



Please write on a piece of paper

- 1. Name**
- 2. Hometown**
- 3. Why you choose chemical -gas engineering course**
- 4. What is your expectation from this 4-years course**
- 5. What do you see yourself after 5 years (in year 2019)**



CHALLENGES IN THE CHEMICAL AND GAS INDUSTRIES

Presenter: Dr. Zalilah Sharer

© 2014 Gas Engineering Department

Faculty of Petroleum and Renewable Energy Engineering

28 October 2014

Objective

Student will gain an exposure on their upcoming career in chemical and gas engineering industry during academic calendar (2014-2018) and after graduation in year 2018

Curriculum for Bachelor of Engineering (Chemical-Gas)

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SEMESTER 1	SEMESTER 2
Introduction to Engineering	Principles of Chemical Processes I
Engineering Mathematics I	Material Engineering
Statics	Engineering Mathematics II
Electrical Technology	Organic Chemistry: Functional Groups
English for Academic Communications	Asian and Islamic Civilization 1 (TITAS I)
Engineering Drawing	Ethnic Relations
Seminar	Co-Curriculum I

SEMESTER 3	SEMESTER 4
Principles of Chemical Processes II	Chemical Engineering Thermodynamics
Advanced English for Academic Communication	Co-Curriculum II
Combustion Engineering and Gas Utilization	Transport Processes
Differential Equations	Analytical Chemistry for Engineering
Organic Chemistry Practical	Chemical Engineering Computation
UHAS Elective	Islamic Institution @ Current Issues
Fluid Mechanics	Fluid Mechanics Laboratory
	Thermodynamics and Material Engineering Laboratory

