Iran's CNG industry

At a Glance

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Alternative fuels

- Alternative fuels are more likely to be produced from domestic resources.
- Alternative fuels generally reduce vehicular emissions.
- Some alternative fuels offer the potential to lower operating costs.
- Iran stands at the second position of Natural Gas reserves in the world.
- There are local networks for transferring Natural Gas in all territories.
- Previous experiences; for instant, LPG
- Available industrial infrastructure.

IRAN CNG HISTORY

- In Iran, the first CNG pilot project started in 1977 in Shiraz city. In this project, 1200 public vehicles converted into CNG-Gasoline. The final goal for this project was to reduce the air pollution.
- For the second step, this project continued in 1987 in Mashhad.
- In 1992, Public-Bus transportation company of Tehran started a research project in order to convert a few public buses to measure the possibility of using CNG in this fleet that was finished in 1996.
- But the main national project which was managed by the ministry of oil, started in 2000 and it is still continuing.

Works & Experiments

- Transferring know-how of CNG stations in construction and engineering phase and governmental financial support for establishing local companies to produce equipment and CNG stations.

- Transferring know-how of CNG vehicles in case of OEM and after-market conversion and governmental financial support.

- Transferring know-how CNGaccessories production and related financial support.

- Compiling the domestic CNG standard in production ground and in-service.

- Training the experts to work for after-sale services.

Works & Experiments

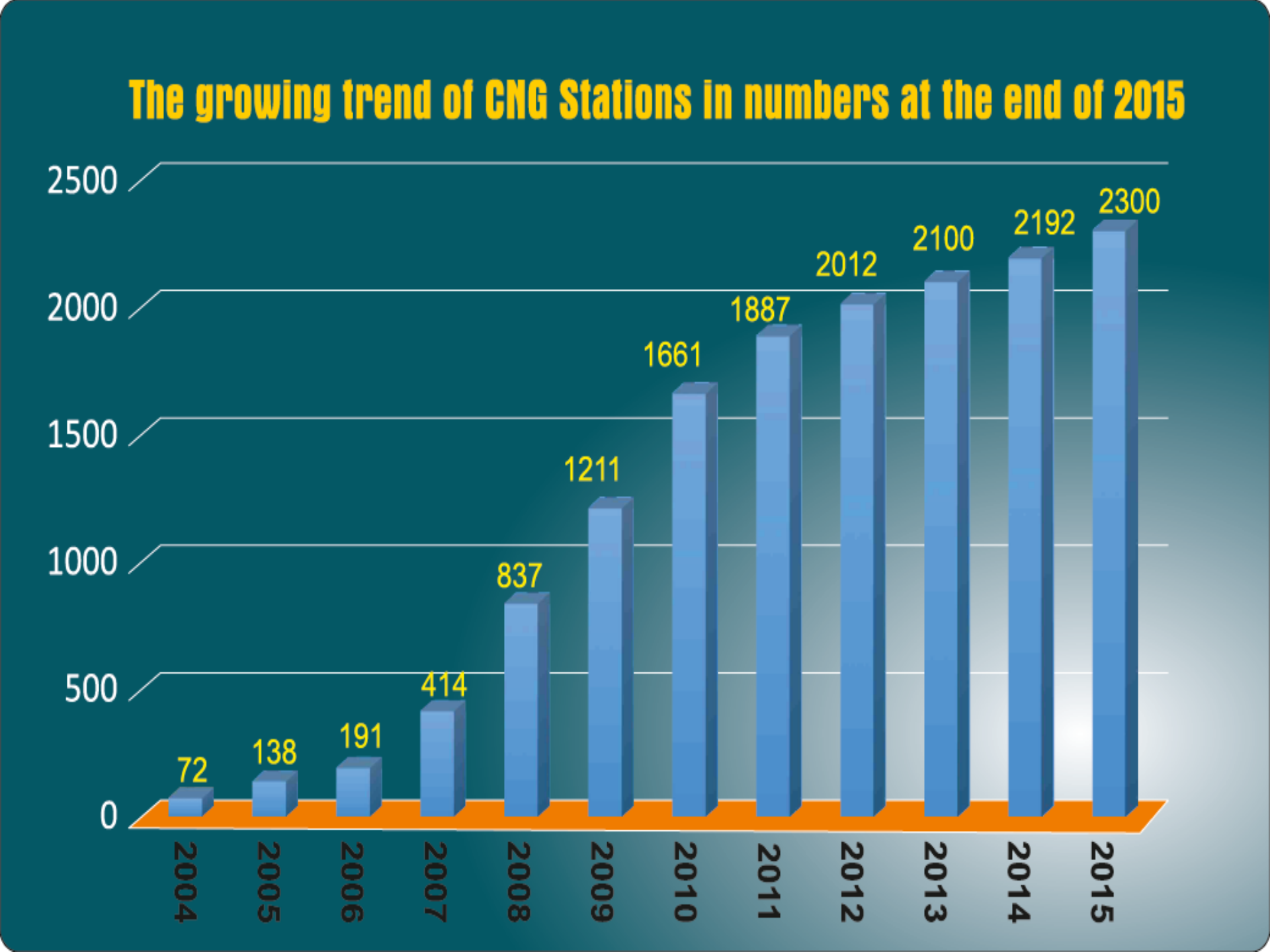
- Providing financial support and planning for manufacturing EF7 car engines (CNG–Based designed, engines with the capacity of 1800 cc).

