

ASIA PACIFIC NATURAL GAS AND LNG OUT LOOK

Presented

by :

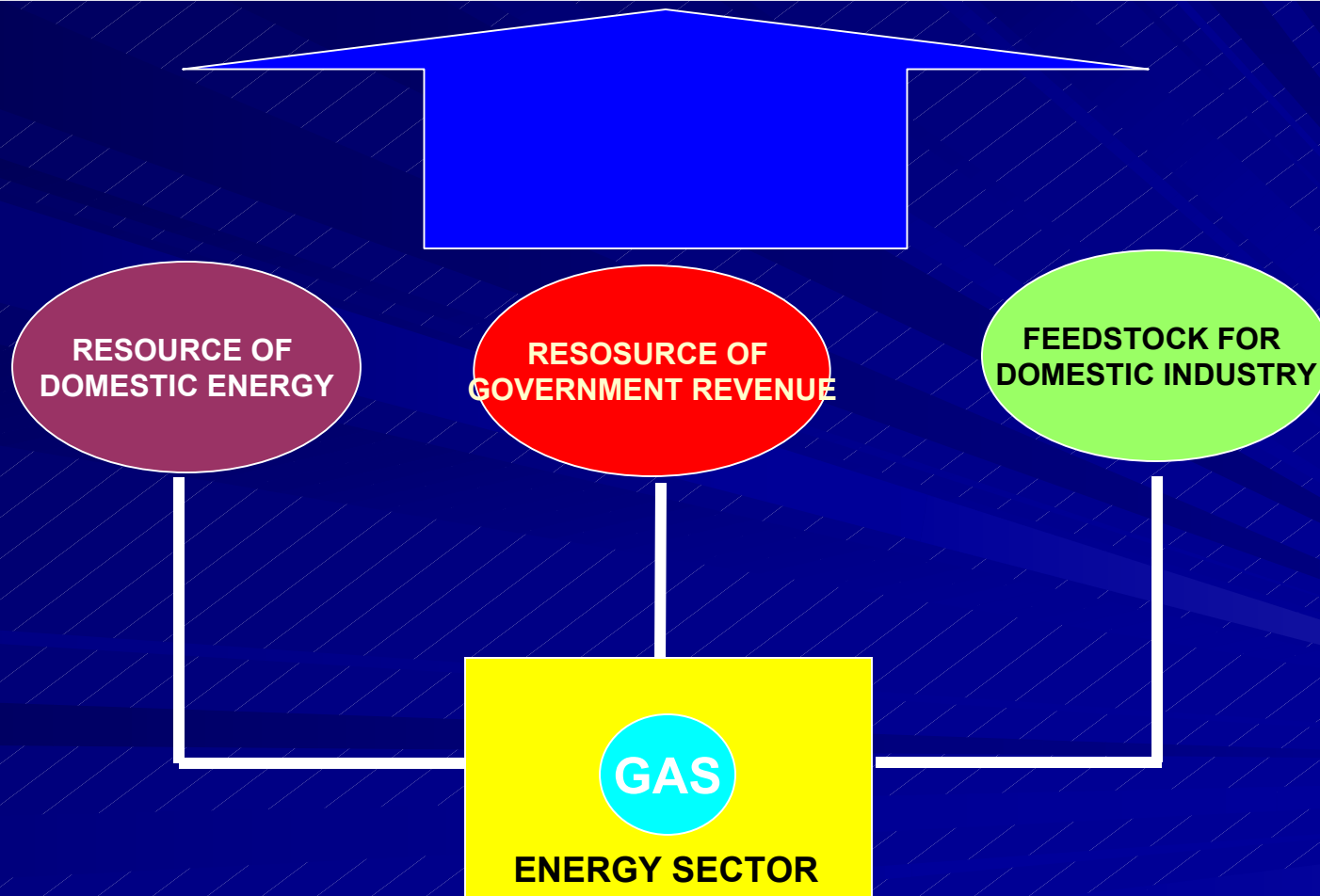
**Director General of Oil and Gas
Department of Energy and Mineral Resources
Republic Indonesia**

