



GAS
MALAYSIA

INTRODUCTION TO GAS SUPPLY SYSTEM FOR RESIDENTIALS AND COMMERCIALS

Table of Contents

- Introduction to Gas Malaysia
- LPG Characteristics
- NG Characteristics
- Supply Concept
- Codes and Standards
- GMB Commitment

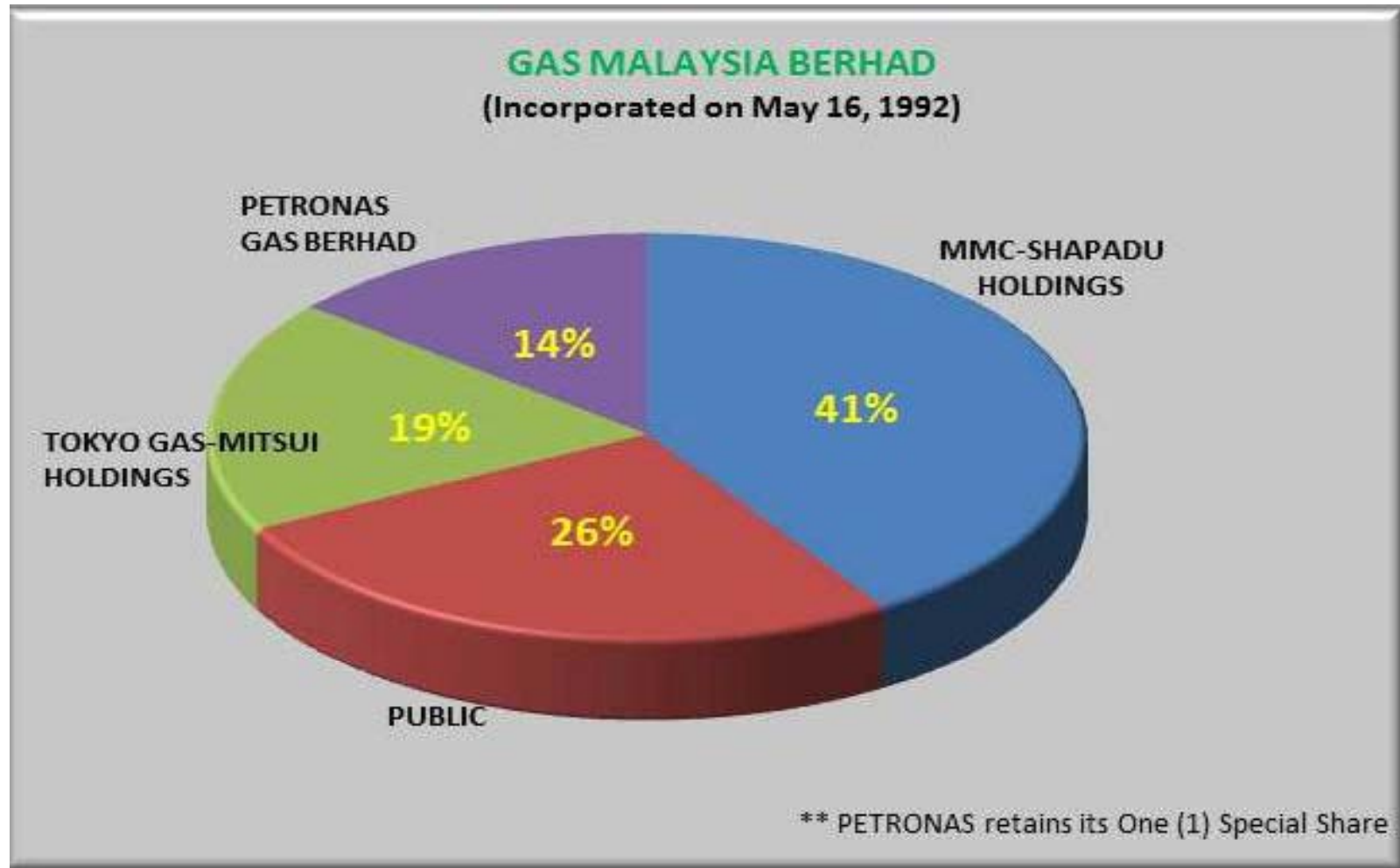


