40,6	40,6	40,6
CO2 emissions indicators					
CO2 emissions/GDP *	kg/\$95	0,84	0,53	0,53	0,53
CO2 emissions/capita	tCO2/cap.	11,3	12,4	13,0	13,7

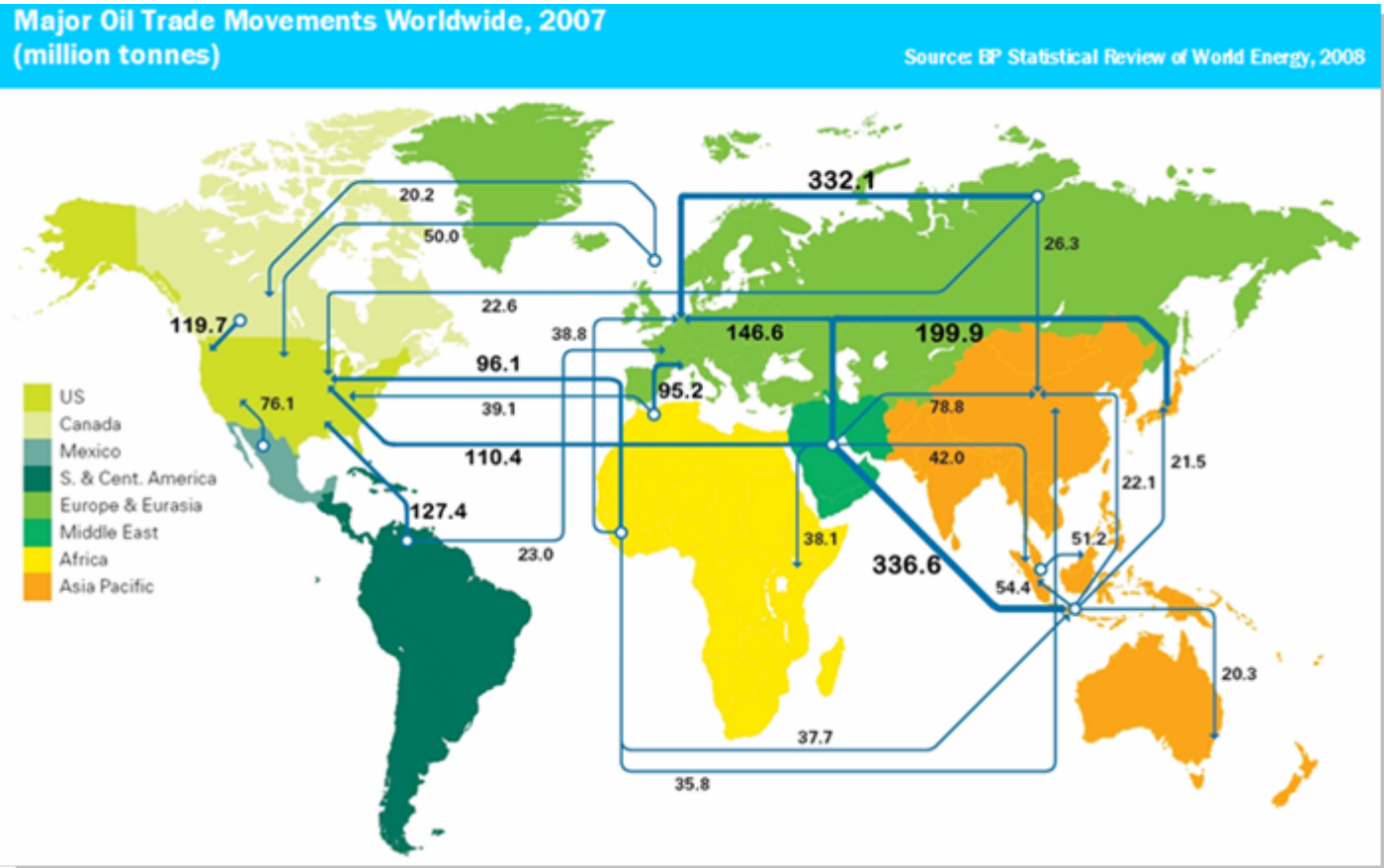
* at purchasing power parity
Source: Enerdata from IEA, Eurostat, Cedigaz, World bank, IMF, APERC, ADB and national data.