**The Second APEC Gas Forum (APGAS 2)
Perth, Australia
31 August – 1 September 2006**

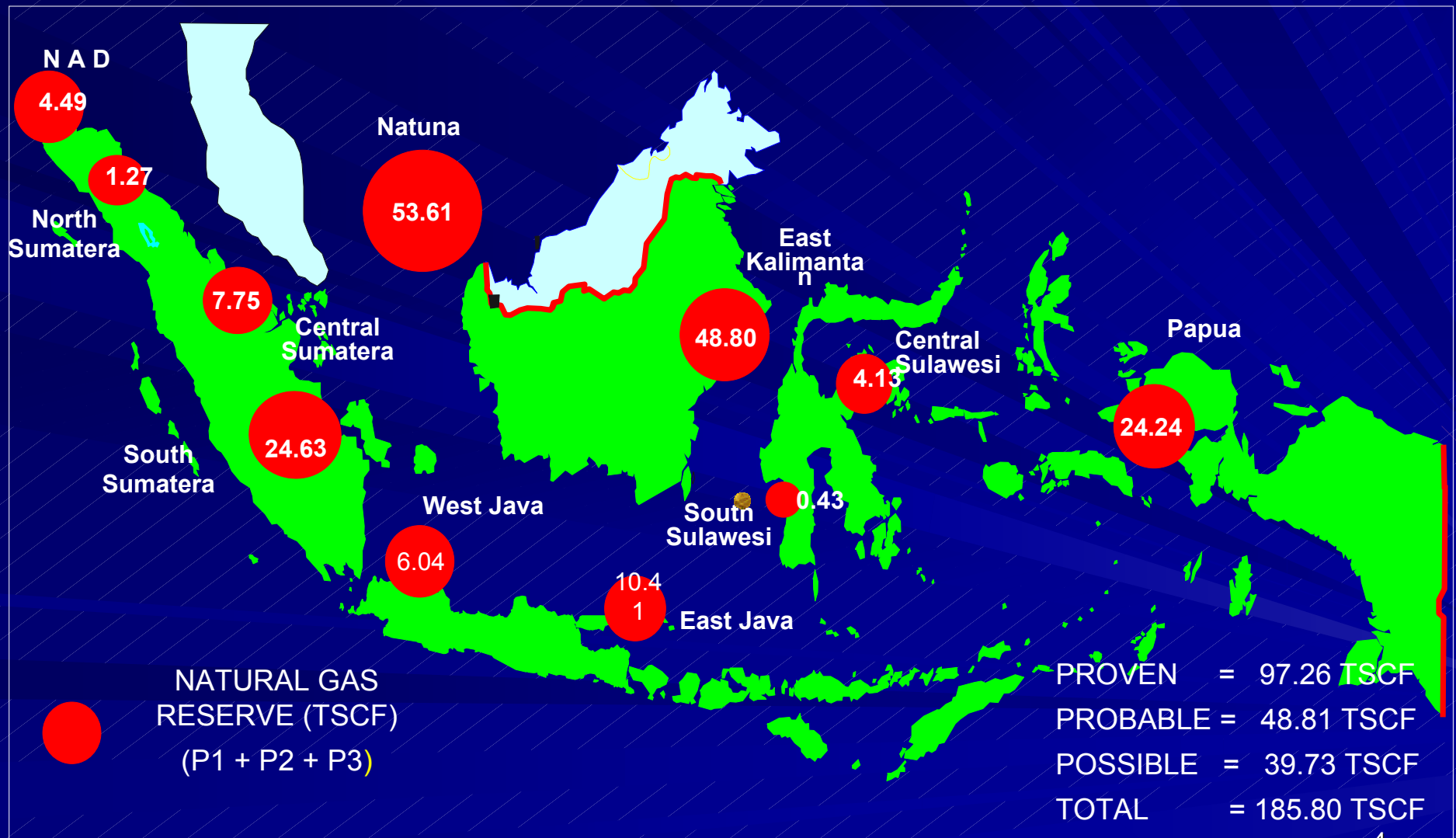
INDONESIA GAS DEVELOPMENT

THE ROLE OF NATURAL GAS

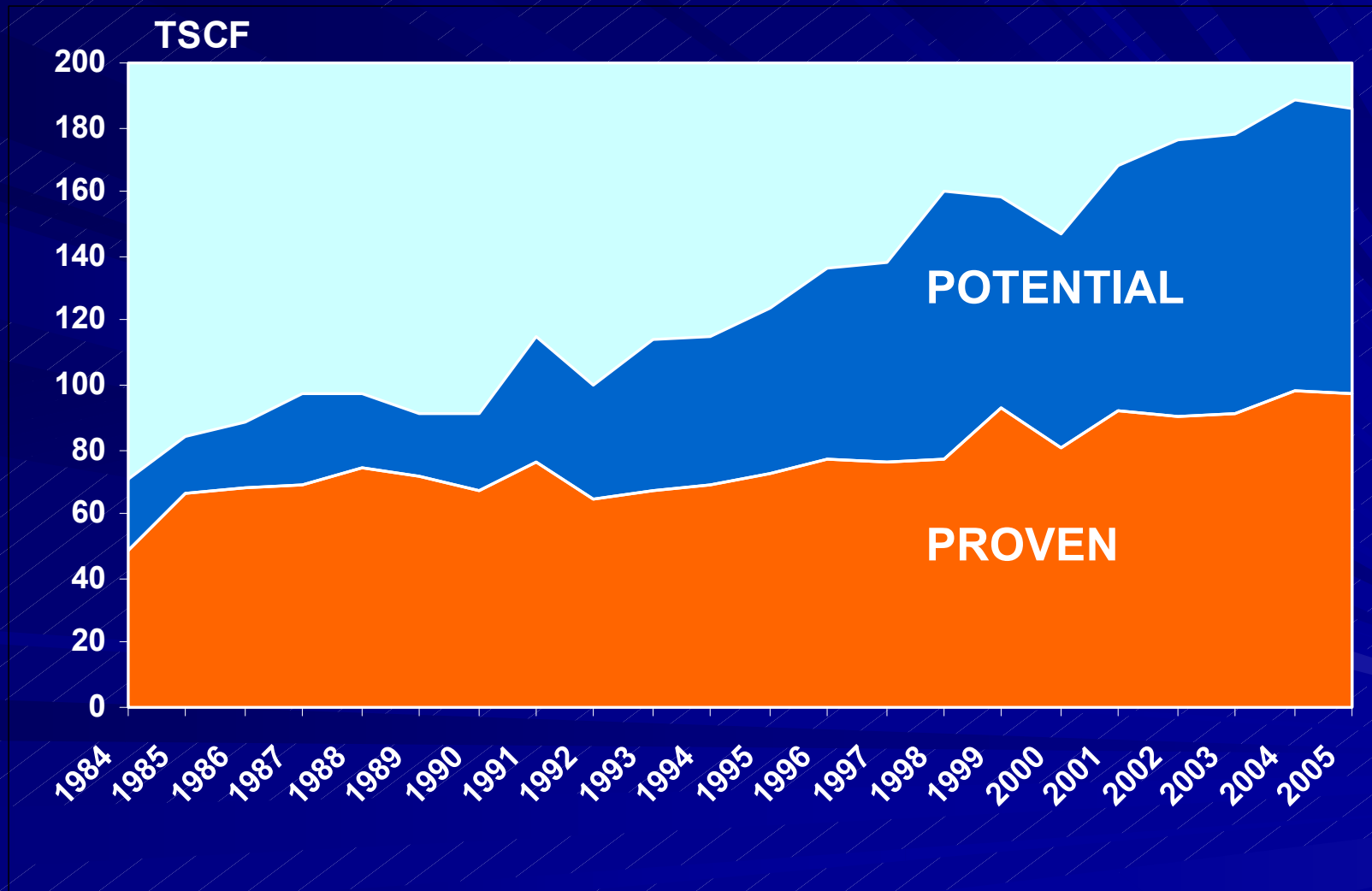
INDONESIAN ECONOMIC DEVELOPMENT



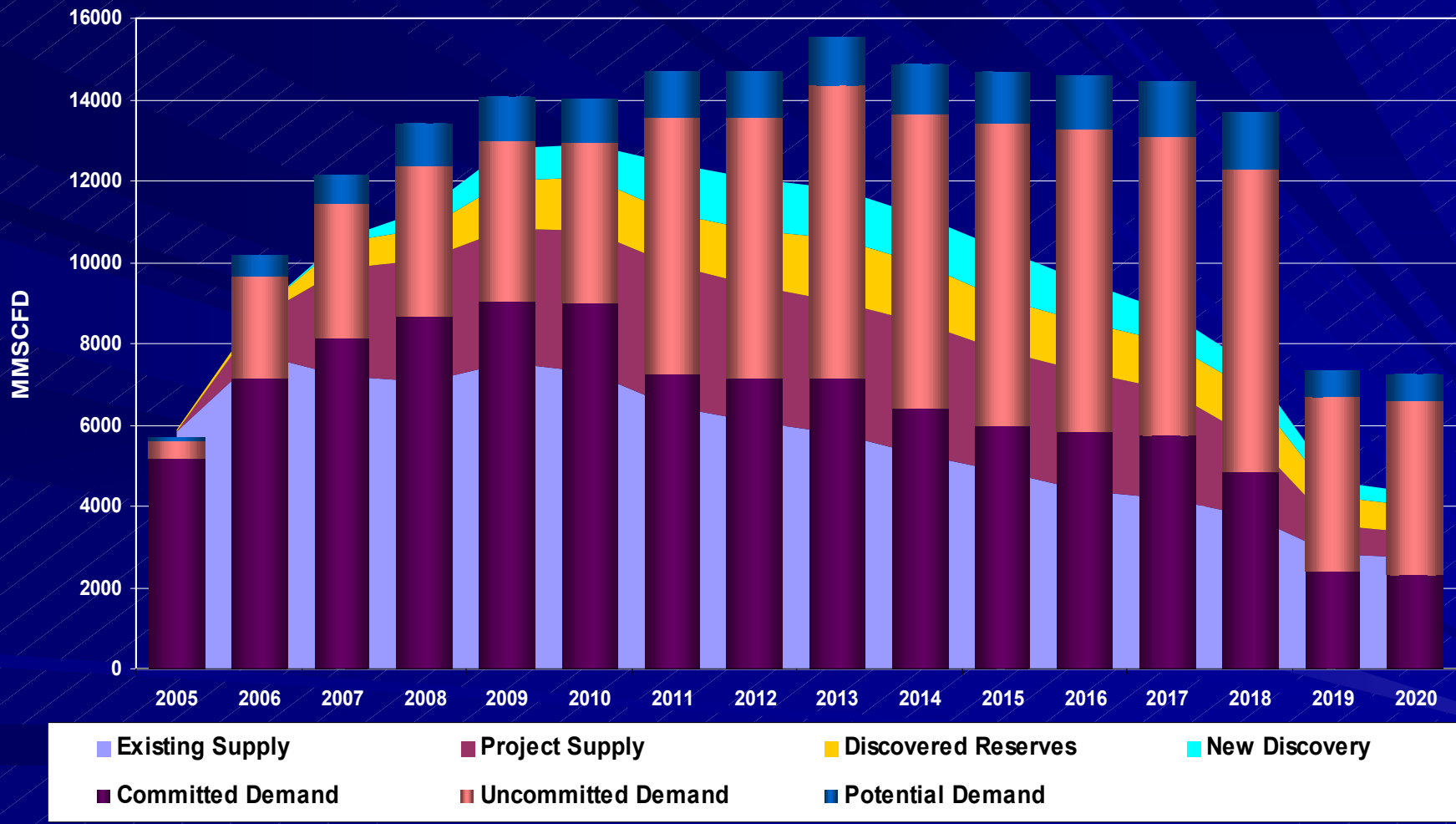
INDONESIA GAS RESERVE (Status January 1st, 2005)



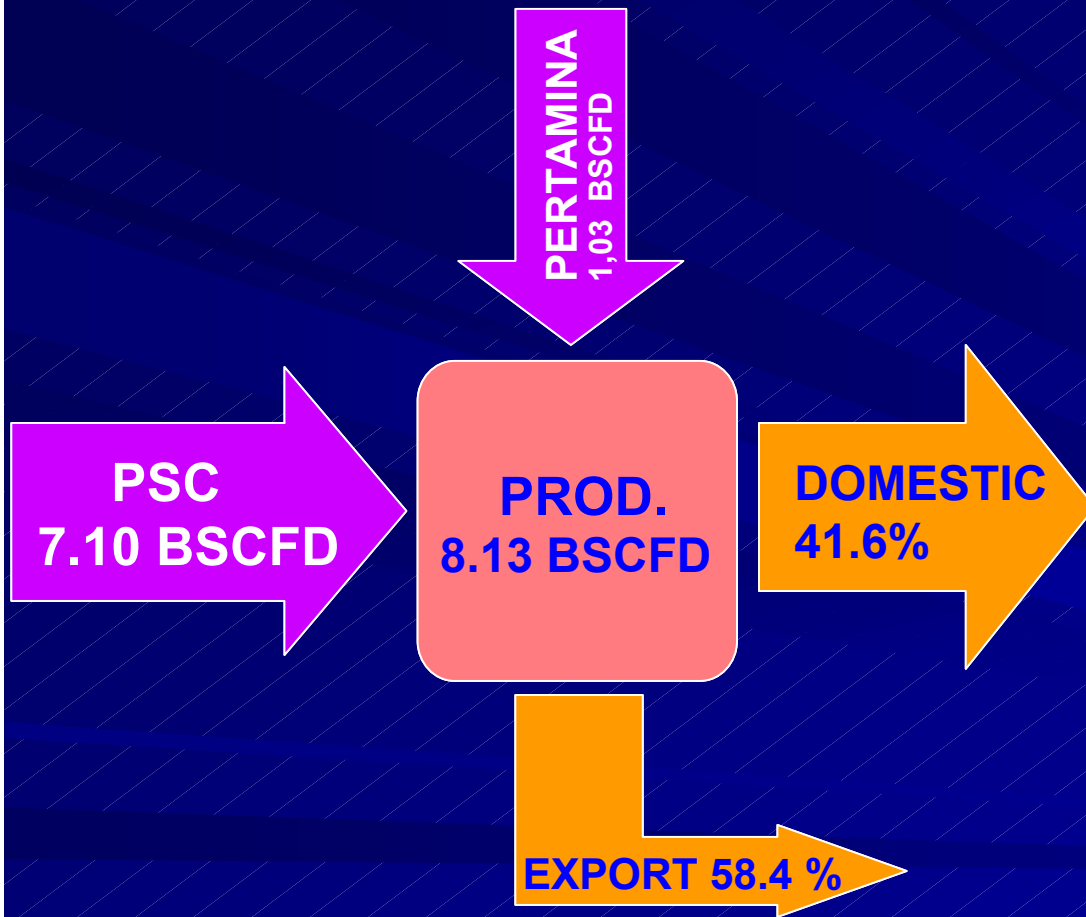
INDONESIA GAS RESERVE (1984-2005)