- Constructing and commissioning 2342CNG stations with the capacity ranging from 250 to 2500 Nm^3/hr more than 2.6 Million cubic meter per hour.
- Conversion and production of over 3,300,000 CNG vehicles.
- Delivering over 20,000,000 m^3 Compressed Natural Gas per day.
- Over 40,000,000,000 liters of gasoline have been saved as a result of CNG consumption since 2003.

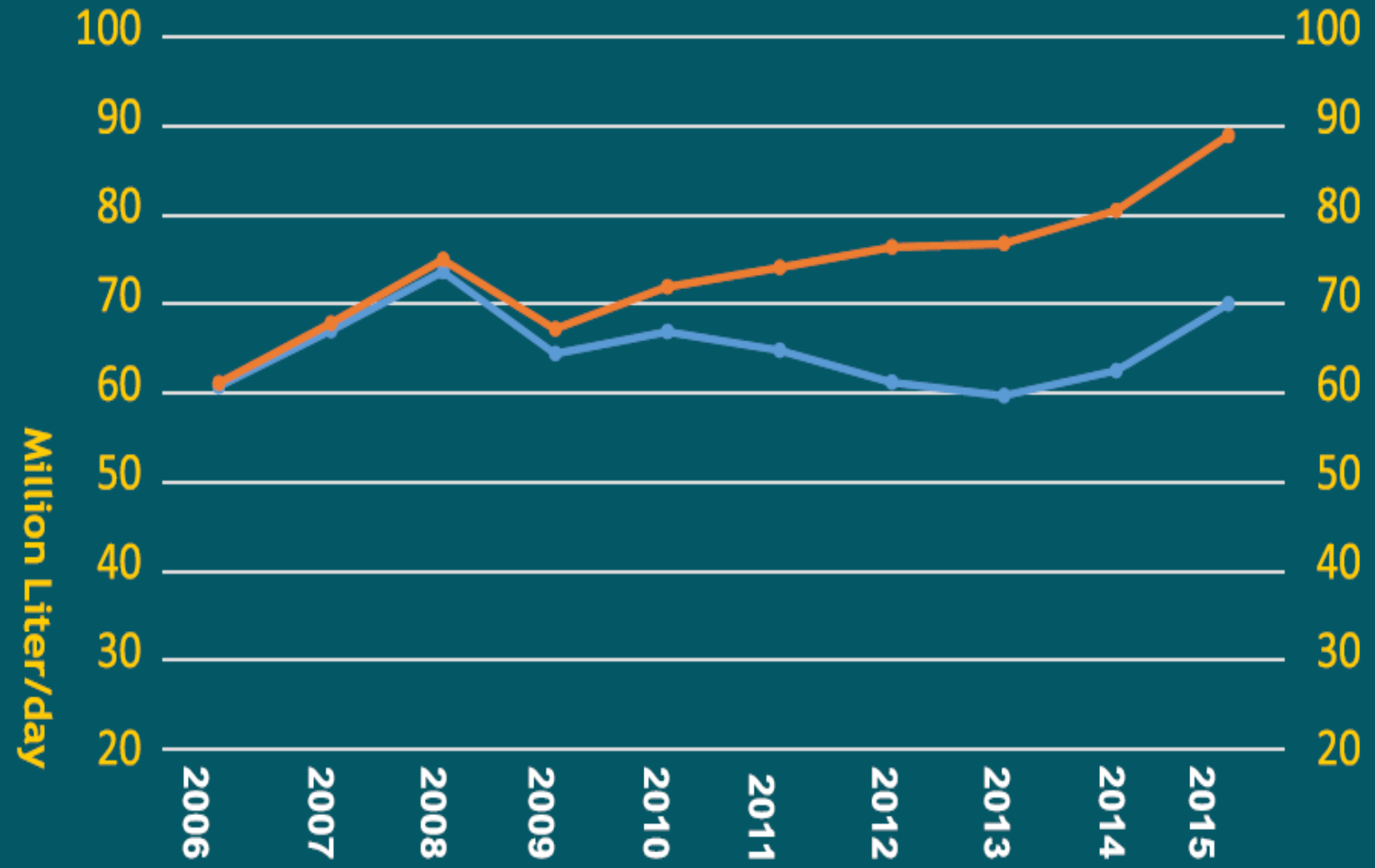
How it is done?

