INTERNATIONAL GAS PIPELINES ALONG WITH TURKEY’S ROLE.

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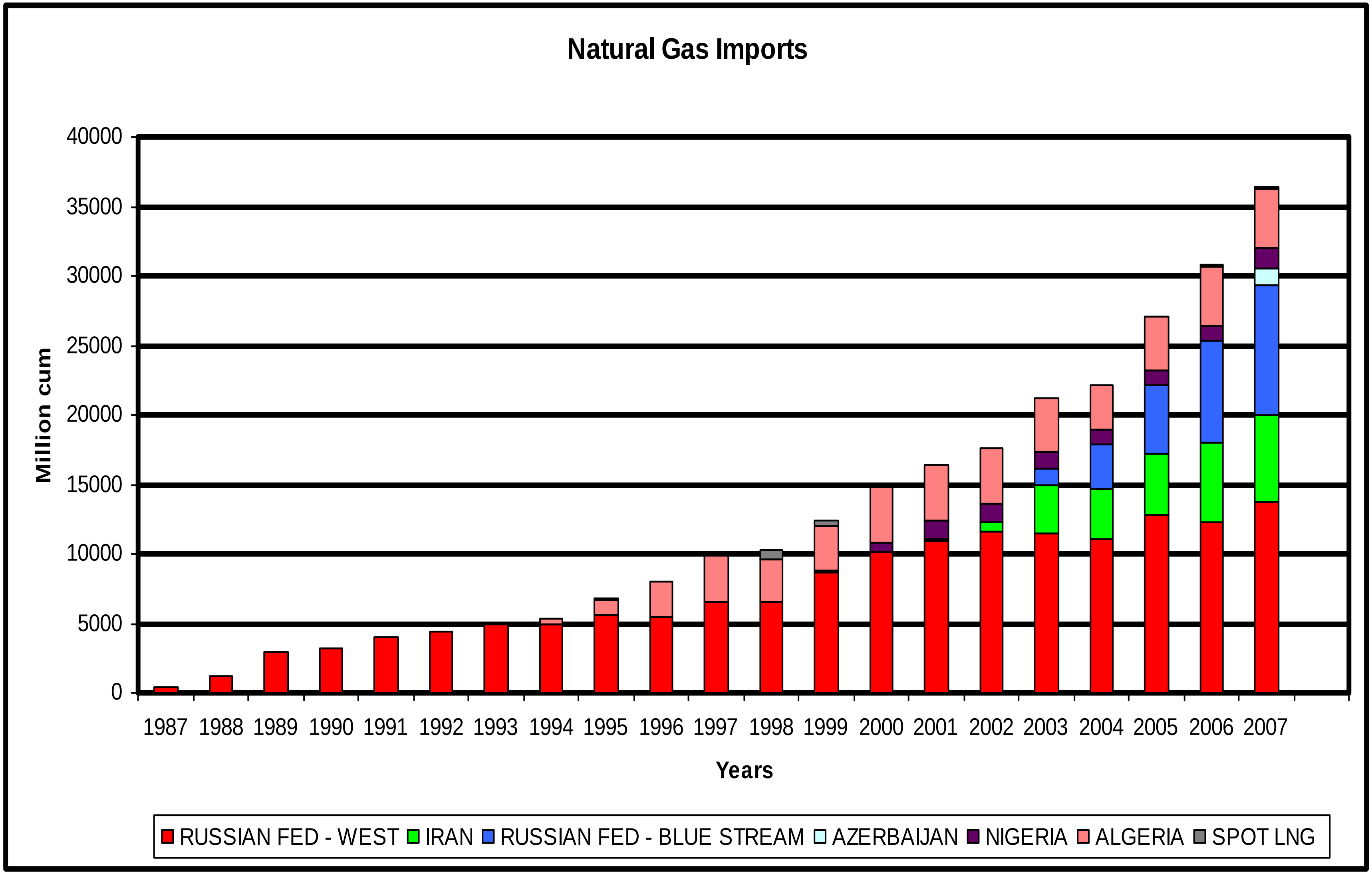
Natural Gas and Oil Pipelines