INTRODUCTION TO GAS MALAYSIA

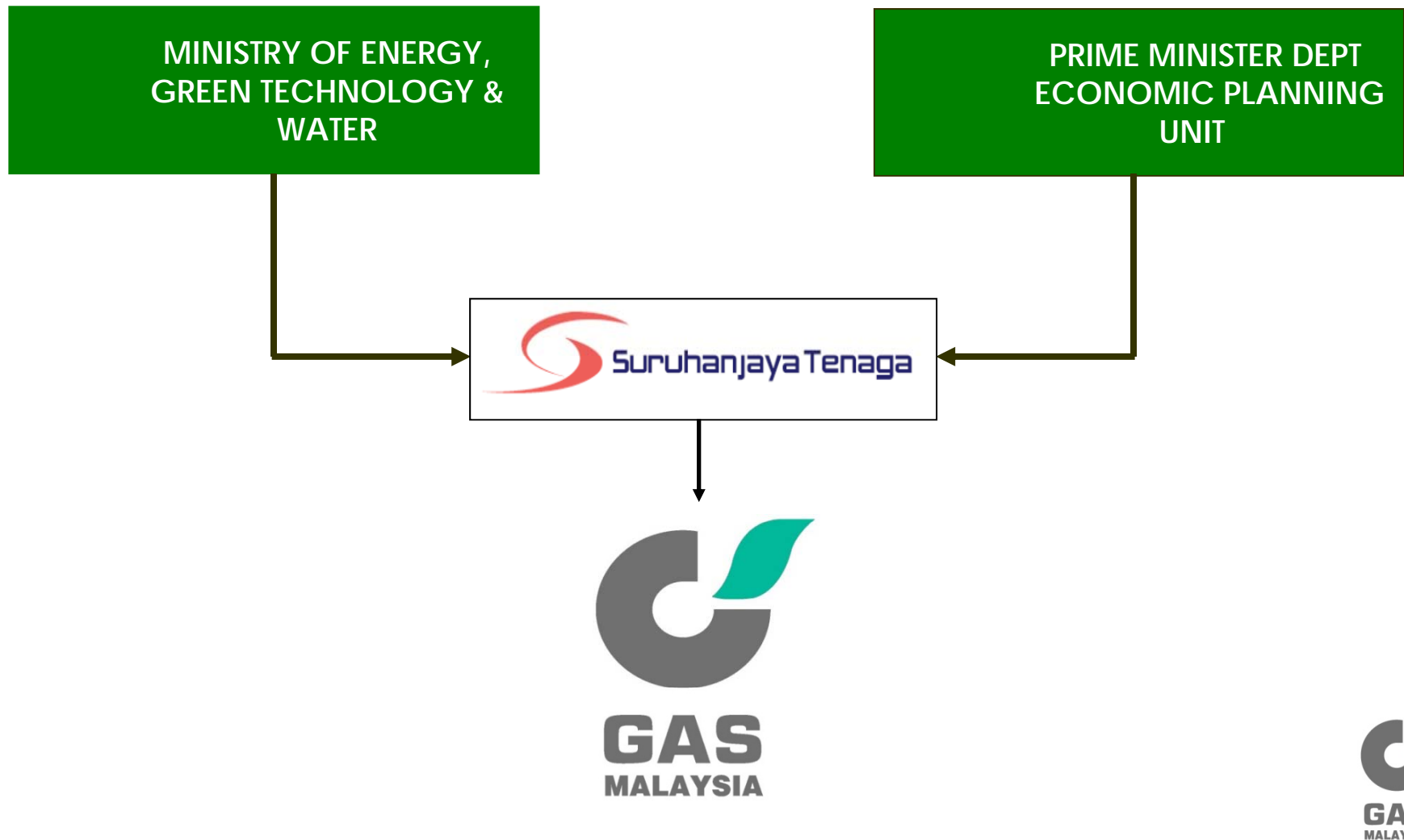
About us

- Incorporated on May 16, 1992
- Licensed to distribute natural gas
- In 2000 was Licensed to distribute LPG
- Distribute NG and LPG through pipeline within peninsular Malaysia