Energy supply

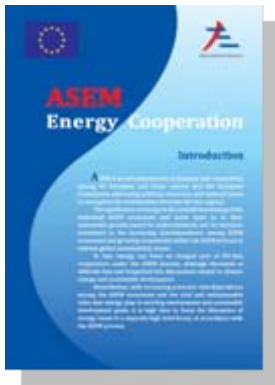
Because of its strategic location on the Straits of Malacca, Singapore serves as important shipping centre and is host to one of the largest petroleum refining industries in South East Asia and one of the busiest marine cargo ports in the world. Singapore, however, relies almost entirely on imports to meet its energy requirements. In 2005 Singapore's total primary energy supply was 27,314 ktoe. Oil accounted for 81 % of the domestic supply and natural gas the remaining 19 %. Coal supply was almost zero. Approximately half of Singapore oil import was re-exported as refinery product, while the rest was retained for domestic consumption.

Three main pipelines supply the Singaporean natural gas network: 150 million cubic feet per day (mmcfpd)

- Major Fossil Fuels - Trade flows and bottlenecks



- **ASEM Energy Cooperation**



- **Enhancing energy security**
- **Increasing cooperation on climate change, energy, and sustainable development**
- **Further increasing energy efficiency and conservation**
- **Accelerating growth of new and renewable energy sources**
- **Promoting actively nuclear safety and security**
- **The Way Forward**

3. ASEM Energy Cooperation

- 3.1 **Enhancing energy security**
- 3.2 Increasing cooperation on climate change, energy, and sustainable development
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- 3.6 The Way Forward

3.1 Enhancing energy security

- **EU's dependence on imported energy**, including oil, gas, and coal, measured by the ratio of net energy imports over gross inland consumption (incl. bunkers) is projected to rise to 66.6% by 2030 compared to 53% in 2005. This is due to both continuous growth in energy demand and decline in EU indigenous fuel production;
- In Asia, energy security has also been a growing concern even if the region holds significant energy reserves. For example, **oil import dependency of the whole Southeast Asian region**, including net oil exporting countries, is projected to balloon from 10% in 2002 to nearly 70% in 2025;

ASEM can facilitate the sharing of national experiences and discussions on how regional energy security goals are being or can be translated into strategies and action plans at the national levels. EU can share with its ASEM Asian partners how the region's ambitious energy efficiency and renewable energy targets are being translated into national targets and action plans. ASEM, therefore, facilitates and opens not only opportunities for knowledge exchanges but as well as technology transfers.

3. ASEM Energy Cooperation

- 3.1 Enhancing energy security
- 3.2 **Increasing cooperation on climate change, energy, and sustainable development**
- 3.3 Further increasing energy efficiency and conservation
- 3.4 Accelerating growth of new and renewable energy sources
- 3.5 Promoting actively nuclear safety and security
- 3.6 The Way Forward

3.2 Increasing cooperation on climate change, energy, and sustainable development

- Following up on ASEM 6, the **7th ASEM Summit Declaration on Sustainable Development (Beijing, 24-25 October 2008)** highlighted and again stressed the strong links between climate change and energy security on the one hand, and energy security and sustainable development on the other hand;

Through it, ASEM:

- *Calls for diversification, sustainability and security of sources of energy supply;*
- *Calls upon all members to improve energy savings and efficiency, optimize energy consumption structure, develop and utilize renewable and clean energy, including sustainable biofuels while not affecting food security or causing environmental damage and promote transfer, deployment and dissemination of advanced environmentally sound energy technology to developing partners;*
- *Stresses the need to combine energy cooperation with poverty reduction and environmental protection, to help developing countries, especially the LDCs strengthen infrastructure development, reduce poverty and achieve sustainable development by increasing their access to energy;*
- *Stresses that joint efforts should be made by all partners to contribute to the stability, transparency and predictability of oil markets.*

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3.3 Further increasing energy efficiency and conservation

- Increased energy efficiency both in supply and demand, including generation, transportation & transmission, distribution and final supply of energy, could reduce global primary energy demand by 11% in 2030 according to IEA scenarios. Such a substantial decrease could cut the rise in global CO₂ emissions from 57% to 27% between 2005 and 2030;
- Under the IEA's Reference Scenario, developing countries are projected to contribute around 74% of the global increase in overall energy consumption, with China and India together accounting for 45%. Developing countries, therefore, particularly China and India, should continue to be important targets of efforts to increase energy efficiency;

Specifically, ASEM can support exchanging information about measures that could significantly improve energy efficiency on sectoral and cross-sectoral bases. ASEM can also facilitate the expansion of the International Partnership for Energy Efficiency Cooperation (IPEEC) to include all ASEM members.