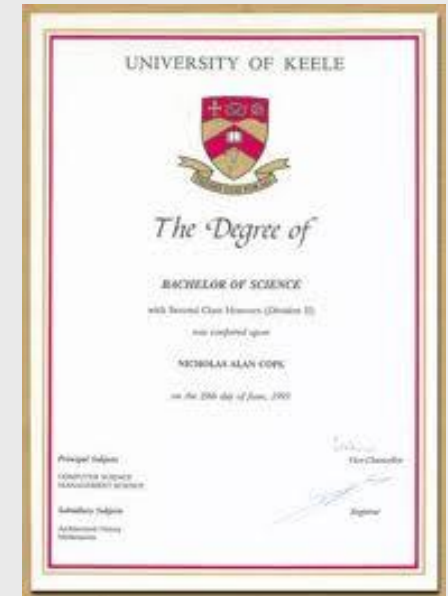
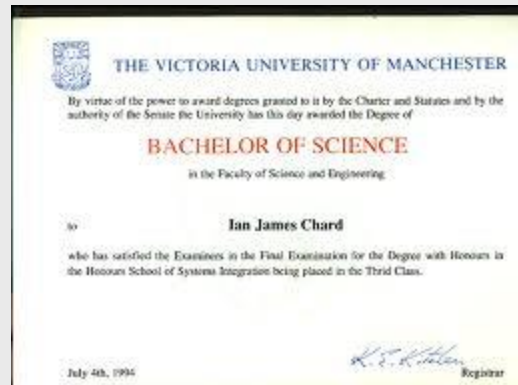
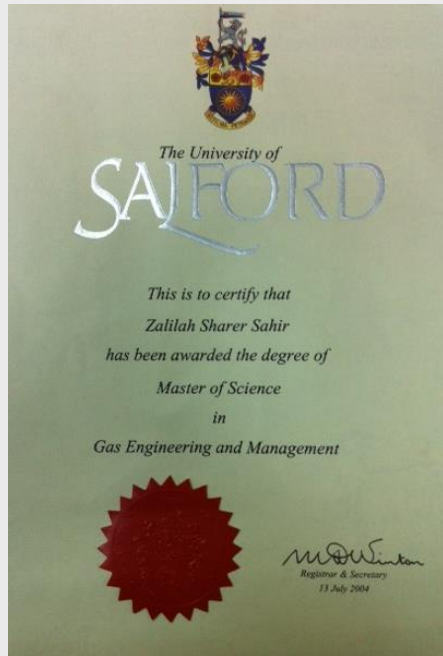
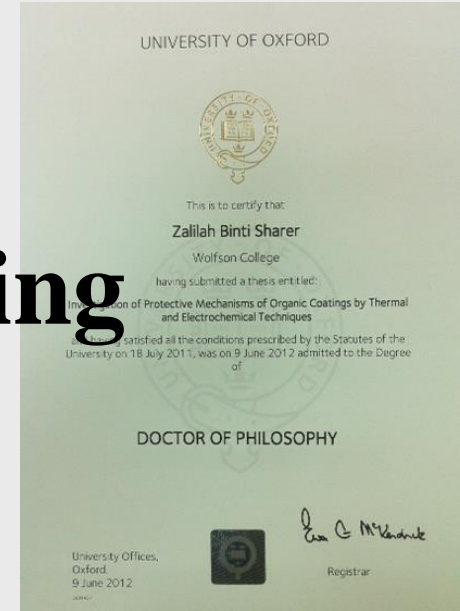
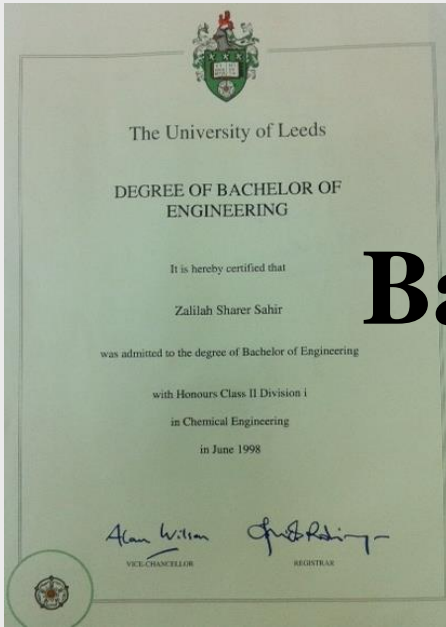
SEMESTER 5	SEMESTER 6
Physical Chemistry for Engineers	Process Control & Instrumentation
Analytical Chemistry Practical	Environmental Engineering & Sustainability
Combustion Engineering & Gas Utilization Laboratory	Separation Process Laboratory I
Gas Processing and Liquefaction	Separation Process II
Separation Processes I	Gas Engineering Elective
Chemical Reaction Engineering	Engineering Economics and Project Management
Gas Transmission and Distribution	Industrial Training

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SEMESTER 7	SEMESTER 8
Undergraduate Project I	Entrepreneurship and Enterprise Development
Separation Process Laboratory II	English Elective
Gas Flow System Laboratory	Plant Design Project
Safety and Health in Chemical Industry	Undergraduate Project II
Plant Design	Gas Engineering Seminar
Storage and Reticulation System	General Elective
Process Control Laboratory	Pollution Control Reaction Laboratory

Your Degree

Bachelor of Engineering (Chemical-Gas)



A little bit info about this course

Gas engineering

processing, transmission, distribution, and gas utilization

Chemical engineering

process of converting resources into value-added products using the application of basic sciences and engineering principles to the development, design, operation and maintenance of processes.

A little bit info about this course

Chemical engineering

Expertise in process design, operation, project supervising, maintenance, research and management is very important in ensuring the success of these activities.

A little bit if idea on the main task

Chemical – Gas Engineer

The main task of chemical and gas engineers is to ensure that downstream activities are carried out optimally, economically, safely, and without the effect of pollution on the surroundings.

A little bit info about this course

Gas engineering

processing, transmission, distribution, and gas utilization

Chemical engineering

process of converting resources into value-added products using the application of basic sciences and engineering principles to the development, design, operation and maintenance of processes.

What Some Chemical Engineers Do for a Living?