Shareholders



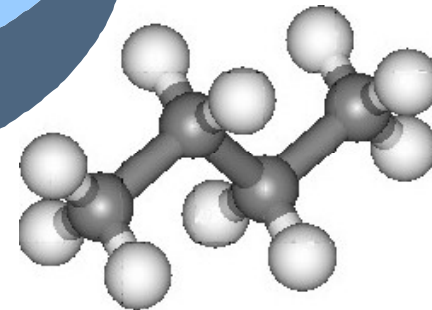
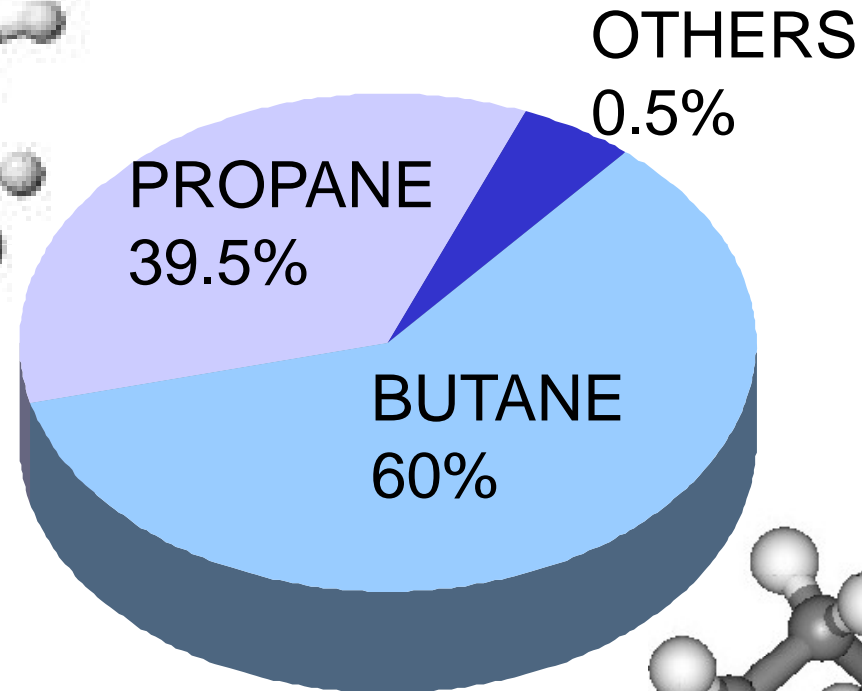
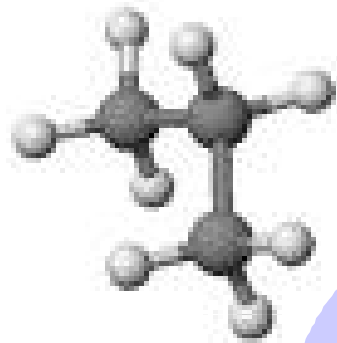
Regulatory Framework