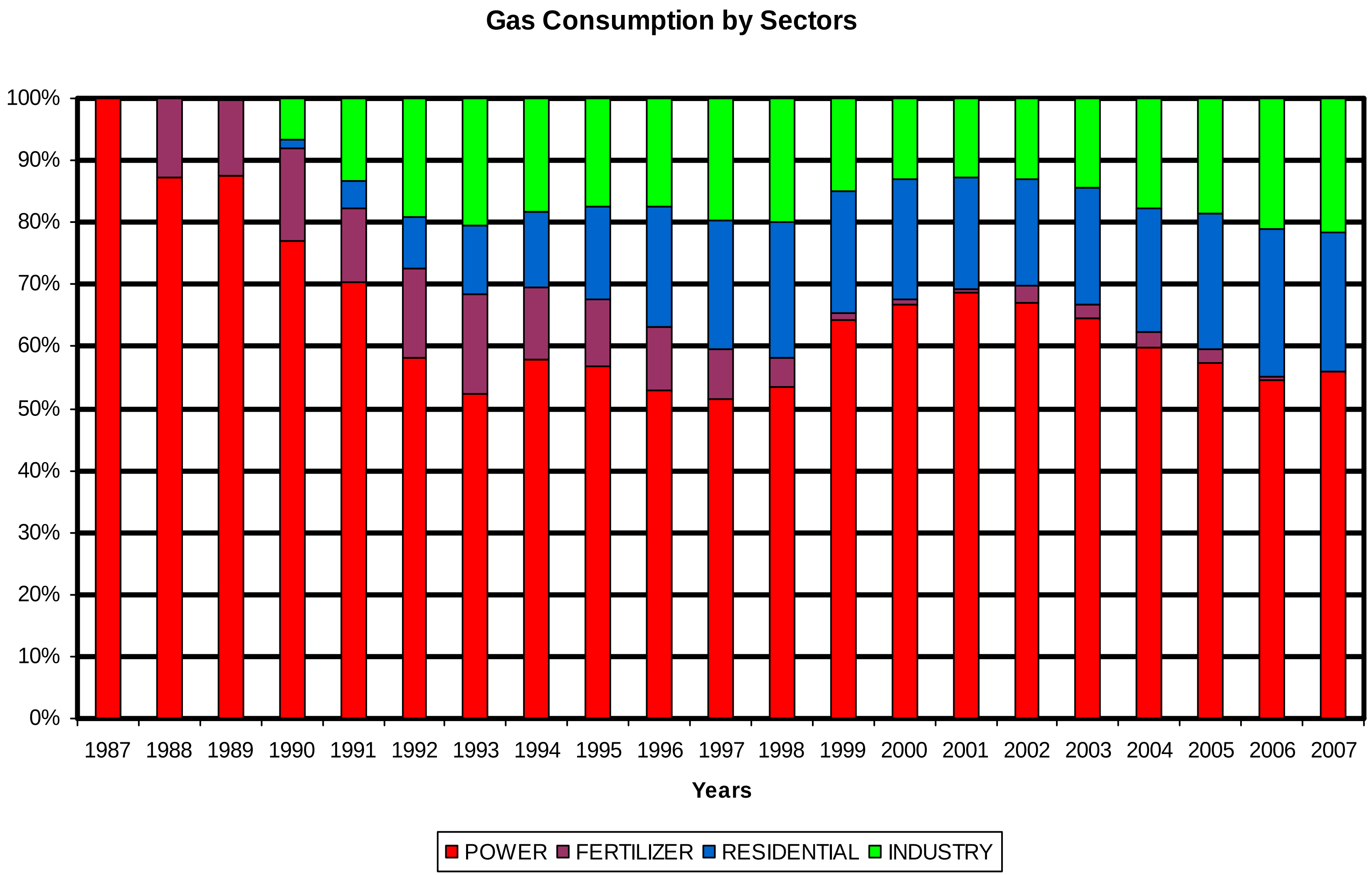
BOTAS PURCHASE CONTRACTS

Agreements	Volume,BCM	Date of signature	Duration (year)	Status
Russian Fed(Westward)	6	14.02.1986	25	In operation
Algeria(LNG)	4	14.04.1988	20	In operation
Nigeria(LNG)	1.2	09.11.1995	22	In operation
Iran	10	08.08.1996	25	In operation
Russian Fed.(Black sea)	16	15.12.1997	25	In operation
Russian Fed(Westward)	8	18.02.1998	23	In operation
Turkmenistan	16	21.05.1999	30	Uncertainty
Azerbaijan	6.6	12.03.2001	15	In operation

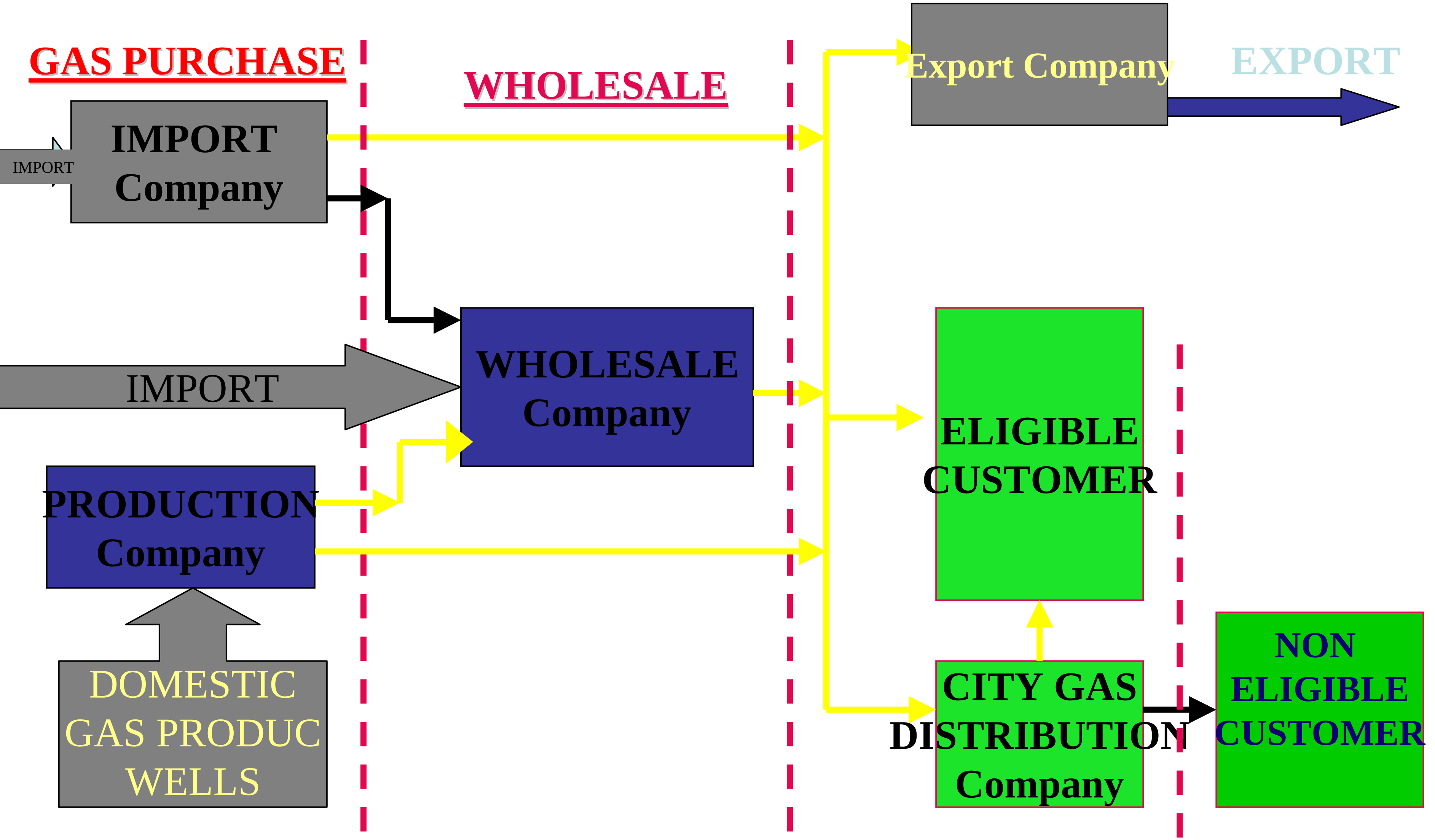
Gas Imports of Turkey



Gas Consumption by Sectors



NATURAL GAS MARKET



Temporary Article 2 of the Law 4646 Says

- **BOTAŞ can’t sign any new import contract up to its import falls down to 20% of the national natural gas consumption.**
- **Authority may give permission for import from the countries other than those which contracts have already been executed by BOTAS by evaluating the applications within the framework of the procedures and principles to be determined by taking into consideration the formation of a competitive environment in the market, the obligations arising from existing contracts and export connections.**
- **However, no new gas purchase contracts can be executed by any import company with the countries which has already signed contracts with BOTAS, until the expiration of the term of these contracts. New import contracts can be executed for the same amounts following the expiration dates of such existing contracts. However, new gas purchase connections can be established with such countries with the purpose of exportation or in case lack of national natural gas supply occurs.**