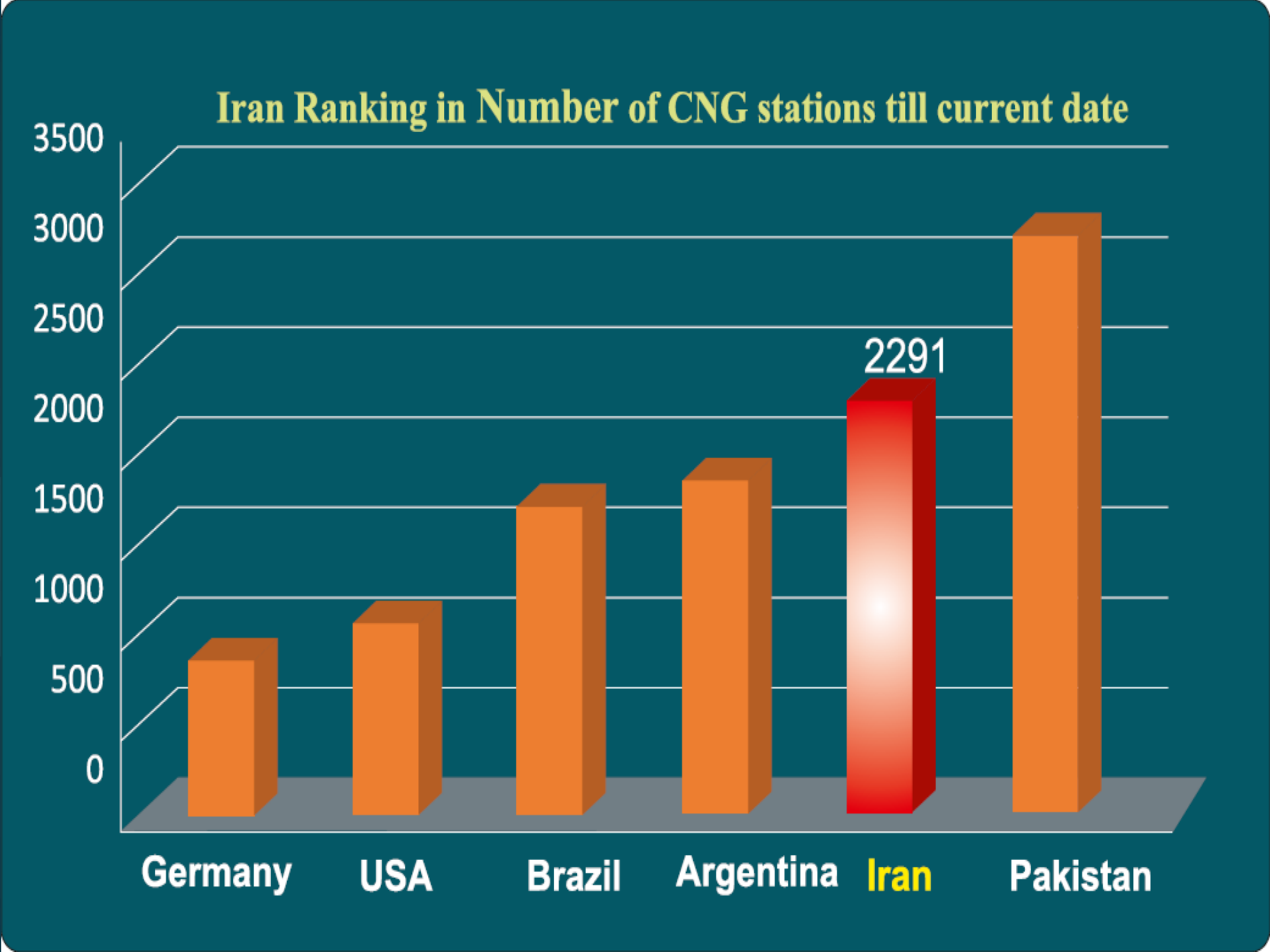
- The private sector introduces the land and prepares the cost of construction.
- The Ministry of petroleum has pays for the equipment. (For more than 1100 stations it has been paid)
- The City Halls prepare the land and the ministry of petroleum completes the whole of the station free of charge. (For more than 1200 stations it hasbeen done)
- The ministry of petroleum pays more than 80% of the cost of conversion and the owners pay only 20%. (More than 3,300,000 vehicles have been converted).
- The ministry of petroleum invests for producing EF7 vehicles (CNG- based engine).
- The ministry of petroleum invests for transferring technology and producing CNG cylinders in factories with the capacity of more than 800,000per year.
- The CNG price is about 35% of gasoline price. (13 cents for each Nm^3)