- Work for large chemical, petrochemical, pulp and paper, plastic and other materials, or textile manufacturing firms.
- Work for companies manufacturing specialty chemicals such as pharmaceuticals, paints and dyes, and cosmetics.
- Work for companies that manufacture integrated semiconductor circuits.

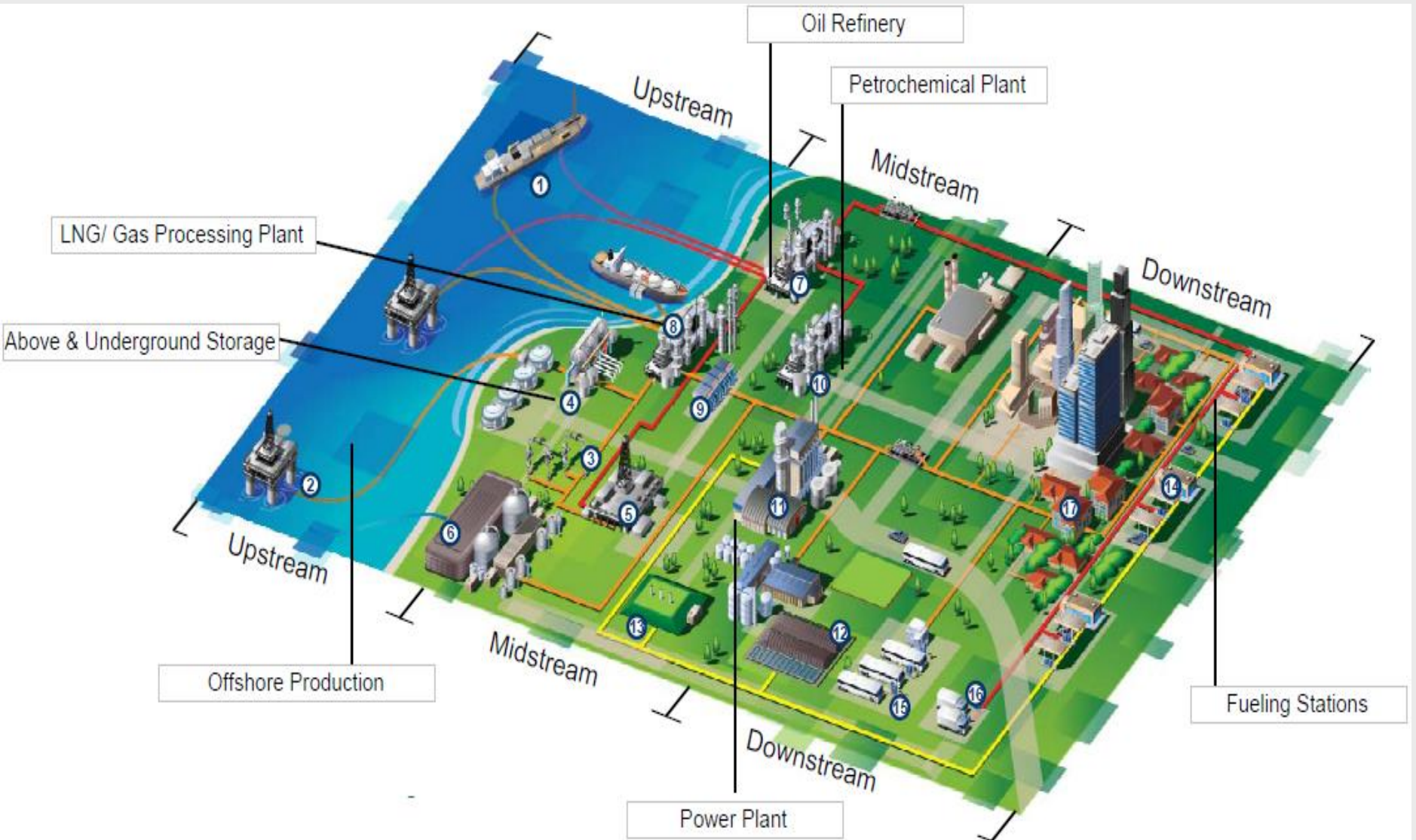
What Some Gas Engineers Do for a Living?