INDONESIA GAS BALANCE



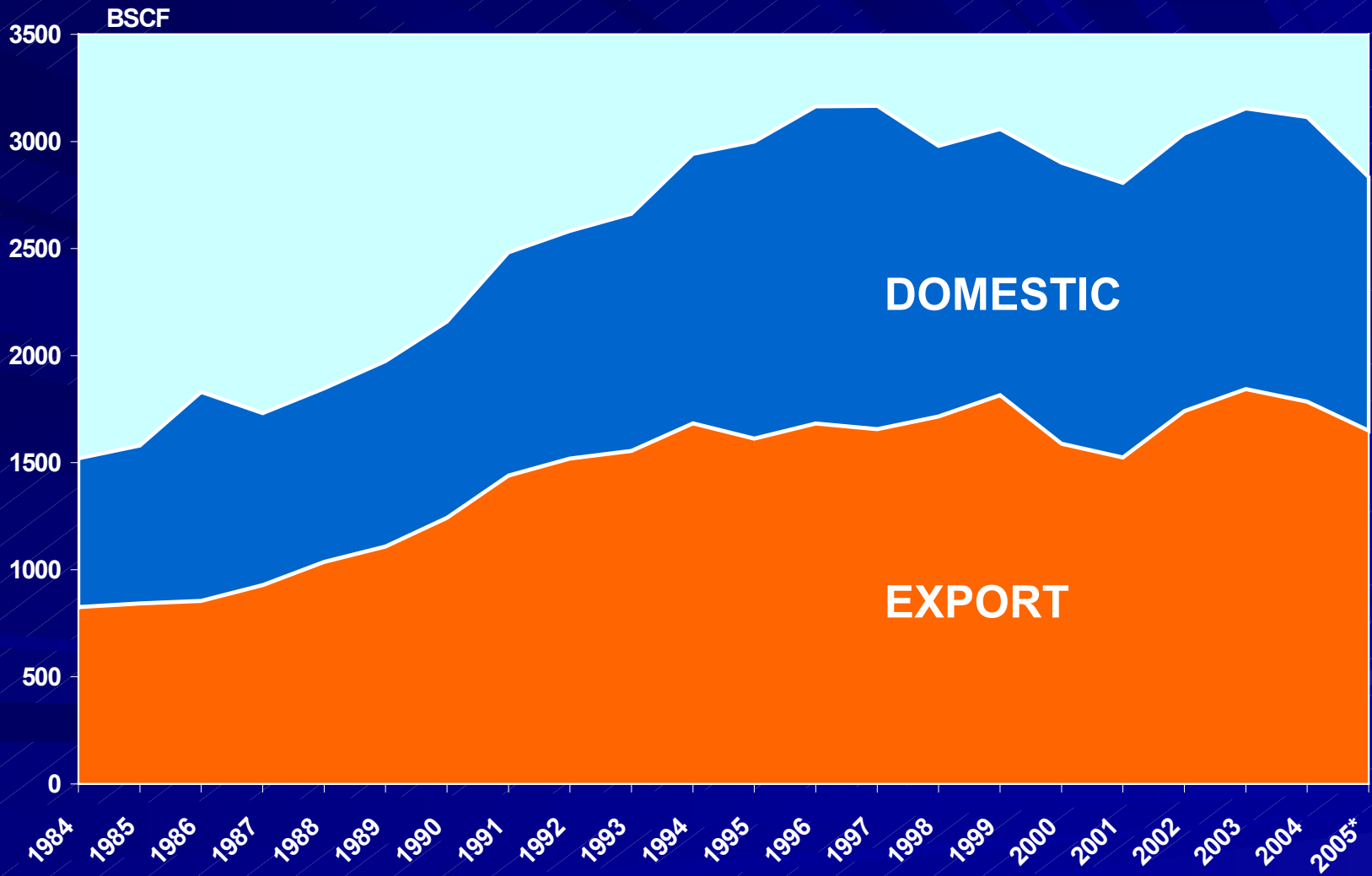
GAS PRODUCTION AND UTILIZATION YEAR 2005



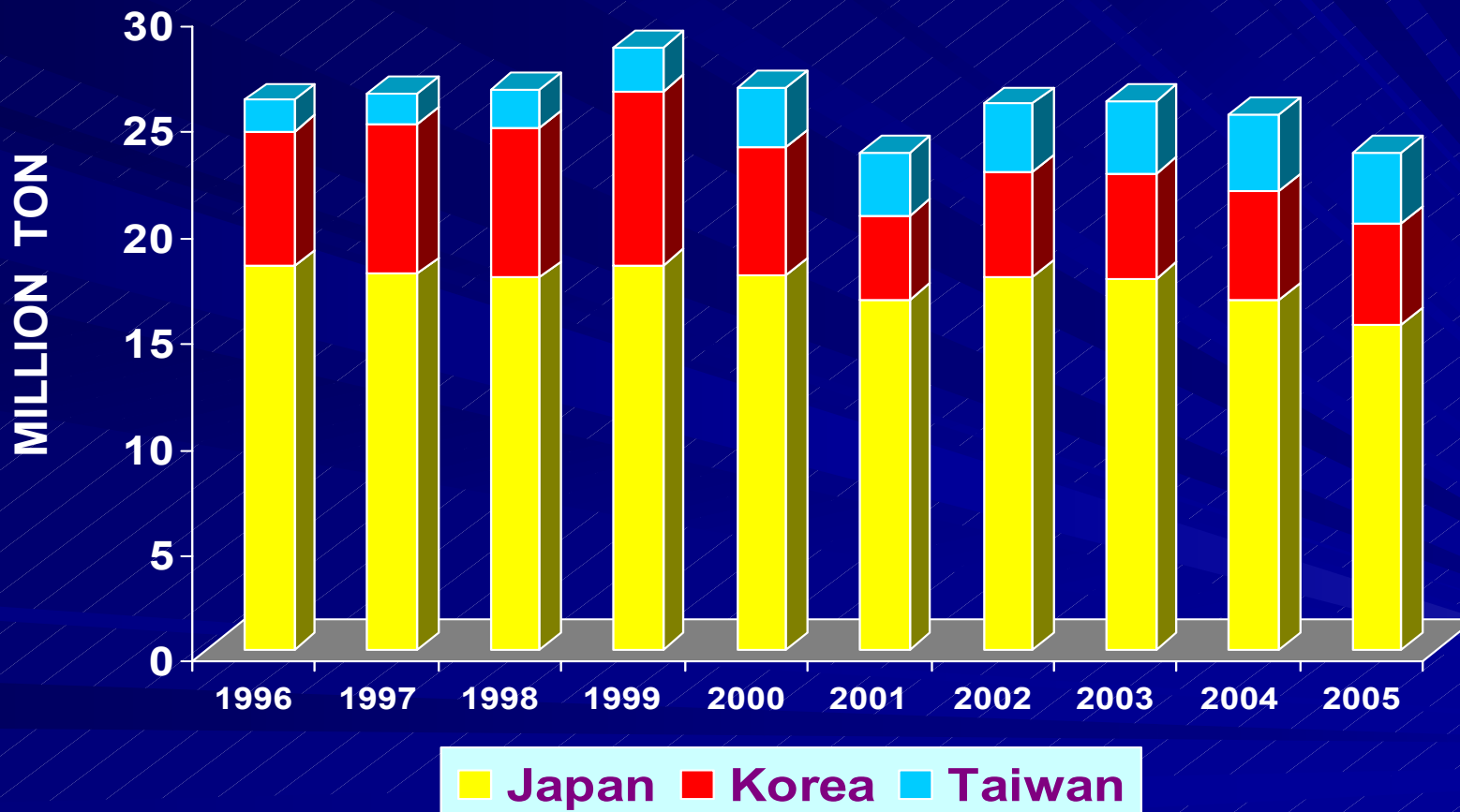
	MMSCFD	(%)
FERTILIZER/PETROCHEMICAL	591.0	7.3
RIFENERY	44.1	0.5
LPG	69.8	0.9
PGN	617.6	7.69
PLN/ELECTRICITY	442.7	5.4
STEEL INDUSTRY	0	0.0
OTHER INDUSTRIES	474.5	5.8
OWN USE	843.0	10.4
LOST/FLARE	300.5	3.7
TOTAL	3,383.2	41.6

