



**Strategic Panel (SP7):
"Natural Gas: An Accomplished Driver for Vehicles Around the World"**

DRIVING THE NGV MARKET IN ASIA PACIFIC

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Contents

- **Introduction**
- **NGV in Asia Pacific**
- **Key Drivers for NGV Market**
- **Conclusion**



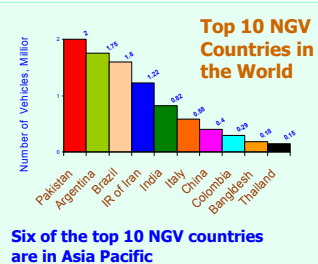
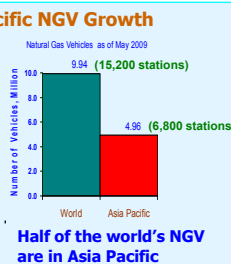
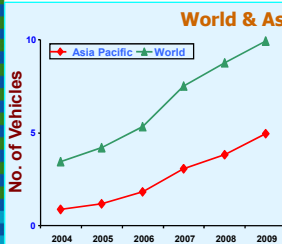
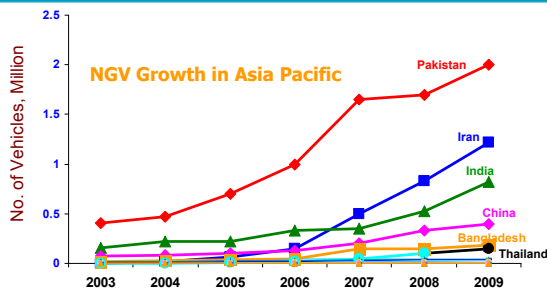
Introduction

- Asia Pacific region experienced dramatic growth in the NGV market for the past 5 years and this trend will likely to continue.
- Energy, Economics and Environment are the key drivers driving the NGV market in the Asia Pacific region.
- Asia Pacific Natural Gas Vehicles Association (ANGVA) is promoting the development and growth of NGV market in Asia Pacific region.
- IGU and IANGV had jointly conducted study on promotion of NGV for the past three triennia. Number of vehicles using natural gas worldwide expected to be over 60 million by 2020.



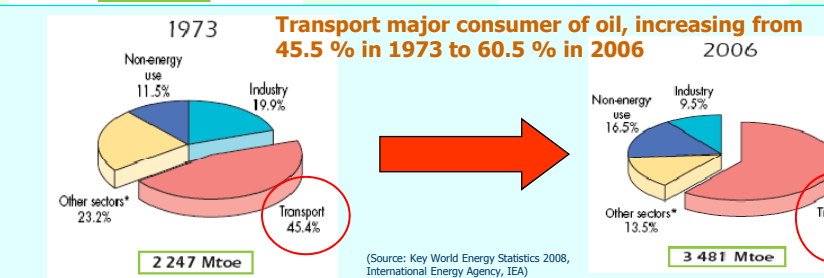
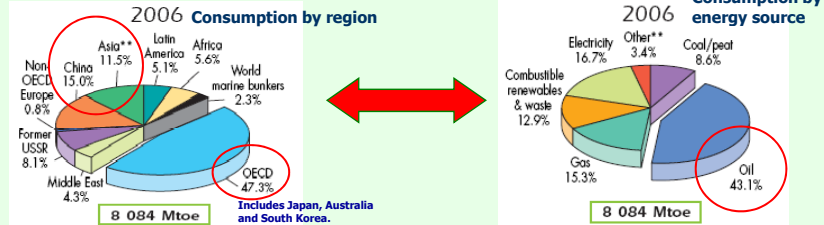
NGV in Asia Pacific

- 21 countries have NGV programme in Asia Pacific.
- NGV market in Asia Pacific growing at 40% per year over the last 5 years.





Asia Pacific consumed around 34 % of world energy with oil accounted for 43.1 % of total

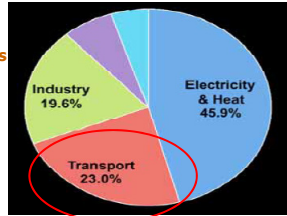


Key Drivers Driving the NGV Market in Asia Pacific
Energy, Economics, and Environment are the 3 key drivers driving the NGV market in Asia Pacific region.

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|---|--|--|
| <p>1. Energy</p> <ul style="list-style-type: none"> ✓ Security of Supply. ➢ Asia Pacific consumption of energy is increasing. ➢ Transport sector a major consumer of energy, mainly in the form of oil. ➢ Switching to NGV means utilizing indigenous supply of natural gas. | <p>2. Economics</p> <ul style="list-style-type: none"> ✓ Stability of price - oil price very volatile. ✓ Reduce oil imports & fuels subsidies. ✓ Cheaper source of energy. ✓ Reduce air pollution cost. ✓ Create local employment. | <p>3. Environment</p> <ul style="list-style-type: none"> ✓ Reduce air pollution esp. in cities. ✓ Fight Climate Change & Global Warming. ✓ Biomethane – Opportunity for Renewable & Sustainable CNG. |
|---|--|--|



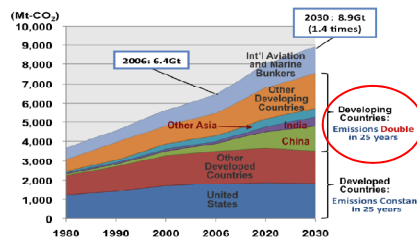
World's CO2 Emissions in 2006



Transport Sector Major Contributor to Global Warming

- World's CO2 emissions in 2006 was 28 billion tons (28 Gigaton, Gt) and 23 % (6.45 Gt) was from transport sector.

Trends in Transport CO2 Emissions: 1980-2030



- Worldwide CO2 emissions from transport sector will be 8.9 Gt in 2030.
- Emissions in developing countries is projected to double.



Challenges to Successful NGV Market Growth

- Government Support & Policies
- Gas Supply and Refuelling Infrastructure
- CNG Price Differential (compared to gasoline & diesel)
- Technology and Know-how
- Safety Standard and Enforcement
- Market Awareness and Education



Conclusion

- **Energy, Economics and Environment are driving the NGV market in Asia Pacific and this market will continue to grow. However, there are challenges that need to be addressed to ensure successful development and growth of the NGV market in the region.**
- **Some countries have successfully overcome these challenges. Their experiences and lessons learned should be shared with other countries. The Asia Pacific Natural Gas Vehicles Association (ANGVA) and also the International Gas Union (IGU) are good platforms for such sharing.**



THANK YOU