3. ASEM Energy Cooperation

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3.4 Accelerating growth of new and renewable energy sources

- In absolute terms, energy demand in Asia is projected to double in 30 years and increase its share of global energy demand to 30%. However, **only modest increases in renewables are projected;**
- The EU has embraced a binding target of increasing the level of renewable energy in its overall energy mix from less than 7% in 2007 to **20% by 2020;**
- Although not binding, ASEAN aims to **increase the share of renewable energy in the region's power generation mix to 10%.** Some ASEAN member-countries have already translated this regional target to a national target. APEC currently promotes and facilitates the increased use of new & renewable energy technologies in its Asian and other member-economies mainly through its APEC 21st Century Renewable Energy Development Initiative;

The Asia-Europe Environment Forum has recommended partnerships that could contribute to increasing investments in renewable energy in the two regions. The new high-level energy dialogue in ASEM can retake and explore these recommendations.

3. ASEM Energy Cooperation

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3.5 Promoting actively nuclear safety and security

- Nuclear energy accounts for **one-third of electricity production** and 15% of total energy consumed in the EU, meanwhile in Asia it contributes to **10% of electricity production**, with a sustained growth rate of 3.8% p.a. in 1992-2005, faster than the 2.1% growth of global nuclear electricity production;
- **Nuclear energy raises the issues of safety and security**, including those associated with de-commissioning and wastes disposal, illicit trafficking of CBRN materials, export controls, etc., which are naturally at the centre of international and regional co-operation and partnerships between Europe and Asia;

ASEM can facilitate the promotion of cooperation and partnerships on nuclear energy through the Global Nuclear Energy Partnership and Nuclear Energy Cooperation framework to ensure that the highest standards of safety, security and non-proliferation of nuclear energy are emphasized. The European Commission's Instrument for Nuclear Safety Cooperation also offers possibilities for enhancing co-operation in these areas.

3. ASEM Energy Cooperation

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- 3.6 **The Way Forward**

According to the Joint Statement issued at the term of the Conference, the Ministers agreed that,

- With high level of global energy consumption, in particular of fossil fuels, and the volatility of oil prices in international markets, the sustainability of our energy security and social economic development is increasingly an issue of mutual concern for ASEM partners;
- Enhancing energy security requires ambitious and comprehensive energy policies at international, regional and national levels that include diversification of the sources, routes and types of energy supplies, emergency mechanisms including oil stocks, as well as encouraging the use of safe and sustainable low-carbon technology and of more sustainable and cleaner energy resources, in particular the development of renewable energy sources;

In this context, the establishment of an international renewable energy cooperation, such as the International Renewable Energy Agency (IRENA), are valuable contributions to sustainable development, energy security and diversity as well as to environmental and climate policies. Where nuclear energy is considered an option as part of an energy diversification policy, it is important to ensure safeguards, safety and security in accordance with the relevant conventions of the International Atomic Energy Agency (IAEA) to which ASEM partners are party. Promoting energy efficiency across all the sectors of the economy is also a fundamental part of energy security policies. Making full use of international fora for cooperation and exchange of best practice is therefore vital;

- Comprehensive energy security policies should also include investment promotion in renewable energy, integration of regional markets and the development of adequate transportation infrastructures;

3.6 The Way Forward (3)

- Energy security will also be enhanced through securing competitive, transparent and non discriminatory frameworks throughout the energy supply chain that encourage the necessary investments in exploration, production, transportation and efficient & sustainable use;
- With a view to improving the capacity of developing countries, cooperation is crucial, particularly in promoting the transfer, deployment and dissemination of advanced and environmentally sound energy technologies to developing partners and in exchange of knowhow, including on policies and regulations;
- The European and Asian members of ASEM have much experience to share and possibilities to cooperate so as to increase global energy stability and security. The EC-ASEAN meeting on the implementation of the 2010 Energy Work Plan on 19 June 2009 is one of the first concrete follow-up actions between the two regions.