LNG	3839.9	47.2
LPG	299.1	3.7
GAS PIPELINE	612.3	7.5
TOTAL	4,751.3	58.4

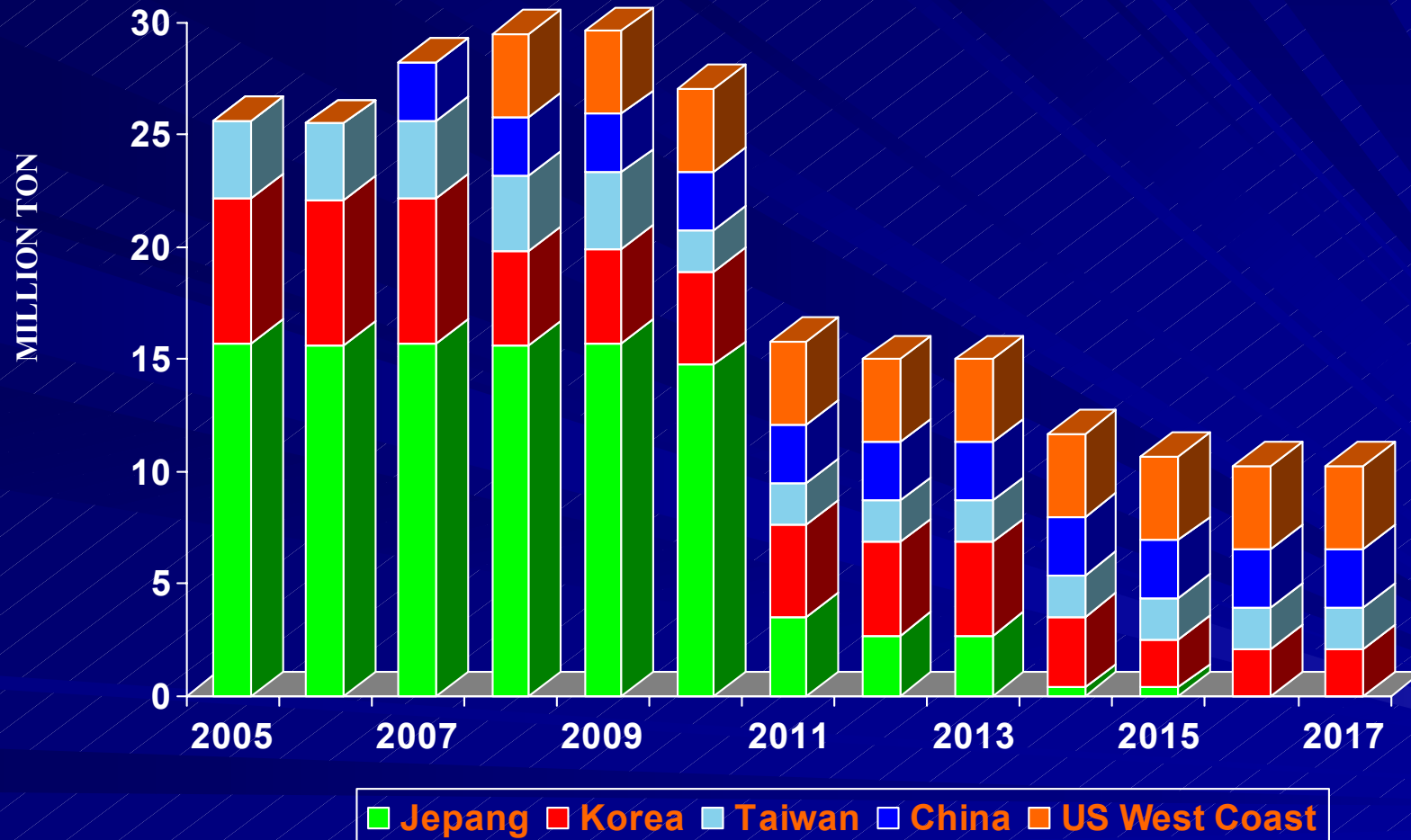
INDONESIA GAS UTILIZATION (1984-2005)



INDONESIA LNG EXPORT (1996 - 2005)



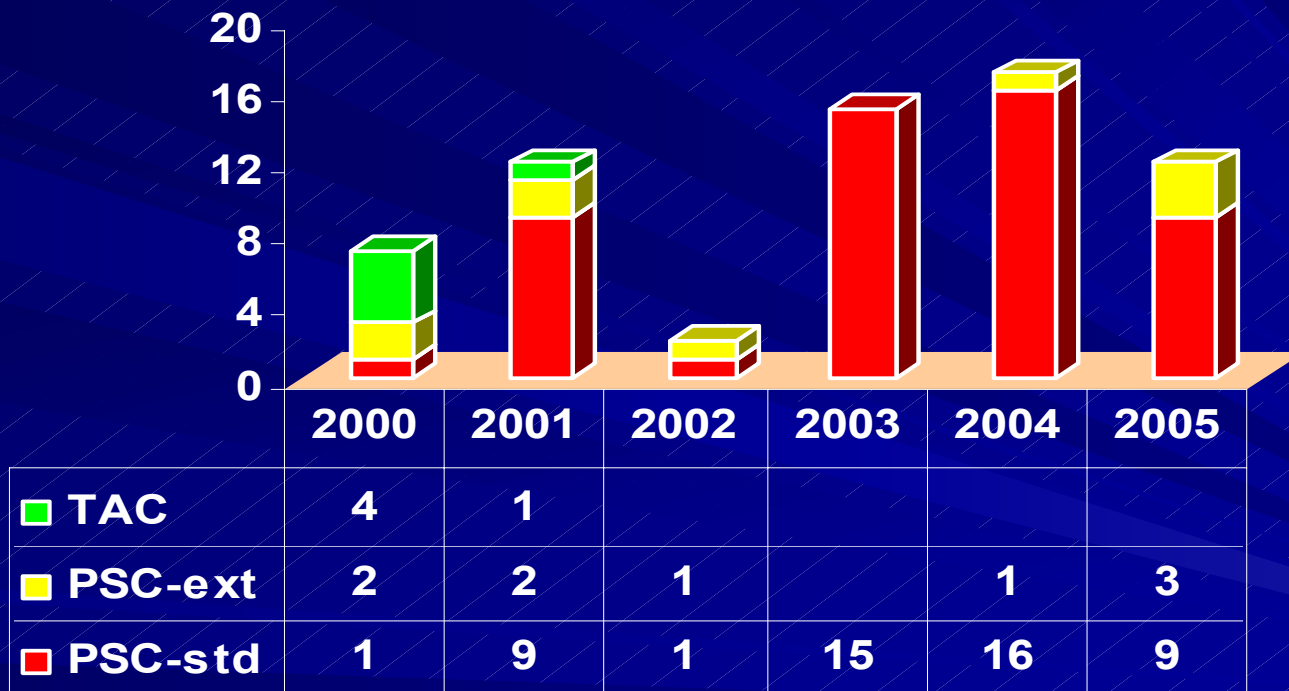
INDONESIA LNG CONTRACTS



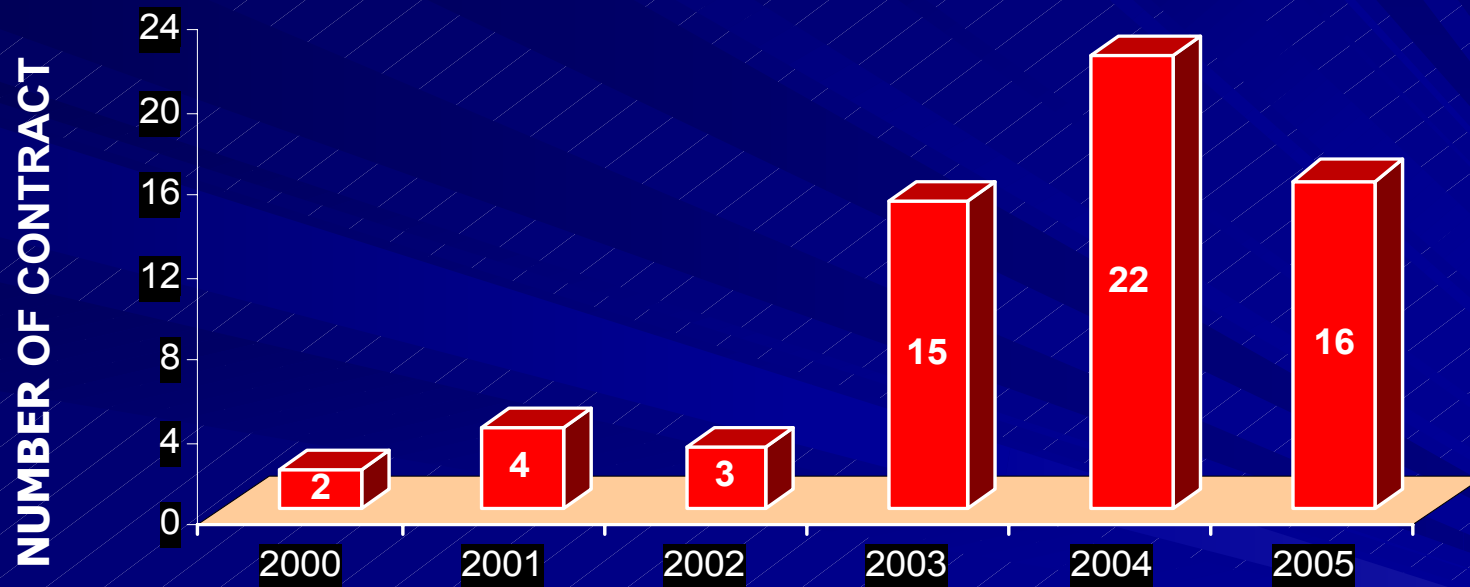
INDONESIA LNG CONTRACTS

CONTRACT	VOLUME (MTPA)	MARKET	LNG PLANT	TERM
EXISTING				
ARUN II	0,90	APAN	ARUN	1/2005 - 12/2009
ARUN III	2,33	KOREA	BONTANG/ARUN	1986 - 2007
KOREA II	1,95	KOREA	BONTANG/ARUN	7/1994 - 6/2014
LNG 1973 (Ext)	8,42	JAPAN	BONTANG	1/2000 - 12/2010
BADAK II S/C	3,63	JAPAN	BONTANG	4/2003 - 3/2011
BADAK III S/C	1,57	TAIWAN	BONTANG	1/1990 - 12/2009
BADAK IV S/C	2,30	JAPAN	BONTANG	1/1994 - 12/2013
BADAK V S/C	1,02	KOREA	BONTANG	1/1998 - 12/2017
BADAK VI S/C	1,84	TAIWAN	BONTANG	1/1998 - 12/2017
MCGC	0,39	JAPAN	BONTANG	3/1996 - 12/2015
TOTAL	24,35			
NEW				
FUJIAN	2,60	CHINA	TANGGUH	1/2007 - 12/2031
SK/POSCO	1,10	KOREA	TANGGUH	1/2005 - 12/2024
SEMPRA ENERGY	3,70	US WEST COAST	TANGGUH	6/2008 - 6/2028
TOTAL	7,40			