LPG COMPONENTS & CHARACTERISTICS

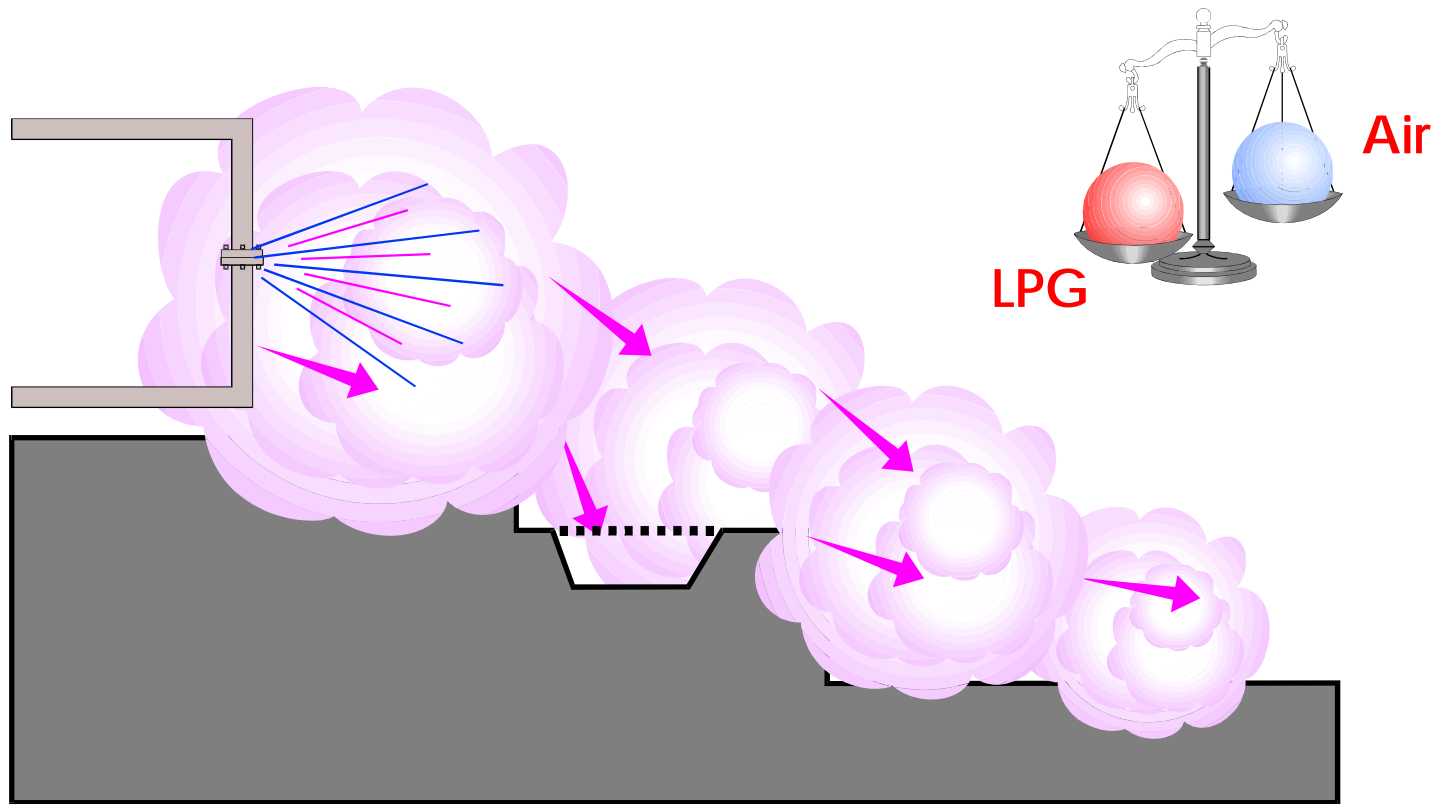
LPG Components



LPG Characteristics

- Tasteless
- Colorless
- Originally odorless
- Non-toxic

LPG Characteristics

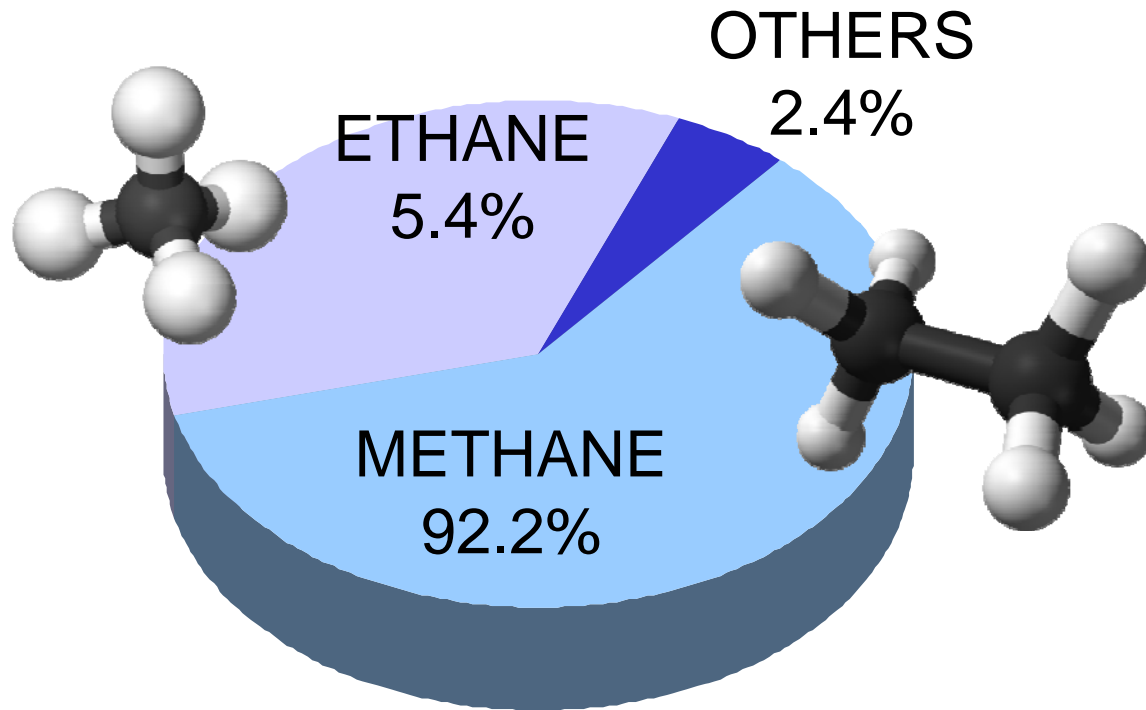


Heavier than air (SG=1.92)