- Work for large gas processing plant – Kerteh, Melaka
- Work for petroleum companies – Shell, Petronas, Schlumberger,
- Work for government agencies – Energy Commission, University, DOS, NIOSH
- Build their own company- contractor/consultation dealing with gas related stuff - pipeline and integrity



Malaysia's Oil & Gas Industry - An Overview

Oil & Gas Industry Overview – Upstream, Midstream, and Downstream



Oil & Gas Industry Hierarchy and Status

PETRONAS



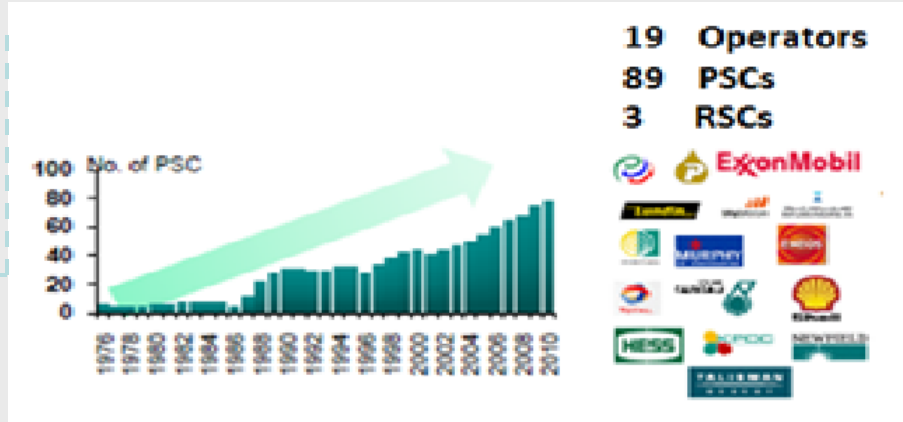
Regulator

Operators

Main (Umbrella) Contractors

Sub-Contractors

Specialist Consultants, Vendors, Agents, ..