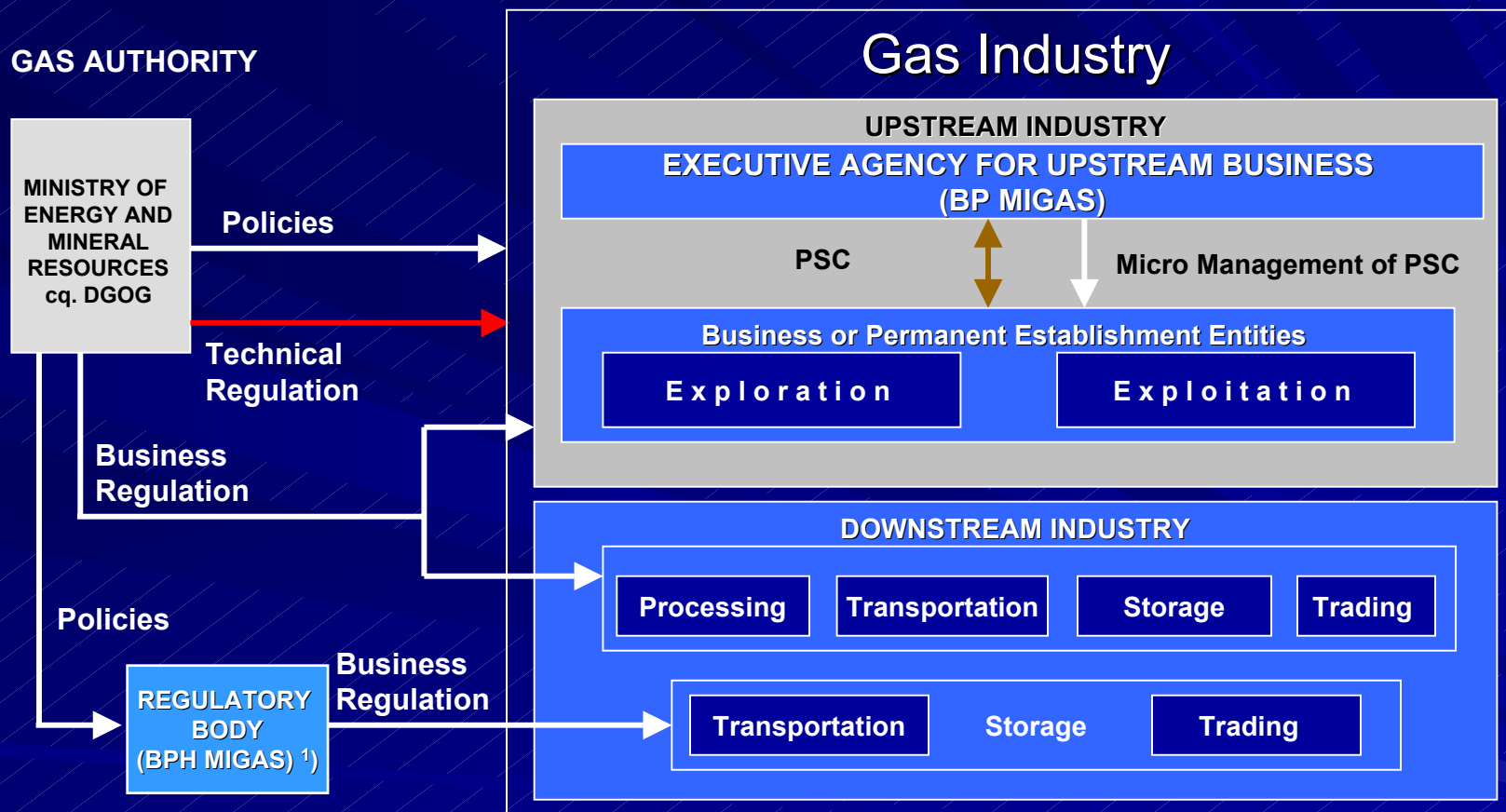
PRODUCTION SHARING CONTRACT (PSC) (2000-2005)



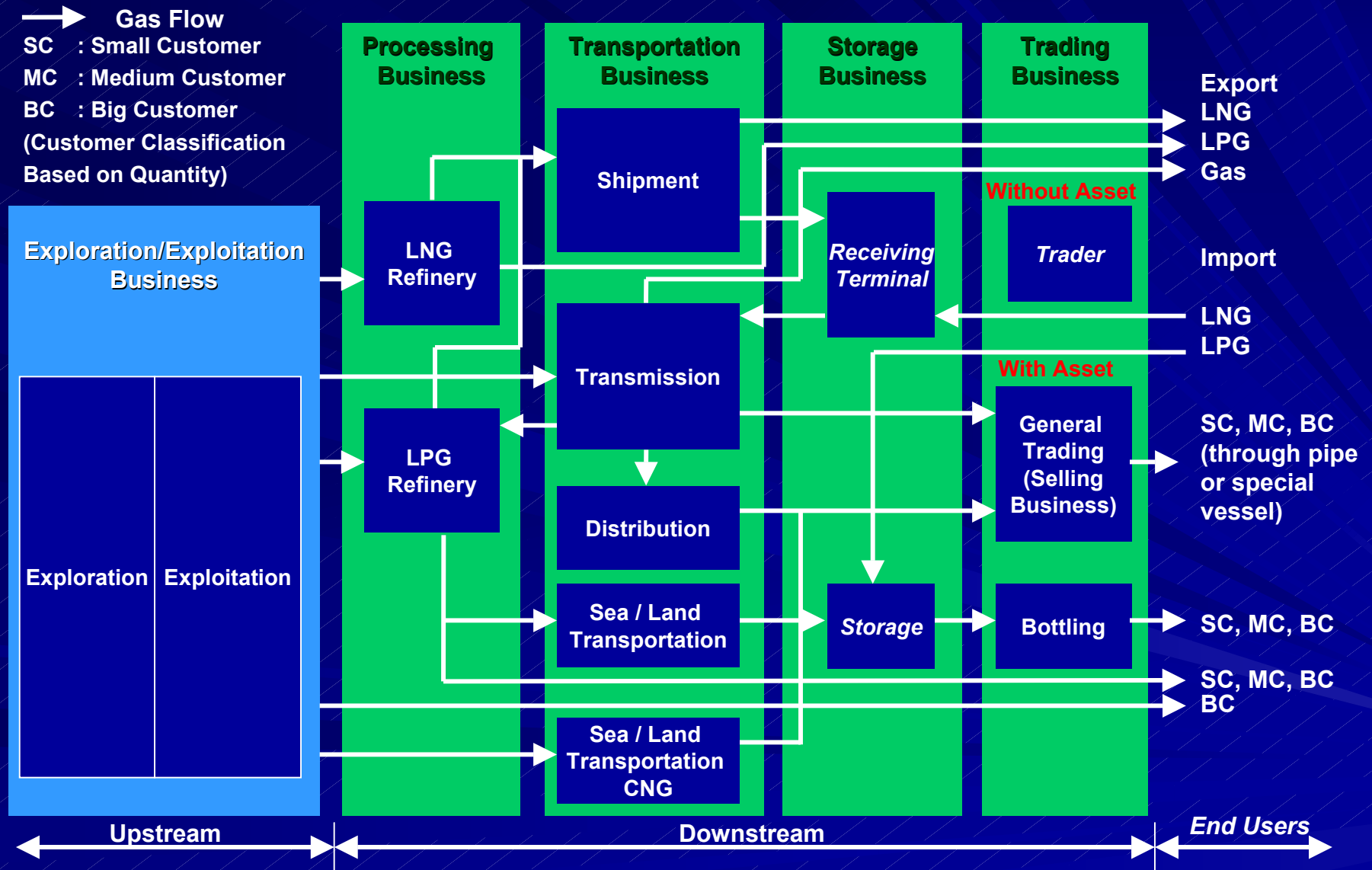
DOMESTIC GAS SALES CONTRACT (2000-2005)