NG COMPONENTS & CHARACTERISTICS

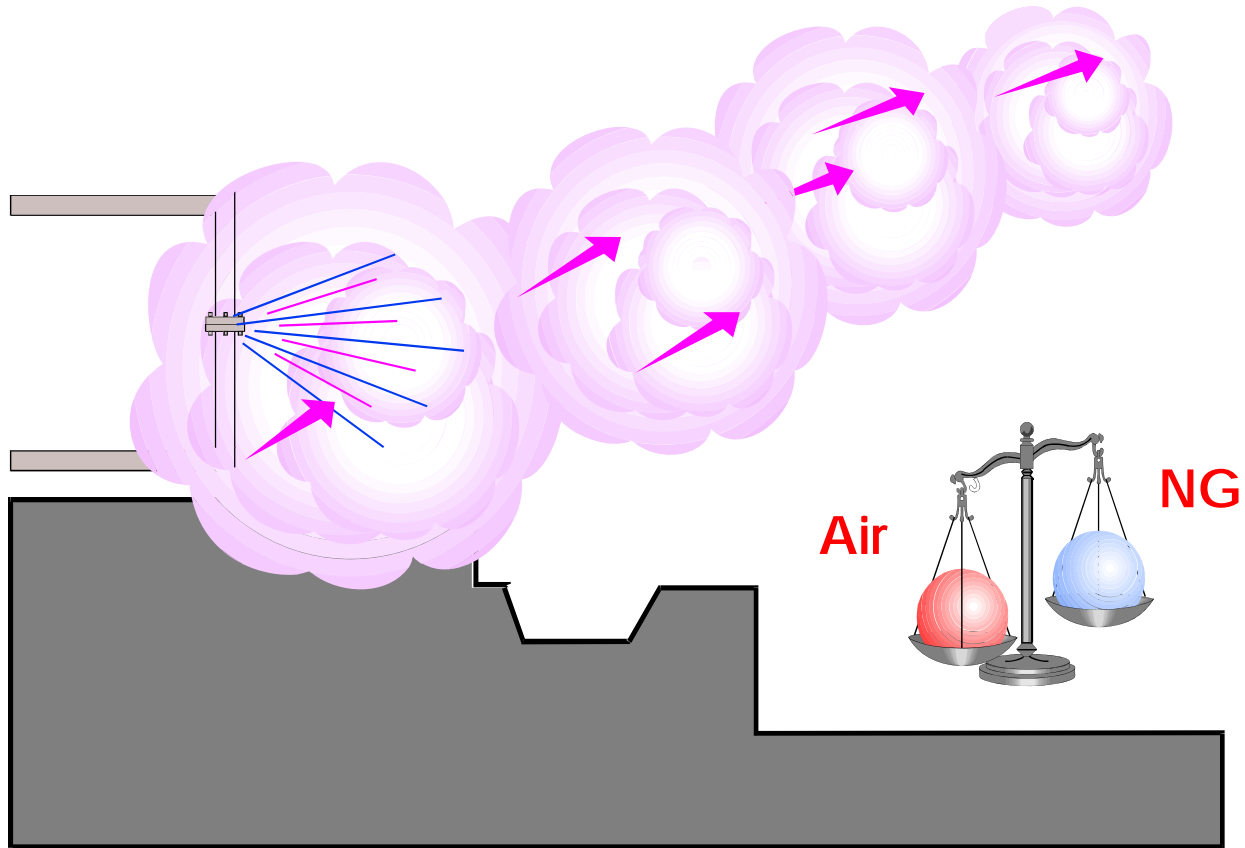
NG Components



NG Characteristics

- Tasteless
- Colorless
- Originally odorless
- Non-toxic

NG Characteristics



Lighter than air (SG = 0.61)

LPG and NG Characteristics

Description	LPG	NG
Components	Mainly propane & butane	Mainly methane
Specific gravity (air = 1.0)	1.92	0.61
Flammability Limit	2% - 10%	5% - 15%
Auto ignition temperature	510°C	630°C