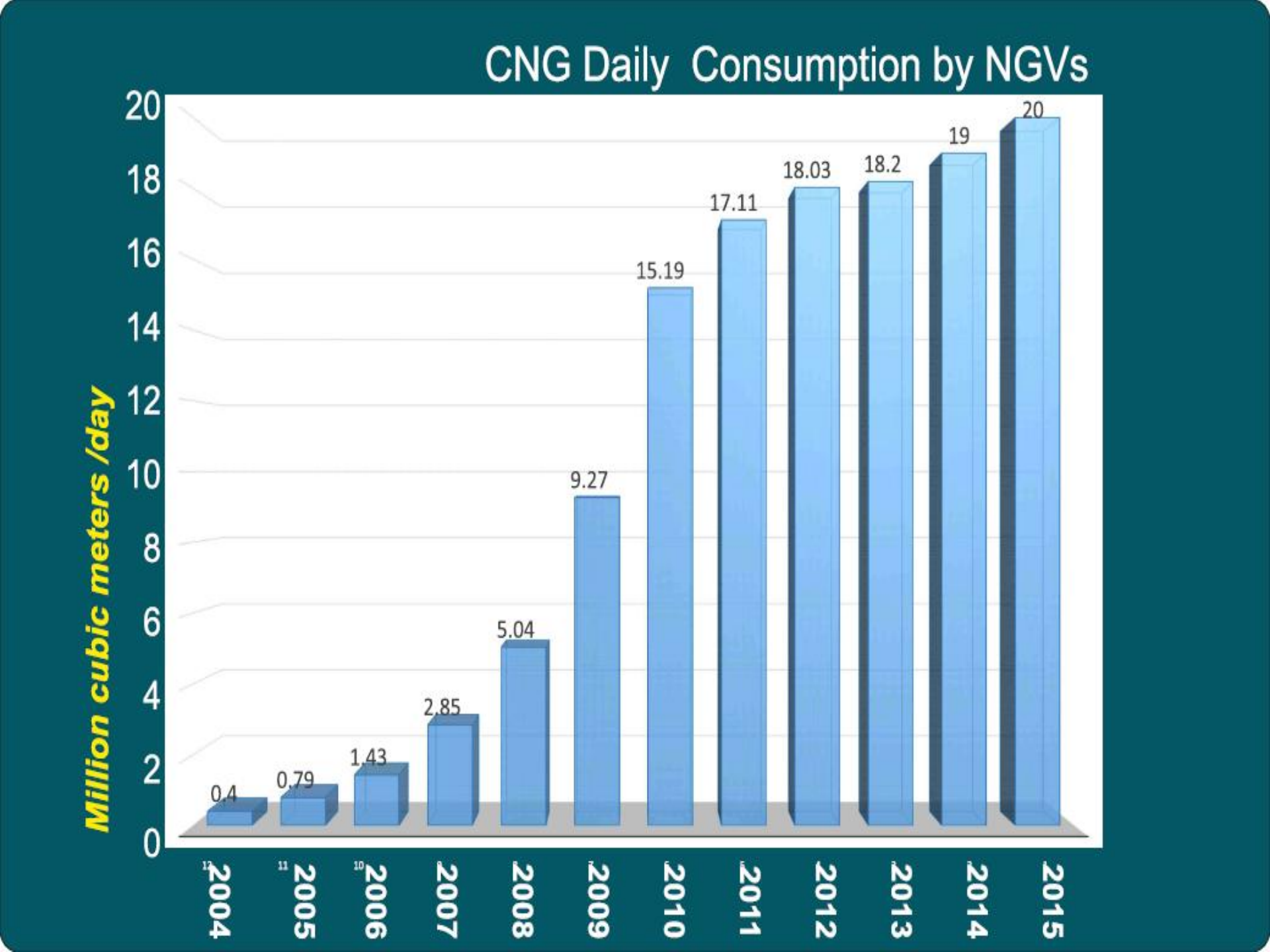
The growing trend of CNG Stations in numbers at the end of 2015