Transmission and Access to Existing Botas Pipeline

- **Regulations relating to transmission are:**
- **Natural Gas Market Law 4646**
- **Natural Gas Market Tariffs Regulation**
- **Natural Gas Transmmission Network Operation Regulation**
- **Board Decisions regarding to transmission tariff**
- **In accordance to Tariffs Regulation, entry-exit system is applied. Therefore, in accordance to rules in Network Operation Regulation and Network Code, capacity allocations are made for each exit and entry points.**
- **Since Network Code said that capacity allocations are made on yearly basis and for maksimum one year.**
- **There is a legal/regulatory access to BOTAŞ Existing Gas Transmission System of any gas importer or wholeseller who have relating licences given by Turkish Energy Market Regulatory Authority (EMRA).**

- **On the other hand, there are 6 natural gas market activity defined by Law 4646, transmission is one of those activities. In the law, there is no monopoly position in gas tranmission, therefore it can be said that the Law 4646 allows third party to build new gas pipelines in Turkey. But if these pipelines are transit pipelines, in that case Transit Law is applied. “**

NABUCCO PIPELINE

- Aim is to open a new **gas supply corridor** for Europe
- The pipeline length is approximately 3,300 km, starting at the Georgian/Turkish and/or Iranian/Turkish border respectively, leading to Baumgarten in Austria. 31 BCM and 5 billion euros.
- Gas not guarantied yet

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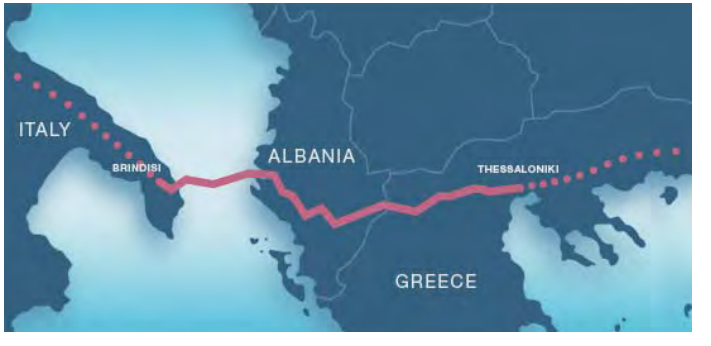
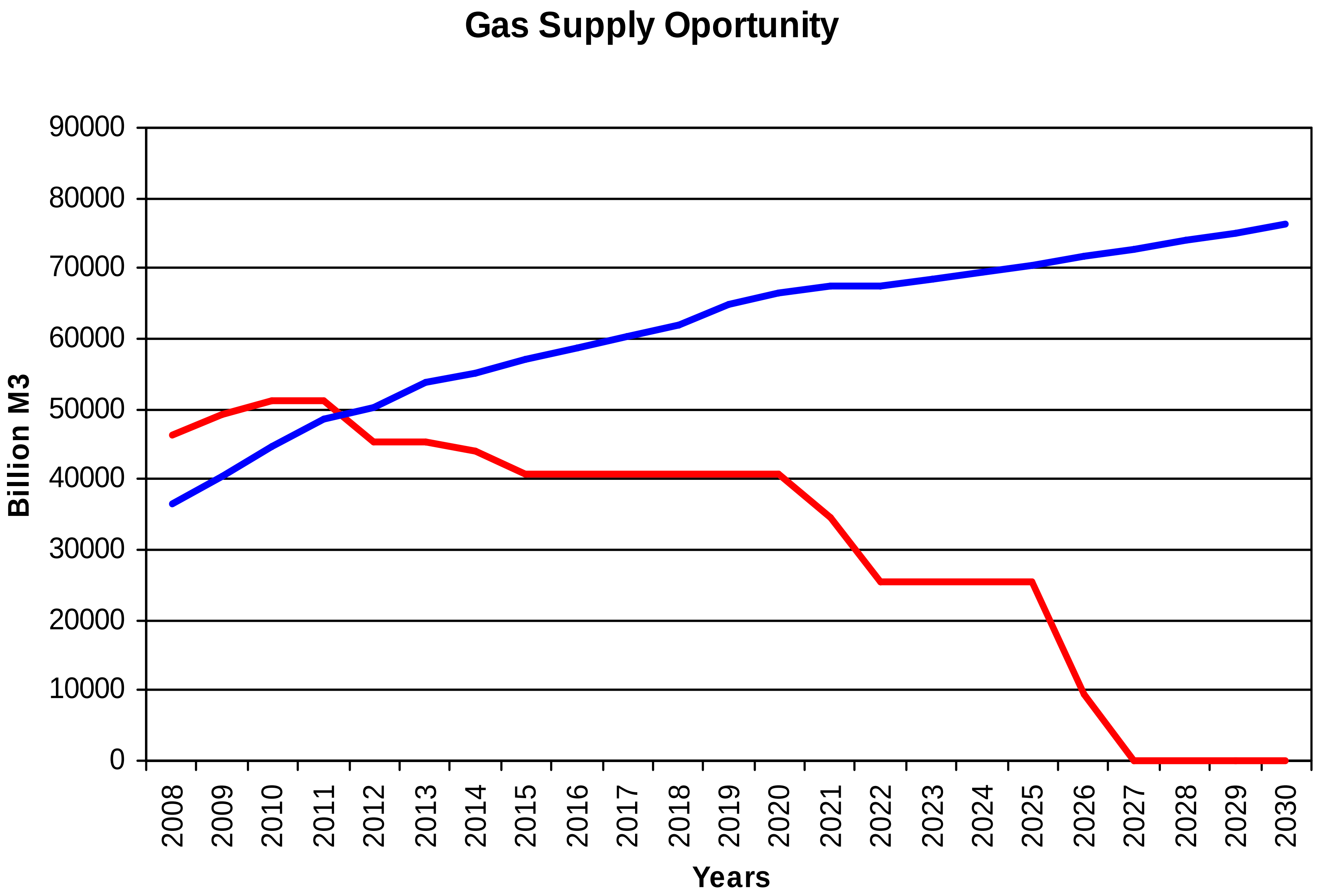


SOUTH STREAM

- Gas Availibity 30 BCM Comissioned in 2013, 10 bln euros investment
- 900 km Offshore pipeline route will cross the continental shelf of Ukraine and Romania.
- Agreements with Bulgaria, Greece,Serbia,Hungary signed

- OMV is considering South Stream and wants to strengthen Baumgarten.