SUPPLY CONCEPT

LPG Supply Concept

MANIFOLD SYSTEM



5 psi



70 psi – 100 psi



1ST STAGE REGULATOR

5 psi

2ND STAGE REGULATOR



0.5 psi



METER



BULK TANK

RESIDENTIAL

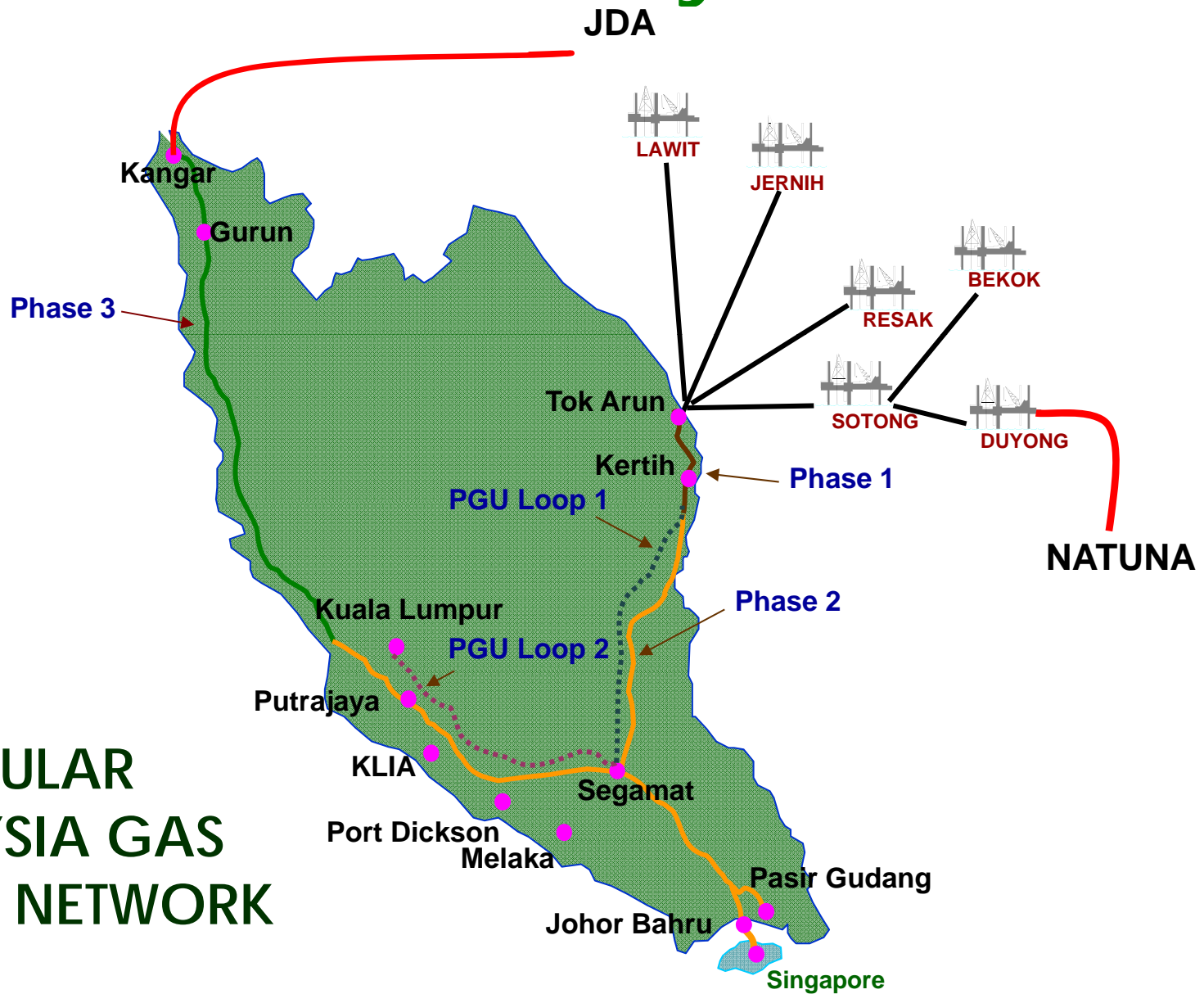


LPG Bulk Tank

LPG Cylinder Manifold



NG Transmission System



**PENINSULAR
MALAYSIA GAS
SUPPLY NETWORK**

NG Distribution System

1000 psig

PGU

City Gate



Odorizer Station



Feeder Line
260 psig

District Station



Distribution Line
60 psig

Regulating Station



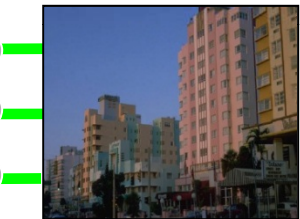
4.3 psig

Internal Piping

M

M

M



Multiple End-users/
Shopping Complexes

Distribution Line
60 psig

Area Station



Internal Piping

0.43 psig

M



Residential

M = METER



NG Station



CODES AND STANDARDS

No	Piping Section	Codes, Standards and Engineering Practice
1.	All Sections	Gas Supply Act 1993 Gas Supply Regulations 1997
2.	Main Pipelines and Stations	ASME B31.8: 2003 – Gas Transmission and Distribution Piping Systems
3.	LPG Storage	MS830: 2003 - Code Of Practice For The Storage, Handling And Transportation Of Liquefied Petroleum Gases
