



NGV Cylinders Updates

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Cylinder Inspection Forum ▶ 27th February 2008

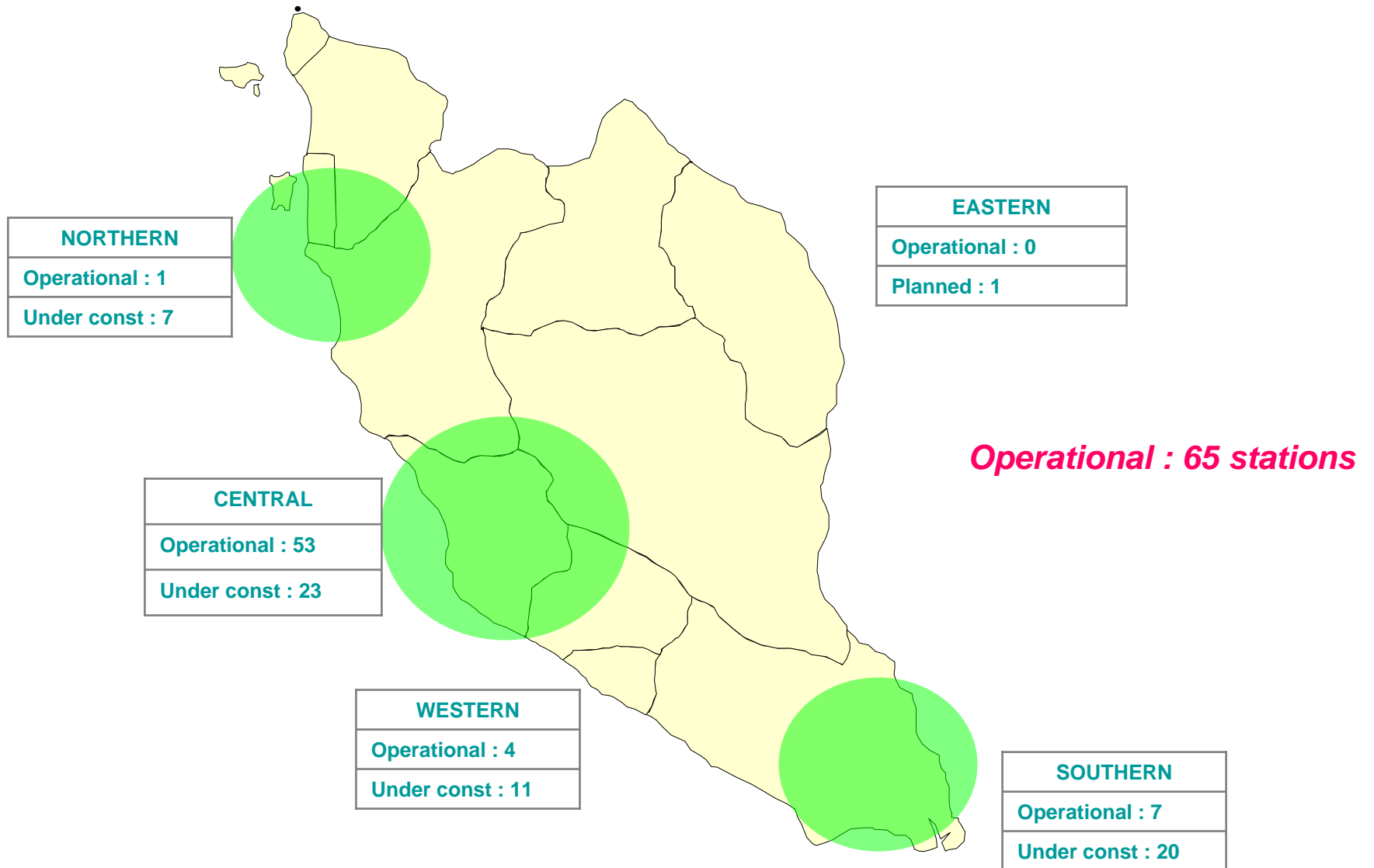
"Inspiring Our People, Aspiring to be the Best"