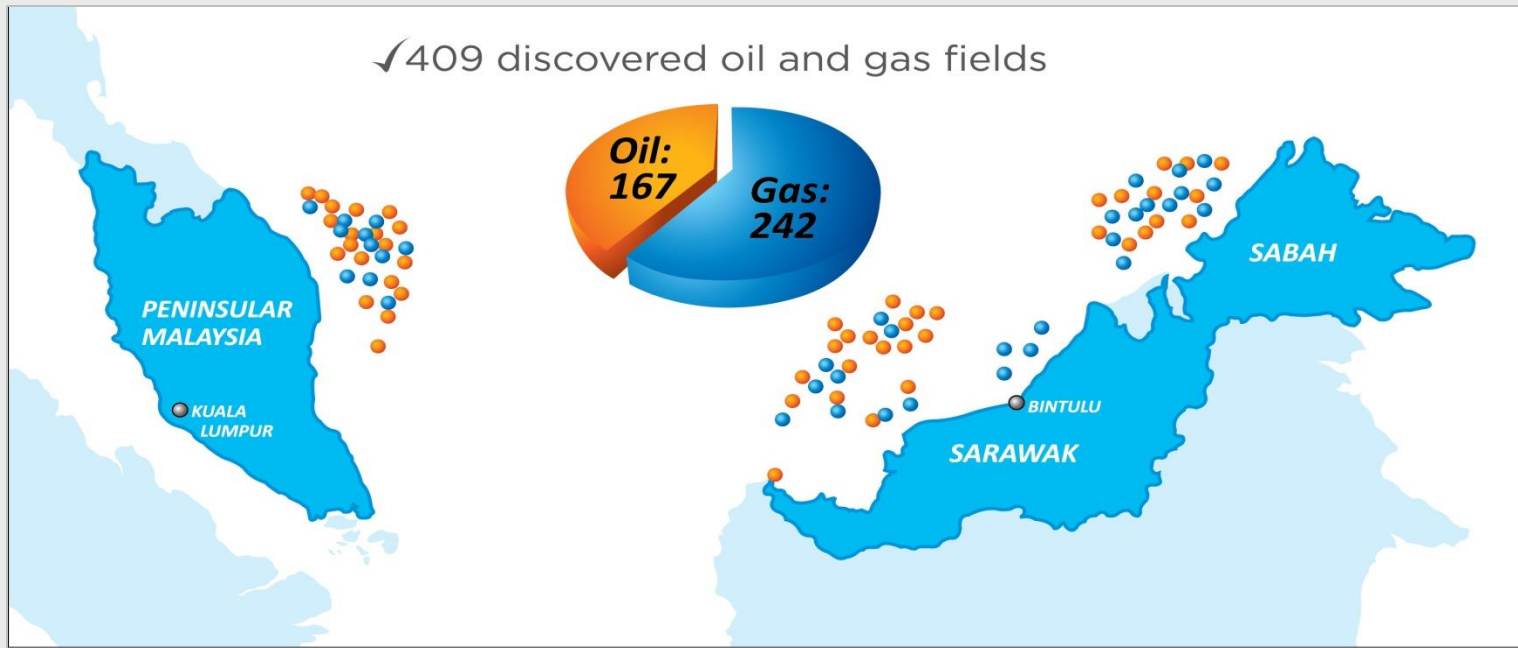


3500+ registered companies with PETRONAS to date



ptop Gardener

Malaysia Oil & Gas Fields & Reserves



Malaysia Crude Oil and Condensates and Gas Resources (as of 1.1.2010)

Gas Resources: 14.76 billion boe (88.59 Tscf)

Oil Resources: 5.80 billion bbls

Resources
life

GAS: 38

OIL: 24

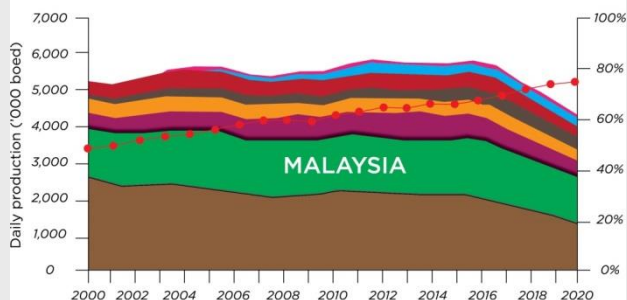
✓ Malaysia's crude oil and gas resources stood at 21 billion boe

Malaysia's large reserves makes it an ideal base for expanding into Asia's O&G markets

Remaining Reserves by Country at 1st January 2011 (59,629 mmbobe)



South East Asia Total Production (2000-2020)