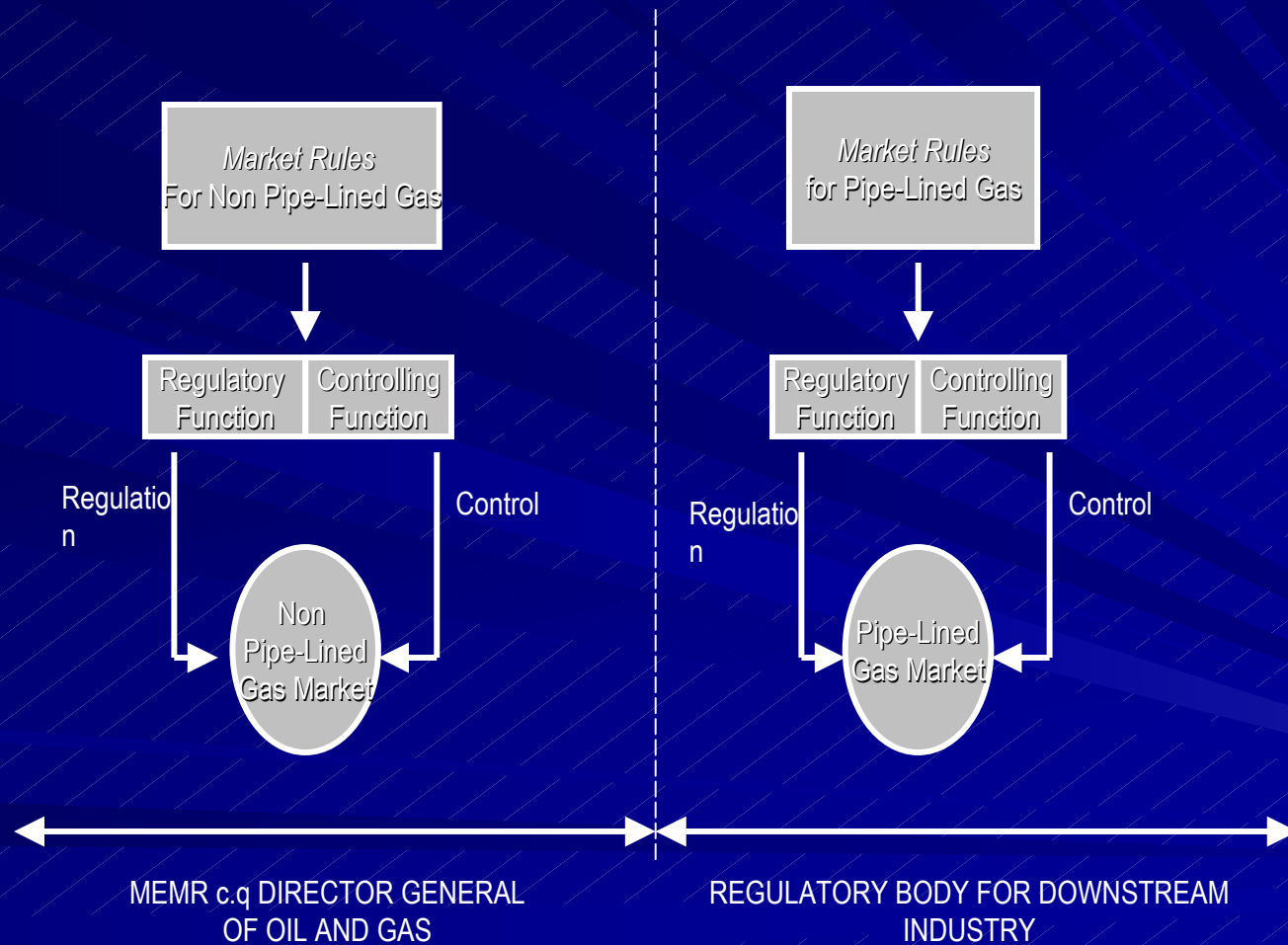
FUNCTIONAL RELATION BETWEEN GOVERNMENT AND NON-GOVERNMENT IN GAS INDUSTRY



BUSINESS SEGMENTS IN GAS INDUSTRY



BUSINESS REGULATION FOR DOWNSTREAM GAS INDUSTRY



KEY ISSUES

- **FUTURE OF GAS INDUSTRY IN INDONESIA**
- **DEVELOPMENT OF LNG BUSINESS IN THE FUTURE**
- **ROLE OF GAS IN INDONESIA'S ENERGY MIX**
- **SHIFTING PARADIGM FOR LARGE GAS RESERVES**
- **THE LOCATION OF GAS RESERVES FROM DEMAND CENTER**
- **GAS INFRASTRUCTURE AND PRICING POLICY**
- **INDONESIA INTEGRATED GAS PIPELINE SYSTEM**
- **TRANS ASEAN GAS PIPELINE (TAGP)**

CHALLENGES FACES GAS INDUSTRY (SOME HAVE BEEN ADDRESSED)

- **OVERLAPPING LAW AND REGULATION**
- **LEGAL CERTAINTY**
- **REGIONAL AUTONOMY**
- **FISCAL REGIMES**
- **CONTRACT SANCTITY**
- **SECURITY ASPECT**

MASTER PLAN ON NATIONAL NATURAL GAS TRANSMISSION AND DISTRIBUTION NETWORK (MPNNGTDN)

INDONESIA



NOTE :

INDONESIAN GOVERNMENT HAS HAD THE PIPELINE MAP ON DETAILED REGION

LEGEND

Category I : Open Access (Unbided)

- Planned Pipeline
 - Development Principle Agreement
 - Principle Agreement, installed
- Planned Distribution Network Region
 - Principle Agreement, installed

Category I: Open Access

- Existed Pipeline
- Planned Pipeline, Bidding
- Existed Distribution Network Region
- Planned Distribution Network Region, Bidding

Category II: Downstream Dedicat

- Existed Pipeline
- Planned Pipeline

Category III: Upstream Dedicat

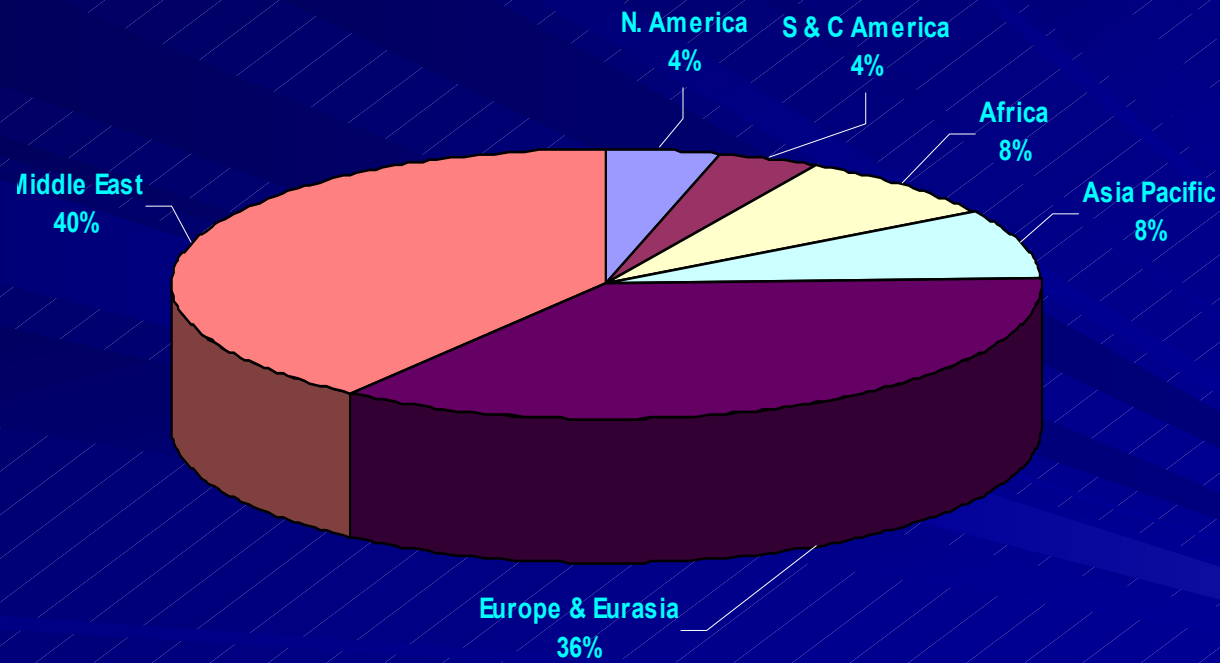
- Existed Pipeline
- Planned Pipeline

- Gas Resource
- Petrochemical, Steel Factory
- ⊙ Customer
- ⊙ Power Plant
- ▲ Compressor
- Region Boundary
- ⊙ Regulator
- ⊙ City
- ⊙ Refinery