Gas Supply Oportunity
Billion M3
90000
80000
70000
60000
50000
40000
30000
20000
10000
0
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
Years

Gas Demand of Projects

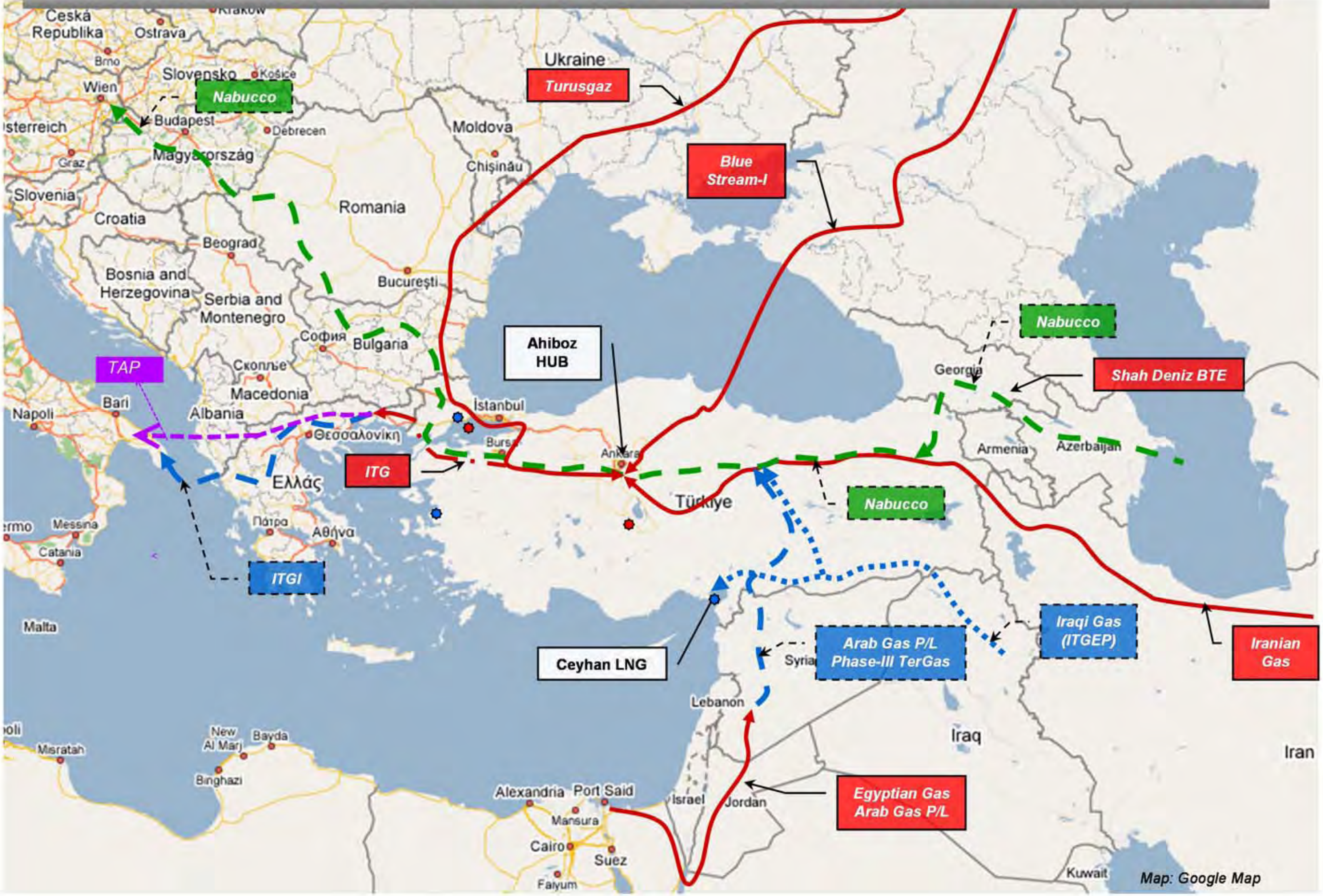
Year			**2020**		**2020**
NABUCCO			**31000**		**31000**
TAP			**10000**		**20000**
TGI			**11000**		**11000**
DEMAND OF TURKEY			**15000**		**26000**
	TOTAL		**67000**		**88000**

GAS SUPPLY COUNTRIES INTO THE REGION

Source: BP Statistical Review Report

Natural Gas: Proved reserves	Trillion cubic meter	Share of total	R/P ratio
Russian Federation	47,65	26,3%	77,8
Iran	28,13	15,5%	*
Qatar	25,36	14,0%	*
Nigeria	5,21	2,9%	*
Algeria	4,50	2,5%	53,3
Iraq	3,17	1,7%	*
Kazakhstan	3,00	1,7%	*
Turkmenistan	2,86	1,6%	46,0
Azerbaijan	1,35	0,7%	*
Egypt	1,94	1,1%	43,3
Uzbekistan	1,87	1,0%	33,7
Libya	1,32	0,7%	88,9

INTERNATIONAL NATURAL GAS PIPELINE PROJECTS OF TURKEY



IRAN

- Second Largest Gas Reserve
- Gas Supply to Turkey but only 60% of its Commitments and Price Conflict with Botas (Turkey)
- Gas Supply Agreements with EGL and negotiate with Turkey offshore and onshore features of phases 22-24 of the South Pars gas field to produce 20 BCM.
- Use Iran as a transit country for Turkmenistan's natural gas.
- China is emerging as a potential partner in the proposed multi-billion dollar, 2,700-kilometer gas pipeline originally intended to link Iran, Pakistan and India.
- There are political problems. the US and the UN sanctions have sent strong signals that almost anyone investing in Iran could be in breach of the law. That’s why can not increase gas production.
- Shell and Repsol draw back from Persian LNG project.