4. ADB – GMS RETA N° 6440 Project: The GMS Power Market Integration

- 4.1 General Presentation**
- 4.2 Component 1 Objectives**
- 4.3 Component 2 Objectives**

4. ADB – GMS RETA N° 6440 Project: The GMS Power Market Integration

- 4.1 **General Presentation**
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ADB – GMS RETA N° 6440 Project Presentation



ADB/GMS RETA 6440 Facilitating Regional Power Trading and Environmentally Sustainable Development of Electricity Infrastructure in the Greater Mekong Subregion

“RETA No 6440 General Presentation

Prepared by : Michel CAUBET, Project Team Leader, Component 1
 Thierry LEFEVRE, Deputy Team Leader, Component 2



A strong Association of well-known International Consulting Firms was created under the Leadership of RTE International with:

- EDF-CIH, Hydro Engineering Centre – FRANCE;
- Nord Pool Consulting AS (NPC) – NORWAY;
- Power Planning Associates (PPA) – UK;
- Franklin Paris, Legal Firm – FRANCE;
- Centre for Energy Environment Resources Development (CEERD) – THAILAND;

Partnership was established with National Consulting Firms and Independent Consultants in five GMS Countries.

Two Components:

- Component 1: *Facilitating Regional Power Trading*, taken in charge by the Project Team Leader (RTE International)
 - Component 2: *Environmentally Sustainable Development of Infrastructures*, taken in charge by the Deputy Team Leader (CEERD)
-

COMPONENT 1 is composed of 5 Modules:

- Module 1: Regional Power Interconnection Master Plan (EDF-CIH)
- Module 2: Methodology for Assessment of Benefits (NPC)
- Module 3: Power Transmission Studies (RTE & PPA)
- Module 4: GMS Regulatory Framework (RTE, NPC, PPA, Franklin)
- Module 5: Updated Structure of the Existing Regional Database (RTE)

COMPONENT 2 is composed of:

- Strategic Environmental Assessment (SEA) – (CEERD)
- Environmental Impact Assessment (IEA) – (CEERD)

A Project Office was set up in Bangkok, under the management of CEERD

A Web Site for the Project: www.gms-powertrade.net

was launched on January 2009, to help team members sharing reports and documents with user friendly upload/download tools, and later on to inform the General public on the developments & outputs of the Project.

- 4.1 General Presentation
- 4.2 **Component 1 Objectives**
- 4.3 Component 2 Objectives

4.2 Component 1 Objectives

In continuation of the activities undertaken under RETA N° 6304 Project, it implies:

- Planning the development of resources for the national power systems, in a sustainable development perspective, as part of the development of resources for the regional electric power system, taking into account the regional energy system and regional energy policy and strategy;
 - Setting up legal frameworks, rules, protocols, coordination and regional mechanisms and bodies responsible for:
 - ✓ the reliable, secure and cost-effective operation of the regional interconnected network;
 - ✓ the introduction, if deemed useful, of a regional electricity power market (bulk power market, free access to the transmission network);
 - ✓ safeguards and regional ambient standards.
 - Implementing mechanisms and structure for the development and the operation of regional electric power projects;
 - Proposing the various steps necessary to Set up a regional organization that will be responsible for the implementation of these actions, and for the operation of the regional interconnected power system.
-

- 4.1 General Presentation
- 4.2 Component 1 Objectives
- 4.3 **Component 2 Objectives**

4.3 Component 2 Objectives

- To assess the capacity of the environmental authorities and power companies in GMS countries for environmental planning and preparation of environmental management documents.
- To provide training to environment ministries and power companies in environmental planning and management.
- To provide capacity development in establishing regular monitoring mechanisms within the power utilities to standardize environmental management plans (EMP) practices.
- To build capacity through proposed pilot SEAs and/or CIAs and implementation of EMPs for power projects, in cooperation with the GMS Biodiversity Corridors Initiative (EOC) supported by ADB.
- To provide practical training in preparation and implementation of EMPs, specifically in monitoring of environmental safeguards and regional ambient standards.

THANK YOU FOR YOUR ATTENTION

- **ASEM Seminar on Energy Security and Climate Change** is planned to be held in Singapore in 2010,
- **ASEM on the Internet:**
http://ec.europa.eu/external_relations/asem/index_en.htm
www.aseminfoboard.org/
www.asem7.cn
- **Asia-Europe Foundation (ASEF):** www.asef.org/
The Singapore based foundation funded by ASEM partners promotes understanding and collaboration between the peoples of Asia and Europe through cultural, intellectual and people-to-people exchanges. ASEF's outreach to civil society and the wider public and the [ASEM InfoBoard](#) managed by ASEF provide transparency on the ASEM programme.