Prediction for Daily average Gasoline consumption without CNG infrastructure




Iran Ranking in Number of CNG stations till current date
3500
3000
2500
2000
1500
1000
500
0
2291
Germany
USA
Brazil
Argentina
Iran
Pakistan


CNG Daily Consumption by NGVs
Million cubic meters /day
0
2
4
6
8
10
12
14
16
18
20
0.4
0.79
1.43
2.85
5.04
9.27
15.19
17.11
18.03
18.2
19
20
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015

Safety & Operation

- Monitoring and controlling safety factors are considered to be the most important matter in order to continue consuming Natural Gas in transportation systems.
- Safety and standardization have always been evaluated as major factors while performing the CNG project in Iran.
- All contractors have to procure standard equipment and accessories both for stations and vehicles.
- There are third party companies which have to inspect and certify CNG stations and vehicles according to the domestic and international standards.
- About 1500 stations have been I inspected according to the related regulations by Institute of Standards & Industrial Research of Iran.
- There are governmental financial supports in order to encourage the owners to do periodical in-service inspections.

Experiences and Lessons Learned

- Geographical evaluations have been made in order to figure out the right position of stations in all around the country.
- Governmental subsidies are assigned to territories according to the following factors:

  1. The city population.
  2. The number of vehicles in each city.
  3. The daily average mileage of public transportation in each city.

- OEM-CNG vehicles will be more useful than aftermarket converted ones.
- After-market conversion must be considered as a short course project and for the long course plan, OEMvehicles must be attended which over 900,000 converted car in workshops and over 2,300,000 produced car in car factories in Iran, indicate this strategy.
- It is necessary to have performable regulations in order for periodical inspections and certifying the whole system.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Thanks!

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