TURKMENİSTAN

- Turkmenistan’s contracts with Gazprom stipulating 50 bcm;
- signed an agreement to sell China 30 bcm of Turkmen gas annually for 30 years
- In 2006 Turkmenistan produced 62 bcm of natural gas, second only to Russia. With 2005 domestic consumption 17 bcm, approximately 45 bcm, available for export. and exports to Iran of approximately 7.6 bcm
- Turkmenistan has also signed a new pipeline deal with Kazakhstan and Russia to build a pipeline along the northeastern shore of the Caspian Sea to eventually supply markets in Europe. That pipeline, with a capacity of at least 20 billion cubic meters annually, is expected to be ready by 2010
- Pakistan, India and Afghanistan signed a framework agreement to buy natural gas from Turkmenistan, despite the cost of laying a pipeline from the Central Asian state having increased to $7.6 billion from the earlier estimate of $3.3 billion.
- Turkmenistan needs to increase gas production from 45bcm to 135-145 bcm to fulfill all its projects

Thank you for your attention

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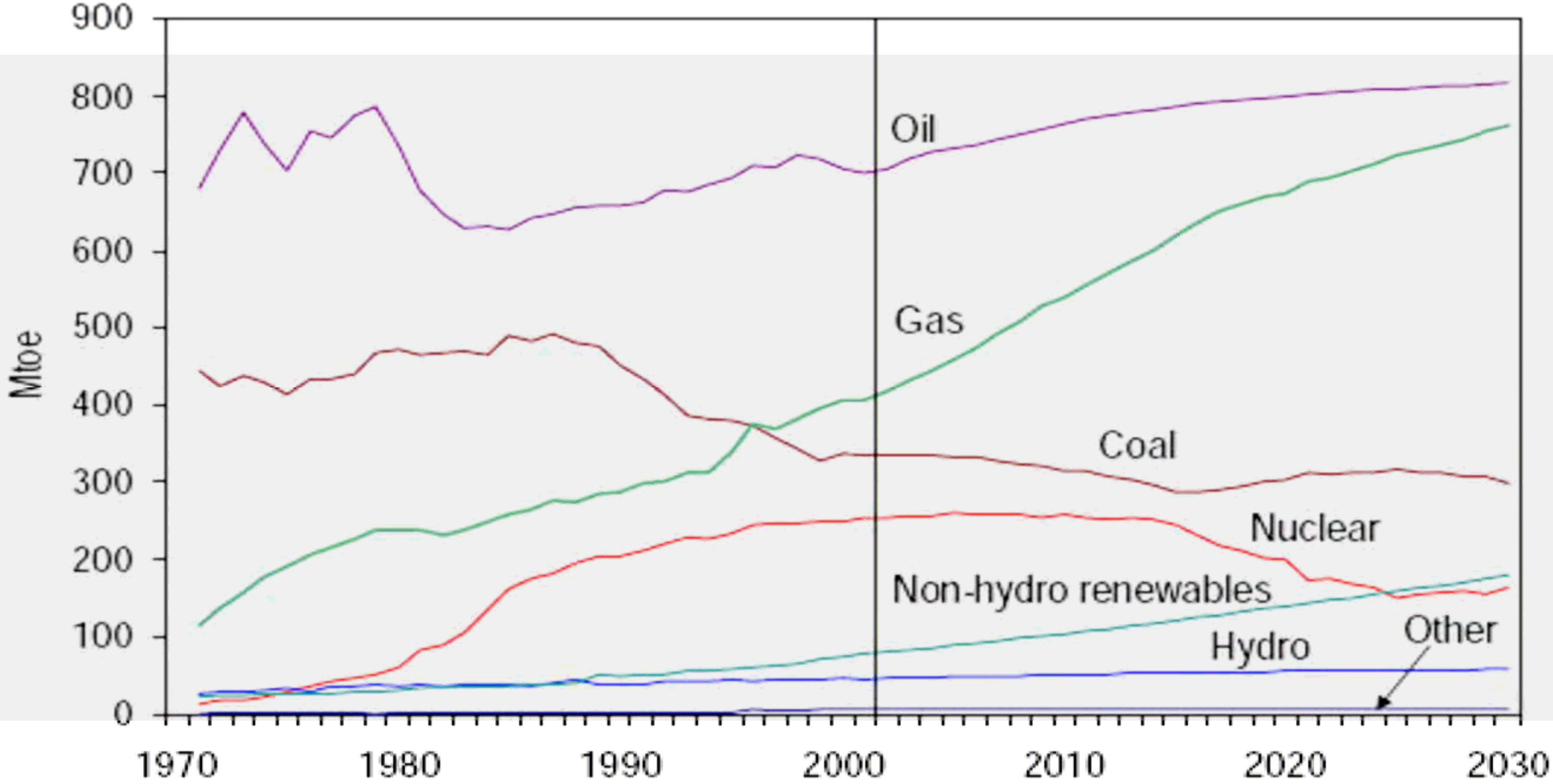
Chemical Engineer BSc. MSc

- EGO Maltepe Town Gas Plant, Operation Engineer, Laboratory Chief Engineer, June 1979 - September 1983 EGO
- BOTAŞ (Petroleum Pipeline Corporation), Engineer, Project manager,Technical Coordinator, Head of Natural Gas Department December 1983 - March1999
- BOTAŞ, Chairman and General Manager 15 March1999- 26 July 2001
- Counselor in MENRA 26 July 2001 – 16 February 2005 (Retirement)
- Specialist in Natural Gas (Pipeline or LNG) Import (SPA), Marketing and Sales. Pipeline, LNG, Storage and Distribution Technologies. International Relations in Natural Gas. UN Head of Natural Gas Expert Group.