International O&G companies operating in Malaysia



Domestic O&G companies

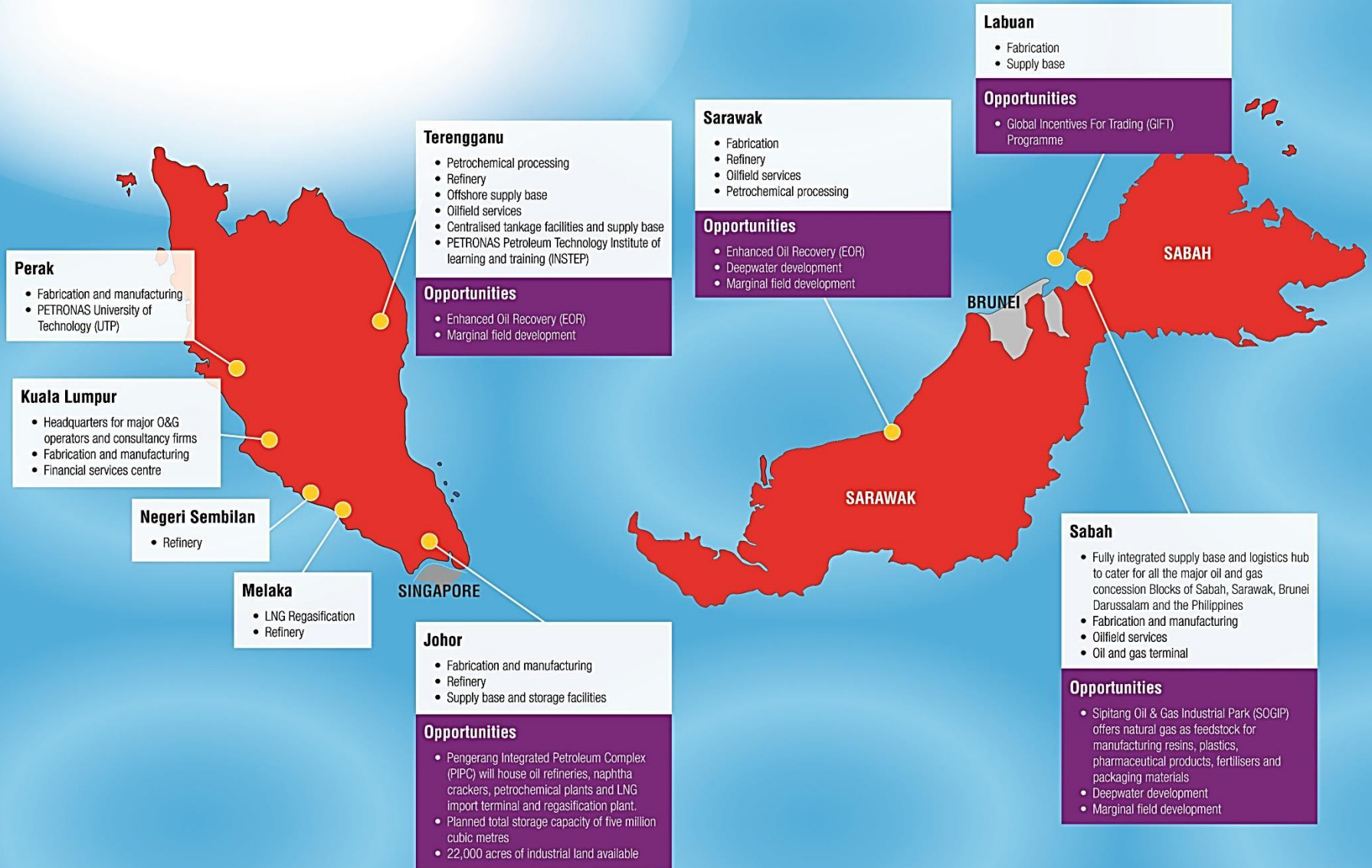


* Non-exhaustive list

O&G companies have established a strong presence in Malaysia. New opportunities in enhanced oil recovery (EOR), marginal oil fields and deepwater developments have attracted more global companies to use Malaysia as their base and to form joint ventures or partnerships with domestic companies