4.	Internal Piping	MS930: 1986 - Code Of Practice For The Installation Of Fuel Gas Piping Systems And Appliances Guidelines on Domestic Gas Piping System (Energy Commission)



GMB COMMITMENT

GMB Objective

To ensure supply is

- Safe
- Stable
- Continuous

Key Responsibility

- **Daily Operations**
 - **Pipeline Inspection and surveillance**
 - **Facilities maintenance**
 - **Third party supervision**

Key Responsibility...*continuation*

- Troubleshoot & Repair
- Emergency Response
- Operations Control Center

GMB Services to Customers

- Attend to emergency / complaint
- Assist in technical matters
- Ensure compliance with regulations

Call attended: Supply Interruption

Item	Category	Number of calls
1.	Due to system failure/misoperation at GMB's facilities	12
2.	Due to third party	50
3.	Due to customers	136
	Total	198

Jan – Sep 2013



THANK YOU

Call attended: Gas Leak

Item	Category	Number of calls
1.	Due to system failure/misoperation at GMB's facilities	107
2.	Due to third party	2
3.	Due to customers	56
	Total	165

Jan – Jun 2013

Call attended: Others

Item	Category	Number of calls
1.	Gas release	18
2.	Fire	5
3.	High Pressure	3
4.	Low Pressure	33
5.	False alarm	143
6.	Others	7
	Total	209

Jan – Jun 2013