Primary Energy Demand
Reference Scenario: EU-30



Source: IEA World Energy Outlook, Dr. Fatih Birol

Natural Gas Primary Demand

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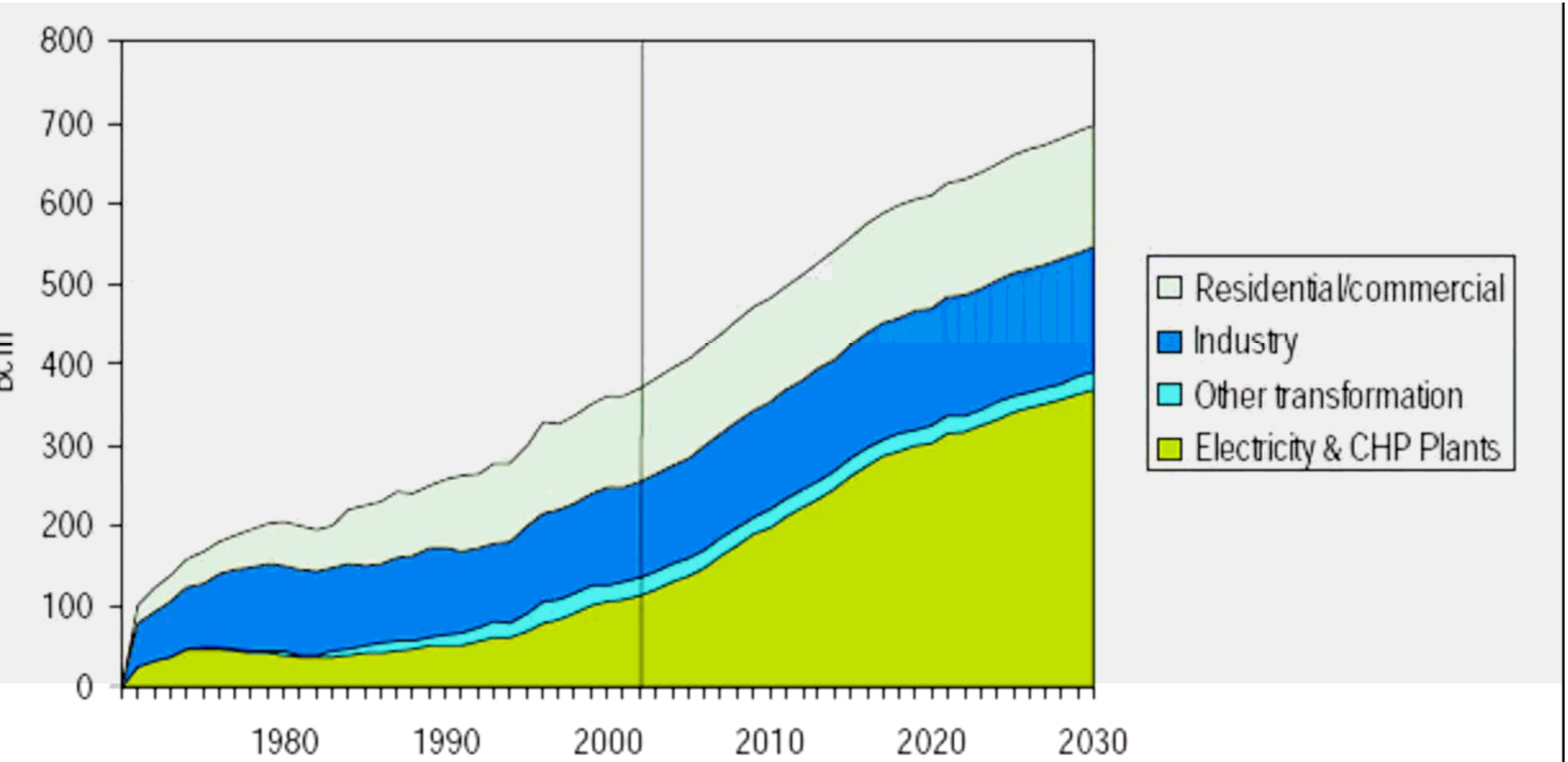

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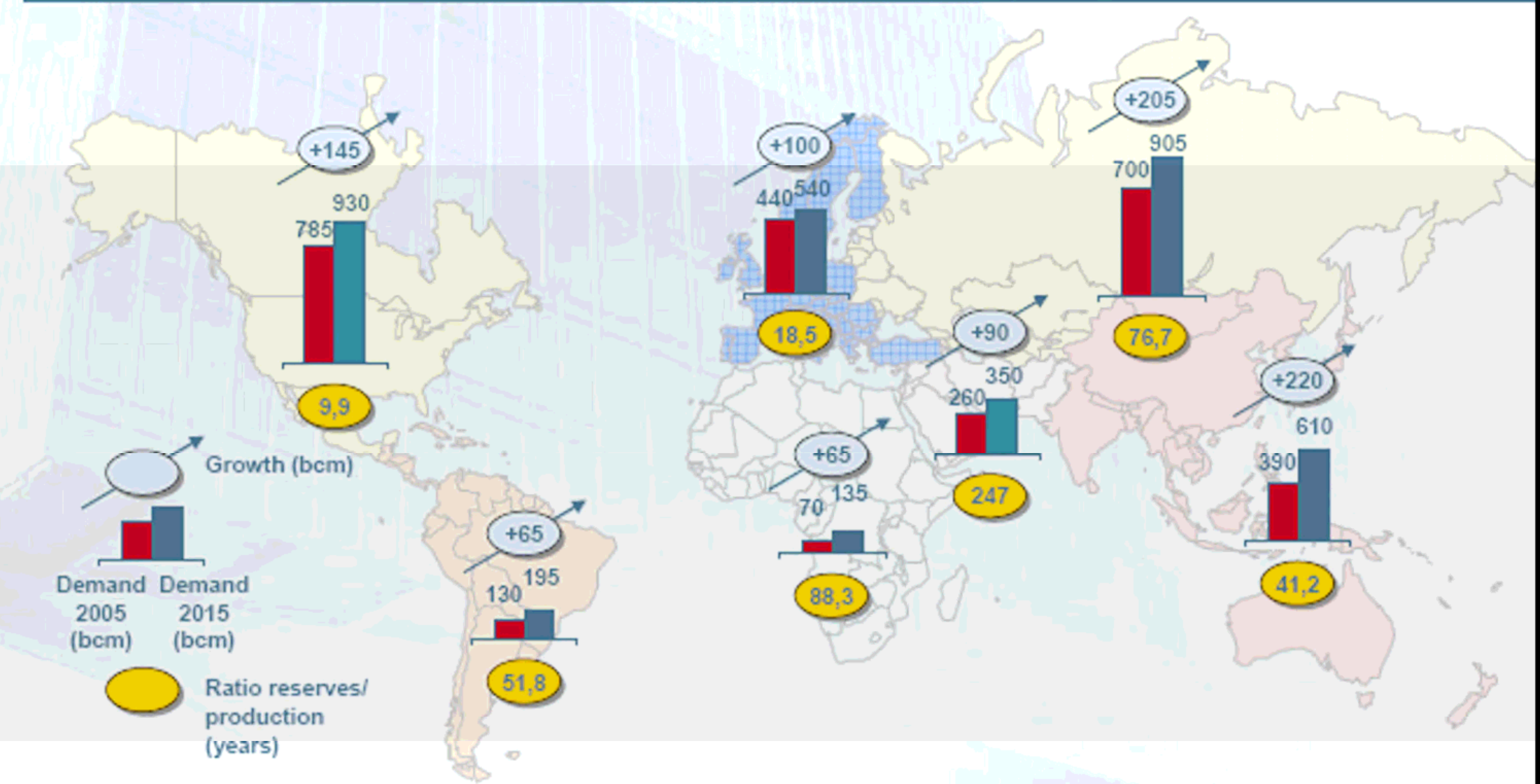
Gas demand will grow significantly in all regions, and specially in Asia. Proven reserves could supply for over 60 years.