Oil & Gas opportunities in Malaysia

Upstream and Downstream



Realizing strategic growth in downstream activities



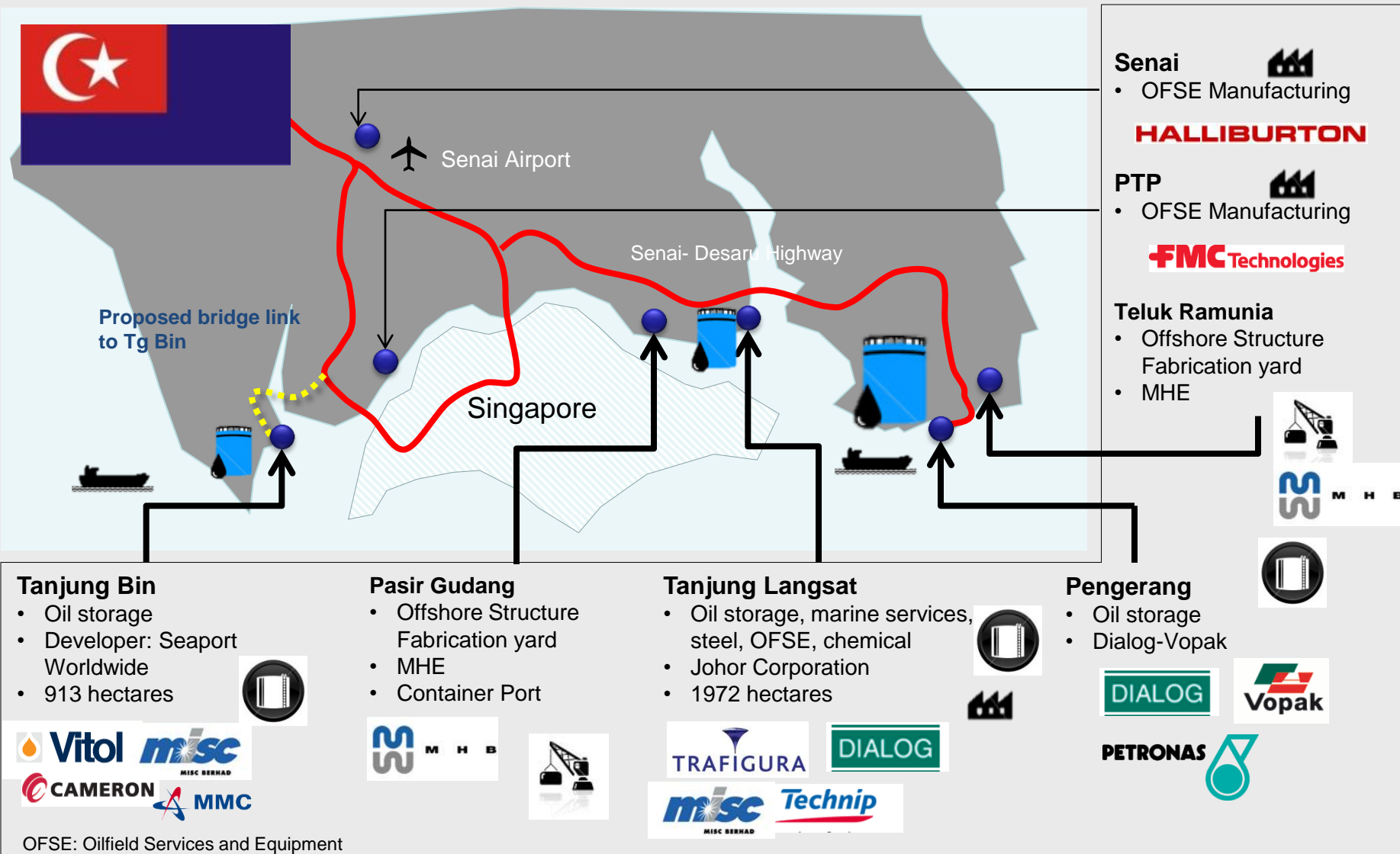
Opportunity

- There is a **demand to build storage capacity** for the region
- Facility would **complement Singapore**, which currently is the only major independent terminal and storage facility in South East Asia
- Potential for an **oil trading business**, future development of **downstream industry** including refinery and oil based petrochemical complex, and **LNG regas terminal**

Singapore

- Independent Storage Capacity **10 Million m³**
- **Limited land** for new **major** storage investments

Quick overview on existing Oil & Gas activities in Johor



OFSE: Oilfield Services and Equipment

Working in Group of 4/5

Please write on a piece of paper using materials given;

- 1. Summarize the content regarding using your degree – chemical engineering from the article given focusing on the job task by the chemical engineers.**
- 2. Choose 3 profiles and state their position in the respective company, job task and their achievement.**

Question?



THE END

Thank You for the Attention