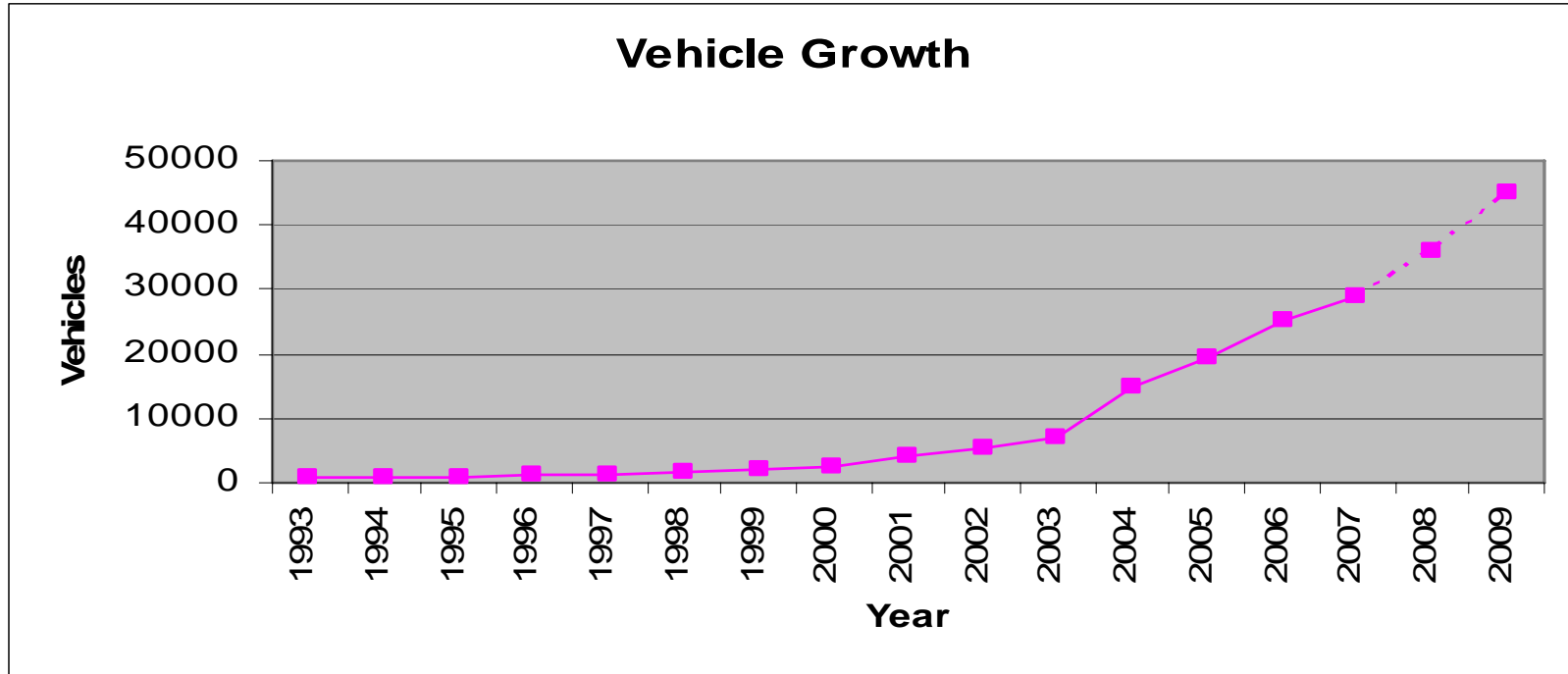




1. **UPDATES**
2. **NGV CYLINDERS IN MALAYSIA**
3. **WAY FORWARD**
4. **Q&A**

NGV STATION UPDATES





- As of January 2008 there are a total of 30,647 vehicles (inc. 125 buses)
- Vehicle growth at an average of 25% per year over the last 5 years
- Average conversion of 550 vehicles per month
- Based on 25% per year projection – 45,000 vehicles by 2009



NZS 5454 - Type 1

FABER

CILBRAS

ISO 11439 - Type 1

EKC

NK

INFLEX

MAT

ISO 11439 - Type 2

FABER

NK

SINOMA

BTIC

MCS

ISO 11439 – Type 4

LINCOLN



Estimated No. Of NGV Cylinders On The Road (as of January 2008)

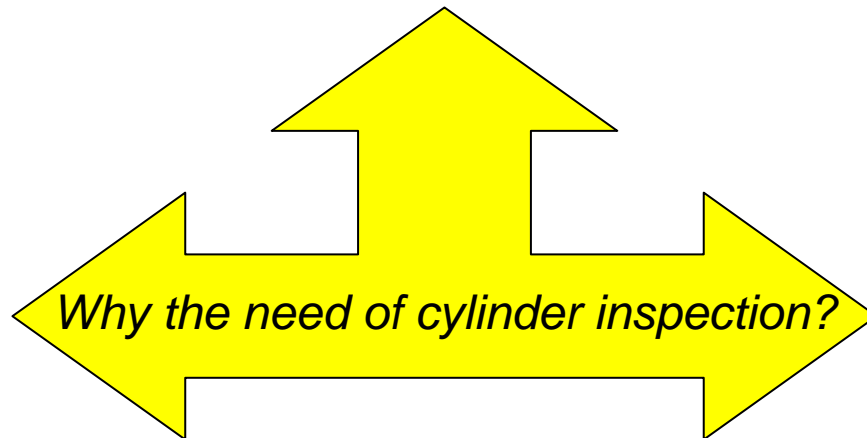
TOTAL Cylinders on the road	- 33,158 cylinders
Total NZS 5454 cylinders on the road	- 9,500 units
NZS 5454 due for re-certification	- 4,500 units
Cylinders more than 10 years	- 1,000 units
Cylinders between 5 – 9 years	- 3,500 units
Total ISO 11439 cylinders on the road	- 23,658 units
ISO 11439 due for visual inspection	- 10,780 units



Safety

Requirements

-All CNG cylinder standards requires periodic inspection



Why the need of cylinder inspection?