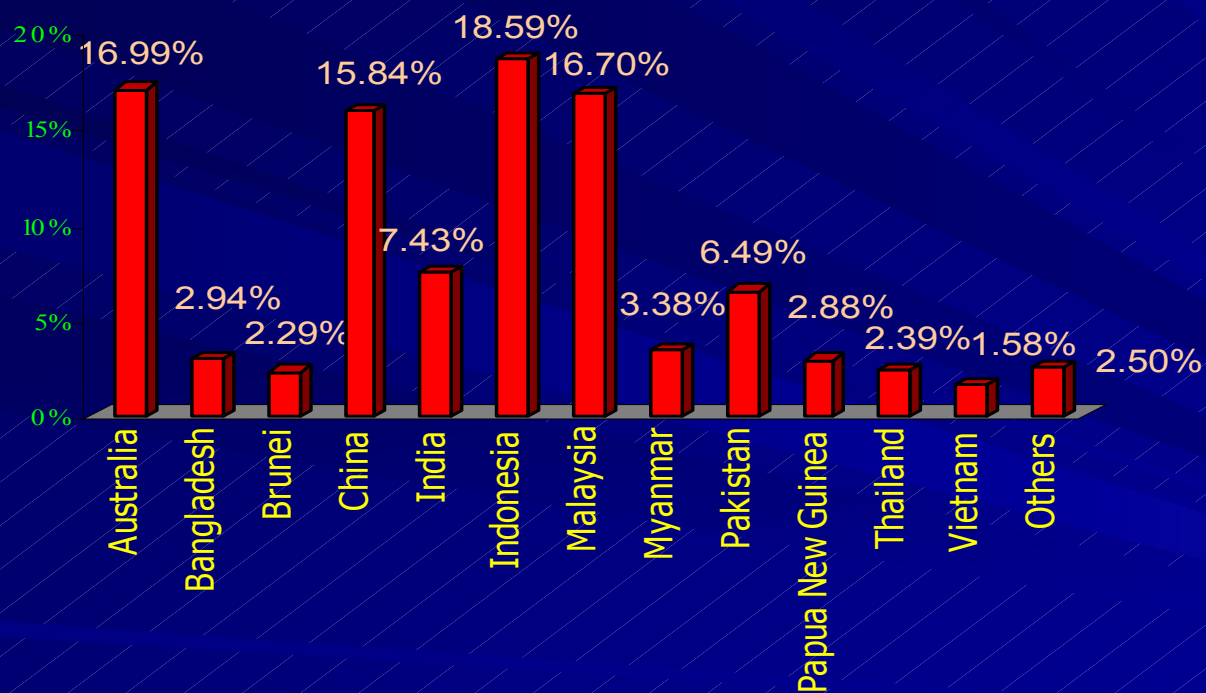
ASIA PACIFIC NATURAL GAS AND LNG

DISTRIBUTION OF PROVED GAS RESERVE IN THE WORLD



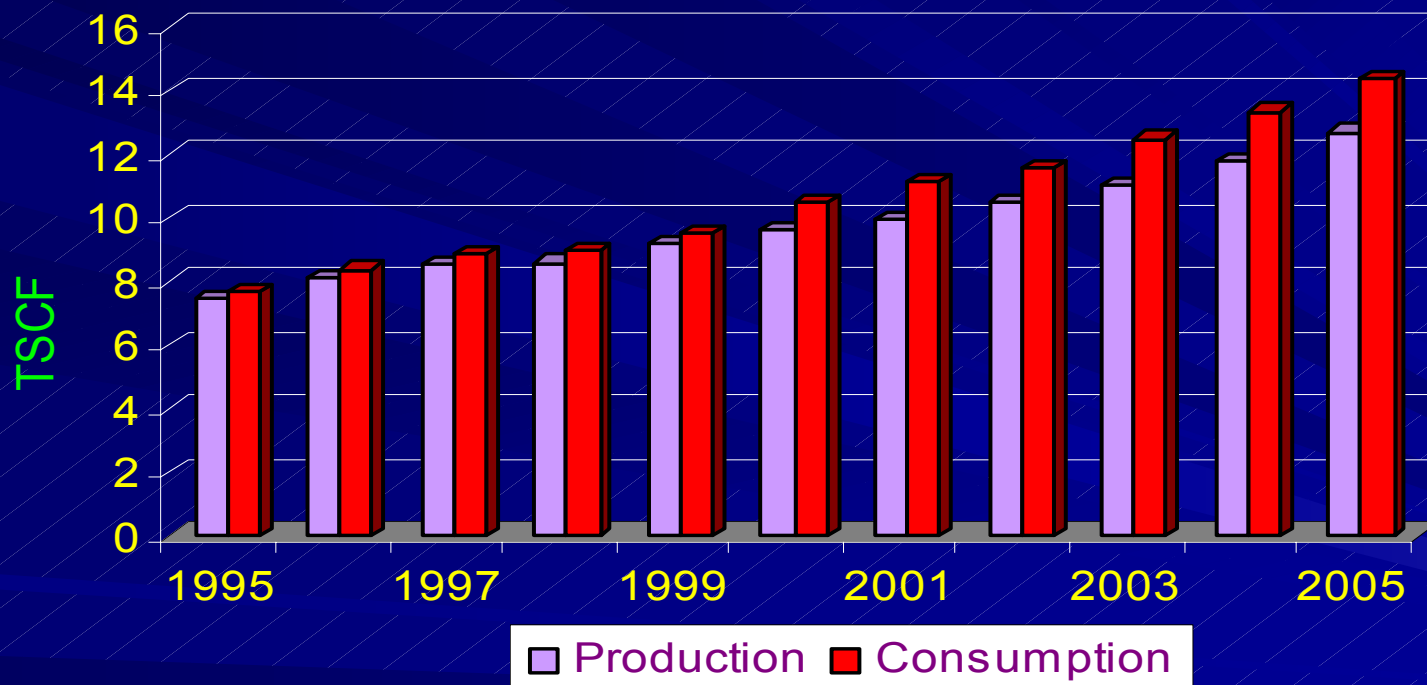
Total reserve : 6,438.1
TSCF

ASIA PACIFIC PROVED GAS RESERVE



Countries	TSC F
Australia	89
Bangladesh	15.4
Brunei	12
China	83
India	38.9
Indonesia	97.4
Malaysia	87.5
Myanmar	17.7
Pakistan	34
Papua New Guinea	15.1
Thailand	12.5
Vietnam	8.3
Others	13.1
TOTAL	523.9

GAS PRODUCTION AND CONSUMPTION IN ASIA PACIFIC (1995 – 2005)



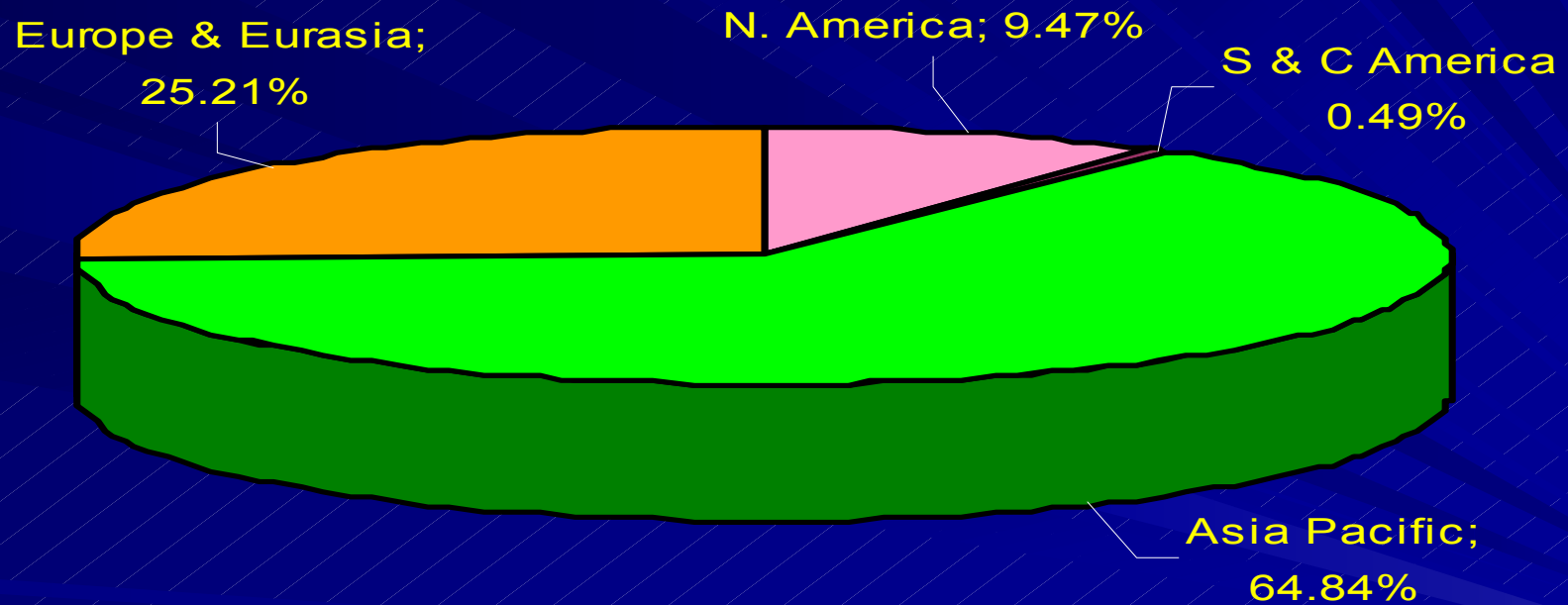
Source :

**BP Statistical Review
of World Energy 2006**

ASIA PACIFIC GAS PRODUCTION AND CONSUMPTION

- ✦ Gas consumption has been greater than gas production
- ✦ Some countries (India, Japan, South Korea and Taiwan) export gas as LNG from Middle east and Africa
- ✦ During the last ten years the average of gas production is about 9.76 TSCF and the gas consumption is about 10.62 TSCF
- ✦ Compare to 1995, now the production increases 5.21 TSCF (69.4 %) and the consumption increases 6.68 TSCF (87 %)
- ✦ Japan is the biggest consuming countries with amount of about 2.86 TSCF (20 % of total Asia Pacific), followed by China about 1.7 TSCF (11.6 % of total)
- ✦ Indonesia the biggest gas producer in this region consumes about 1.4 TSCF (9.6 %), since the oil fuel still subsidized by the Government

