

CASE STUDY

The succeeding pages present for your examination and discussion an actual, on-going initiative on green jobs. A facilitator will be provided to your group to direct the discussions and assist you in completing the assigned tasks within the time provided.

Instructions:

1. Read the case study provided your group. (15 min)
2. Discuss among yourselves, using as guide the questions indicated below. The facilitator may also pose some questions to probe further or elaborate certain points. (30 min)
3. Write your responses to these questions on the flip charts provided. (5 min)
4. Choose a member of your group to present your outputs in plenary. Each group is given a maximum of 10 minutes to give a brief description of their case, then present their discussion results.

Total time: 1 hour 45 min

Guide Questions:

1. What is the social/economic (labour) challenge or issue in the case?
2. What environmental factors greatly affect/are affected by this challenge/issue?
3. What are the probable impacts of this challenge/issue on specific stakeholders?
4. How are these impacts responded to?
5. How could these responses be enhanced or strengthened to ultimately lead towards green jobs?

Introduction

Pollution due to the use of petroleum products for the purpose of transportation is an ever increasing problem in modern societies. Compressed Natural Gas (CNG) is an alternative fuel for automobiles and is also the cleanest transportation fuel available today. It is claimed that apart from being less hazardous, CNG is also environment friendly, can help in reducing the levels of pollutant emissions and is cost effective.

Delhi was the first state in India where the entire public transport system switched to CNG run vehicles. Consequently, transportation related occupations needed to be “greened”, including mechanics of CNG run vehicles. Other jobs have been created, mainly in CNG filling stations.

In July 1998, the Delhi government was directed by the Supreme Court to convert its diesel-fuelled public buses - the *Delhi Transport Corporation* buses - into compressed natural gas (CNG) buses by 2001. At that time, there were only 350 Delhi Transport Corporation buses and 200 private buses serving the population of Delhi. This number considerably increased since then. According to the Delhi Government statistics there are 3,559 CNG buses and by mid-2010 the government would introduce another 3500 examples. Additionally, there are 12,000 taxis and 55,000 CNG run auto rickshaws, all together substantially contributing to a steady improvement of the air quality in the city. Indeed, the CPCB report concludes that from 2000 to 2008 SO₂ dropped by 57%, and CO by 72%. The success-story of Delhi’s green buses made the Supreme Court of India decide to apply the same directives to other 9 Indian cities.

The shift from a diesel-based mass transport system to CNG has involved new technologies essentially regarding modifications of the engines. The largest CNG manufacturing companies providing CNG buses to Delhi are Ashok Leyland and Tata Motors. The maintenance of the buses will be carried out by the respective companies from which the buses are being bought for a period of 12 years. A new labour market has been created and proper training and retraining will eventually lead to job placement.

There are roughly two types of professional profiles involved in the greening of the urban public transport system, namely:

- people employed in CNG filling stations

Currently, there are 367 CNG filling stations in Delhi, and during the year 2010 another 100 are going to be added. In all of the existing stations there are 8 filling points. Each of them is managed by two persons. These stations run round the clock. In addition to these workers, there are 2 security guards round the clock. Thanks to the CNG buses initiative, in total about 32 to 34 new jobs are being created at each of these stations on a contractual basis, amounting to 12,500 additional jobs in filling stations only.

- mechanics

They are primarily involved in the maintenance and servicing of the vehicles. Three types of CNG-mechanics can be distinguished: the mechanics for taxis and private cars, auto rickshaws mechanics, and the bus mechanics. Most of them shifted from the existing diesel based vehicles to CNG systems. From interviews done with 23 mechanics, an estimated 100,000 CNG mechanics in and around the city have shifted to CNG.

Challenges

Skill gaps have been identified for proper maintenance of the vehicles (mechanics). The Delhi Transport Corporation has not considered this a major problem in the medium term seen the 12-year agreement with the producing companies of the vehicles. As for privately owned buses, the lack of skilled mechanics poses a problem today. Therefore there is a need for quality training institutions that train mechanics able to maintain and fix the CNG engines and systems. But the existing TVET infrastructure is inadequate for meeting the current, let alone future, demand.

The lack of institutional training has opened up the opportunity for mushrooming of non-formal training in garages and mechanic shops. These entities suffer from proper quality assurance. In addition, several companies such as Hundai, Maruti and Honda have started the production of variants of existing CNG systems, further increasing the need for proper professional training.

Buses Catching Fire - 9 incidents in one month only

The Delhi State Government got a total of 950 buses from Tata Motors in 2009. As per contract, Tata Motors is responsible for the maintenance of these buses for the next 12 years. However, during the month of December 2009, nine buses caught fire. Causes were mainly technical snags. Newspaper reports suggested that short circuits made CNG buses catch fire, while others indicate manufacturing problems as primary cause for the incidents. The government believes that inappropriate infrastructures and an important lack of skilled workers are responsible for unsafe mass transport vehicles.

Sources: <http://timesofindia.indiatimes.com/city/delhi/Tatas-fined-Rs-4-crore-for-DTC-bus-fires-/articleshows/5338529.cms> &
http://www.telegraphindia.com/1091215/jsp/nation/story_11865158.jsp &
<http://www.hindustantimes.com/News-Feed/newdelhi/Another-DTC-bus-catches-fire-manager-suspended/Article1-490341.aspx>

Opportunities and responses

Because the CNG vehicles use compressed gas, which is explosive, maintenance and thus properly trained mechanics is a fundamental requirement for shifting away from traditional fuel. This has sadly been proved by the incidents that occurred in December 2009 (see box).

Still, the government of Delhi has not yet institutionalised training mechanisms to respond to identified skills needs. Industrial Training Institutes (ITIs) in the National Capital Region have started to train CNG mechanics, but a minimum number of years of formal schooling is required for admission. Most mechanics do not comply with this request. Other admission criteria should be introduced, focussing on aptitude rather than schooling, as most mechanics do have basic maintenance skills, but miss the knowledge and techniques needed for maintaining and repairing CNG engines.

Apart from changing admission requirements, also the training facilities need to be scaled-up. The number of training institutes in and around the National Capital Region is inappropriate and not proportional to the number of requested training and re-training programmes.

Green Jobs, Greener Business Training

Public-private collaboration can be part of the solution. Through the Corporate Social Responsibility of CNG buses producing companies skills gaps can be addressed. In Gujarat for example, *Gujarat Gas Corporation Limited* has successfully trained its personnel on how to maintain CNG vehicles. As such, no further training infrastructure from the government was needed, and high quality training services were provided. Seen the presence of large industrial units (Honda, Maruti,...) around the National Capital Region a similar public-private solution may be fruitful.

In future, quality servicing will be key for a vehicle mechanic. As the norms on air quality are getting stricter, proper training of mechanics is essential to successfully realise the transition to a low-carbon and environment friendly public transport system.