Preventive maintenance

*-Detection on cylinder defects
- Detection of tempering with PRD*



MS 1096

CODE OF PRACTICE FOR THE
USE OF CNG IN INTERNAL
COMBUSTION ENGINES

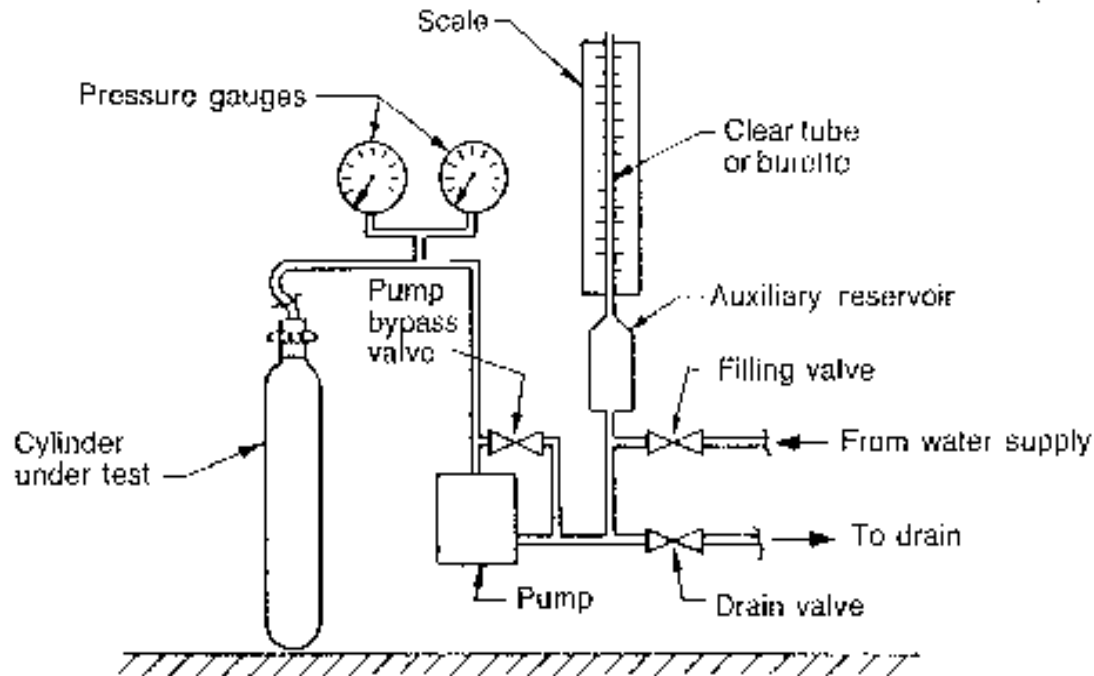
Clause 2.4.1

“ Cylinder shall be tested at periods specified by Statutory Authority in accordance with the requirement of AS 2030.1 or in accordance with the periodic test requirements laid down in the specification to which the cylinder was manufactured.”



NZS 5454

- New Zealand standard
- Requires cylinder recertification every 5 years (hydrostatic test)
- Requirement facility- refer AS 2337.1 – item 3.3.2



Typical non-water jacket apparatus



ISO 11439

- International Standard
- Requires visual inspection every 3 years
- Cylinder inspector has to be trained and approved by manufacturer

CERTIFIED INSPECTORS

With reference to ISO 19078.2, one may qualify to be an inspector if he/she have at least one of the following qualifications:

- be supervised by a person with two or more years experience
- be approved by the manufacturer of the cylinder being inspected
- be certified as an inspector by the inspection body
- be certified as an inspector by a regionally or nationally recognized organization that tests for specific knowledge of applicable CNG cylinder standards' recommended inspection guideline



Preparation for the implementation of cylinder inspection

- **Public awareness**
 - conversion workshops have to play a more important role in educating new users on the need of cylinder inspection
- **Elimination of unauthorised conversion workshops**
 - there are about 20 authorised conversion workshops, however there are 36 workshops doing NGV conversions
 - bad conversions, signature forging, off spec equipments (i.e cylinder bracket, bolts and nuts, cylinder clamps, etc)
- **Enforcement by authorities**



Q&A



THANK YOU