LNG TRADE IN THE WORLD YEAR 2005



**Total trade : 137.83 Million
Ton**

Source :
BP Statistical Review of
World Energy 2006

ASIA PACIFIC LNG TRADE MOVEMENT

**MILLION
TON**

Destination	Source from										Total
	Australia	Brunei	Indonesia	Malaysia	Oman	Qatar	UAE	Algeria	Egypt	USA	
India	0.12				0.06	4.23					4.41
Japan	9.52	6.10	15.32	12.88	0.91	6.10	4.93	0.06		1.34	55.71
South Korea	0.85	0.58	4.76	4.64	4.32	6.07	0.06		0.22		22.22
Taiwan	0.29		3.32	2.99	0.12						7.01
Total Export	10.78	6.68	23.40	20.51	5.41	16.40	4.99	0.06	0.22	1.34	89.79

LNG EXPORT CAPACITY

Country	Project	Capacity Mtpa	Train No	
ASIA PASIFIC				
Ö	Alaska US	Kenai	1,4	2
Ö	Australia	North West Self	11,7	4
Ö	Brunei	Lumut	7,2	5
Ö	Indonesia	Arun	12,8	6
		Bontang	22,2	8
		Tangguh *)	7,6	2
Ö	Malaysia	MLNG.1	7,6	3
		MLNG.2	7,8	3
		MLNG.3	6,8	2
		SUB TOTAL	85,1	35
MIDDLE EAST				
Ö	Oman	Oman LNG	6,6	2
Ö	Qatar	Qatar Gas	8,9	3
		Ras Gas	11,3	3
Ö	UEA	Gas Island	5,7	3
		SUB TOTAL	32,5	11
		TOTAL	110,0	44

*) Under Construction

ASIA PACIFIC LNG TRADE

✦ Imports to grow strongly

Asia Pacific account for around two thirds of world LNG trade. In the next ten years LNG imports in this region are projected to nearly double

✦ Growth in existing markets

The existing market (Japan, Korea, Taiwan and India) will continue to account for the majority of LNG imports

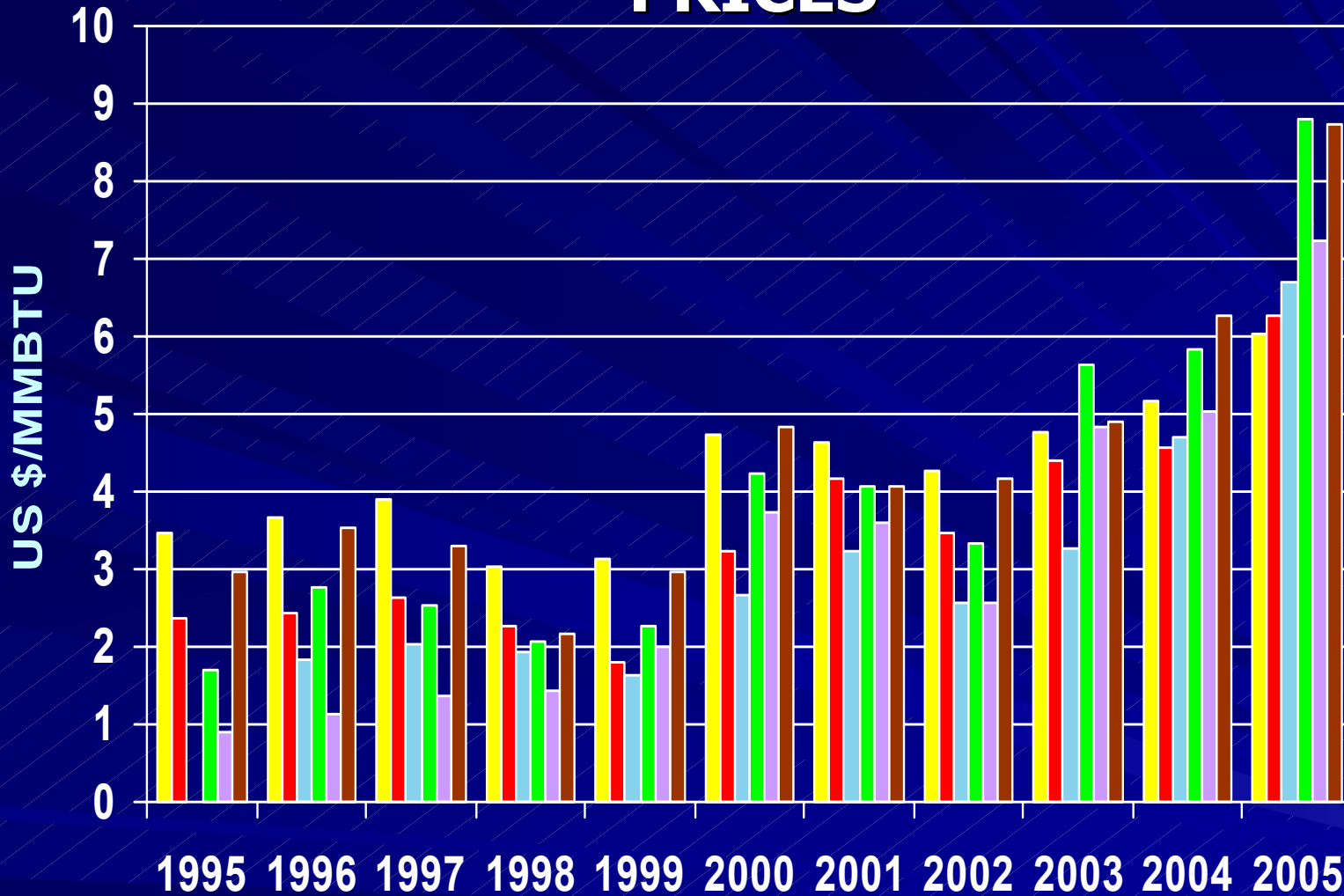
✦ New regional markets for LNG

China is expected to be a key market for LNG in the coming decade (Guangdong and Fujian LNG terminal is still underconstruction)

LNG PRICES

- ✦ Long term LNG contracts are still linked to oil or oil product prices
- ✦ The strong rise in oil price gives big impact on LNG prices
- ✦ The average price of LNG (CIF) import from Indonesia into Japan rose to US \$ 6,84/MMBTU, Korea US\$ 9,09/MMBTU and Taiwan US\$ 9,06/MMBTU
- ✦ Asia Pacific importers have attempted to reduce the impact of oil price fluctuations by introducing S. curve pricing formula

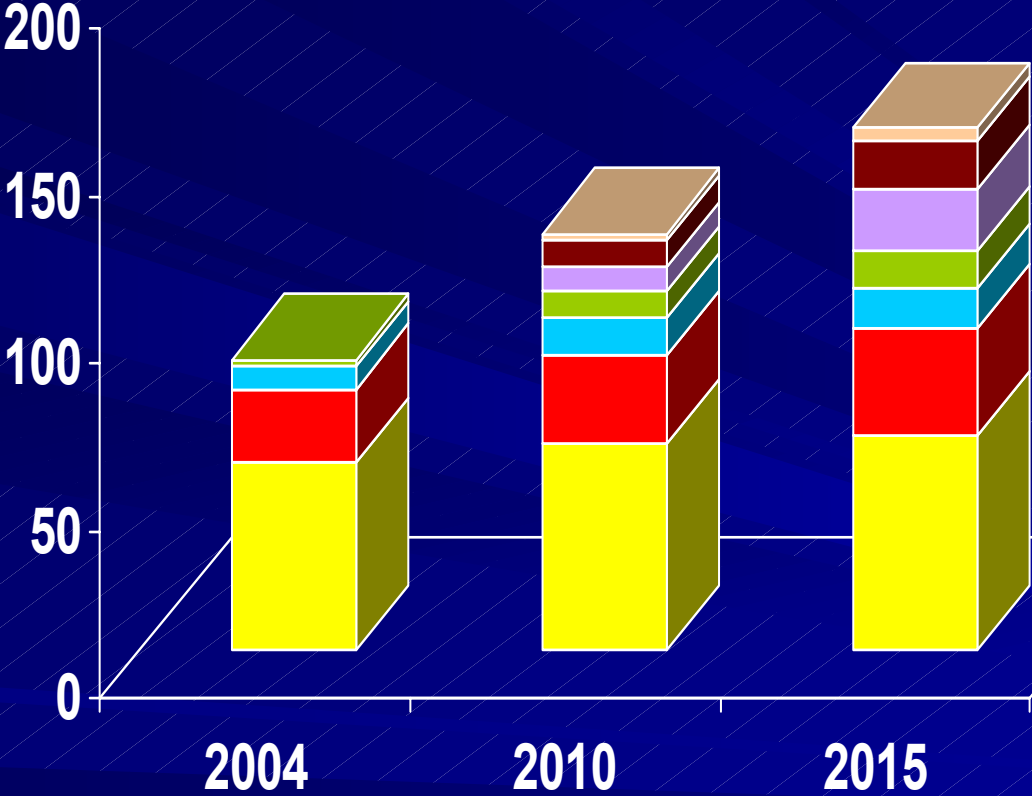
PRICES



Source :
BP Statistical
Review of World
Energy 2006

■ LNG Japan (CIF)
 ■ European NG (CIF)
 ■ UK NG
 ■ USA (Henry Hub)
 ■ Canada
 ■ Crude oil OECD

PROJECTED LNG IMPORTS IN ASIA PACIFIC (MILLION TON)



Negara	2004	2010	2015
Japan	56.2	61.8	64.1
Korea	21.8	26	32
Taiwan	6.9	11.1	12.1
India	1.9	8.1	11.2
China		7.7	18.3
California/Baja		7.5	14
Other		2.2	3.9

■ Japan
 ■ Korea
 ■ Taiwan
 ■ India
 ■ China
 ■ California/Baja
 ■ Other

THANK YOU