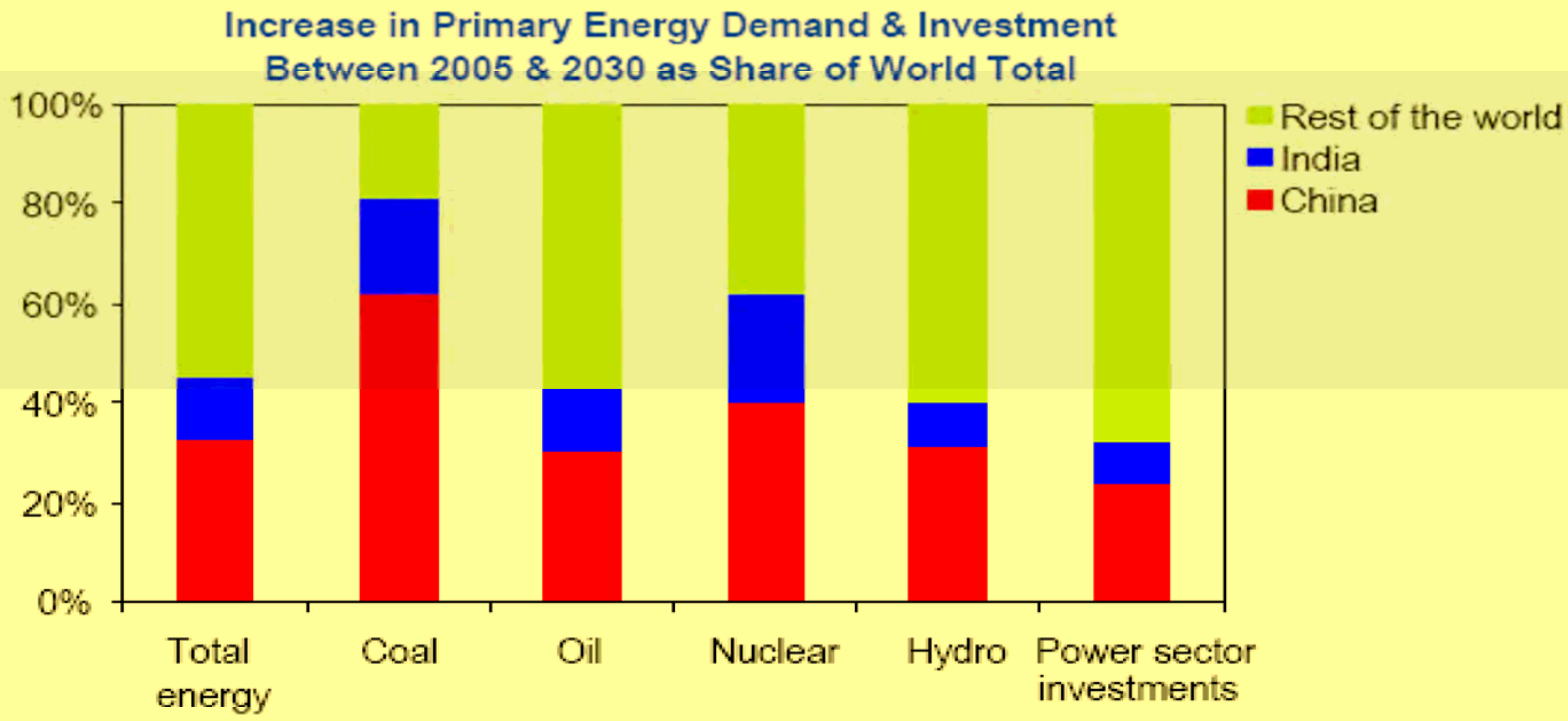


World energy demand is expected to grow from ~2.800 bcm in 2005 to reach ~3.700 bcm in 2015 (CAGR = 2,8%)

5 Source: BP Statistical Review; IEA World Energy Outlook; EIA; BCG

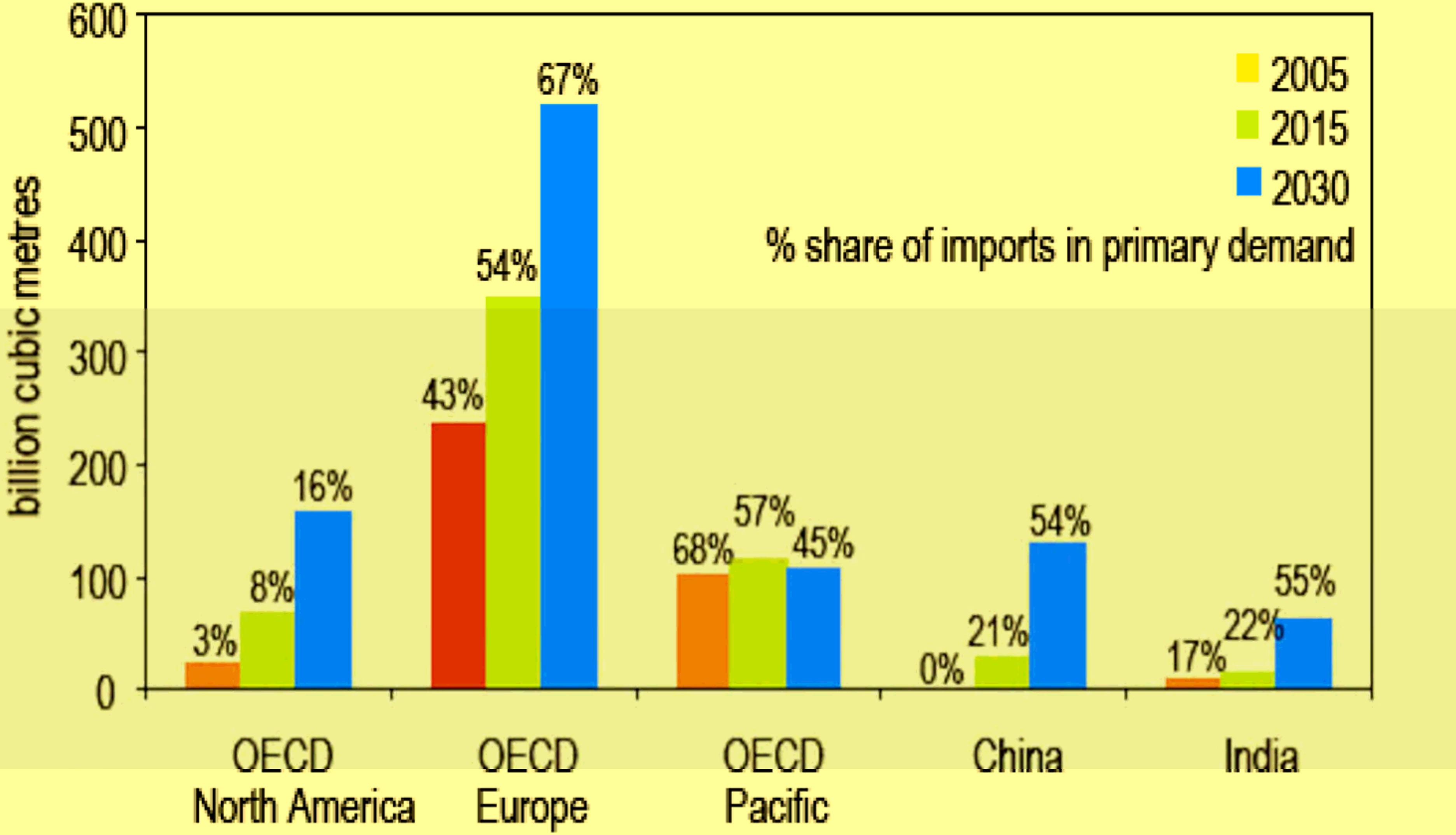
Source : Role of LNG to Enhance Energy Security in the UNECE Region Geneva 22 January 2008, gasNatural Eduardo Herraiz

The Emerging Giants of World Energy



China & India will contribute more than 40% of the increase in global energy demand to 2030 on current trends

Source: IEA World Energy Outlook Dr. Fatih Birol



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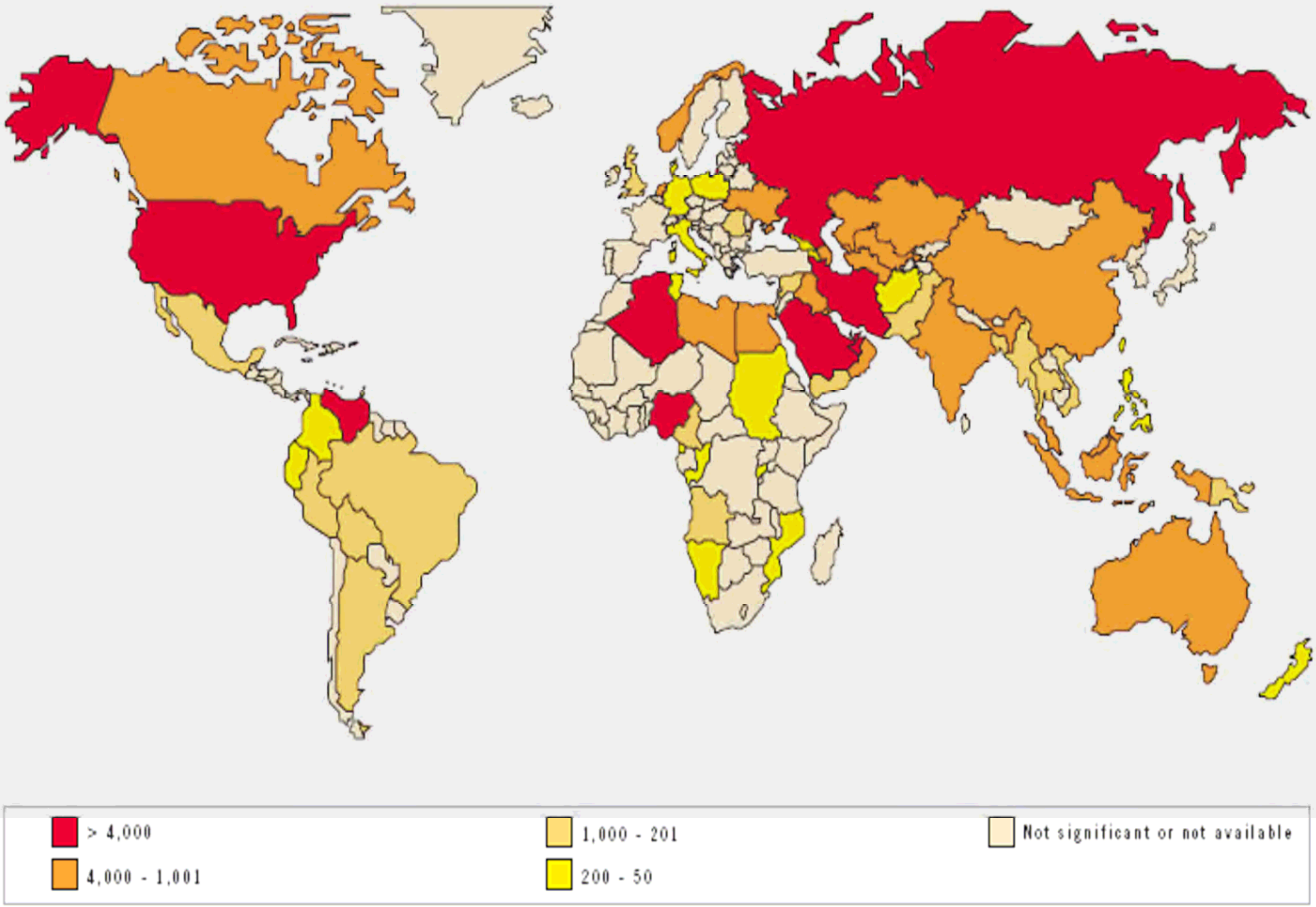

Source: World Oil and Gas Rewiev ENI 2007

GAS SUPPLY PROJECTS

- South Stream
- Nabucco Gas Pipeline Project
- TAP Trans Adriatic Pipeline
- TGI Turkey Greece Italy Pipeline

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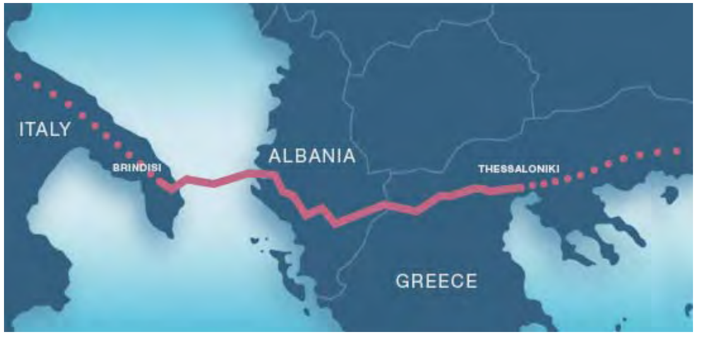

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PROJECT	DISTANCE	CAPACITY	INVESTMENT	OPERATION	GAS	OWNER	BOTTLENECK	Role of Proje
	KM	BCM	Billion Euros	Year				
South Stream	920 km offs/	30	10	2013	Russian	Government	Ukraine Sea Water/Finance	Competition with Nabucco but complement IGI
TAP	215 off/ 520Total	10	1,5		Azerbaijan/Iran	Private	Turkey Passage and Greece Government	Competition with IGI
IGI	600	11		2012	Azerbaijan	Government/Private	Gas Availability, EU Commission Conditionally Approved	Competition with TAP
Nabucco	3300	31	5	2013		Government		Competition with South Stream