



**STANDING COMMITTEE ON
PETROLEUM & NATURAL GAS
(2015-16)**

SIXTEENTH LOK SABHA

MINISTRY OF PETROLEUM & NATURAL GAS

**FUNCTIONING OF PETROLEUM
CONSERVATION RESEARCH
ASSOCIATION**

TENTH REPORT



**LOK SABHA SECRETARIAT
NEW DELHI**

March, 2016/ Falguna, 1937 (Saka)

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Presented to Lok Sabha on 15.03.2016

Laid in Rajya Sabha on 15.03.2016



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NEW DELHI**

March, 2016/ Falguna, 1937 (Saka)

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**COMPOSITION OF THE STANDING COMMITTEE ON PETROLEUM & NATURAL
GAS (2015-16)**

Sl. No. Name of Members

**LOK SABHA
Shri Pralhad Joshi - Chairman**

- | | |
|----|-----------------------------|
| 2 | Dr. Ravindra Babu |
| 3 | Shri P. K. Biju |
| 4 | Shri Kalikesh N. Singh Deo |
| 5 | Shrimati Rama Devi |
| 6 | Shri Elumalai V. |
| 7 | Shri Naranbhai Kachhadiya |
| 8 | Dr. Thokchom Meinya |
| 9 | Shrimati Pratima Mondal |
| 10 | Shri Ashok Mahadeorao Nete |
| 11 | Shrimati Jayshreeben Patel |
| 12 | Shrimati Anupriya Patel |
| 13 | Shri Arvind Sawant |
| 14 | Shri Raju Shetty |
| 15 | Dr. Bhola Singh (Begusarai) |
| 16 | Shri Ravneet Singh |
| 17 | Shri Kamakhya Prasad Tasa |
| 18 | Shri Rajesh Verma |
| 19 | Shri Om Prakash Yadav |
| 20 | Shri Laxmi Narayan Yadav |
| 21 | Shri A.T. Nana Patil |

RAJYA SABHA

- | | |
|----|--------------------------------|
| 22 | Shri Mani Shankar Aiyar |
| 23 | Shri Ishwarlal Shankarlal Jain |
| 24 | Shri Prabhat Jha |
| 25 | Shri Bhubaneshwar Kalita |
| 26 | Shri Mansukh L. Mandaviya |
| 27 | Shri Ahmed Patel |
| 28 | Shrimati Gundu Sudharani |
| 29 | Chaudhary Munvvar Saleem |
| 30 | Shri Sharad Yadav |
| 31 | Shri Praful Patel |

SECRETARIAT

- | | | |
|----|--------------------|----------------------|
| 1. | Shri A.K.Singh | Additional Secretary |
| 2. | Dr. Ram Raj Rai | Director |
| 3. | Shri H.Ram Prakash | Additional Director |
| 4. | Ms. Sonia Khanna | Committee Officer |

INTRODUCTION

I, the Chairman, Standing Committee on Petroleum & Natural Gas (2015-16) having been authorised by the Committee to submit the Report on their behalf, present this Tenth Report on 'Functioning of Petroleum Conservation Research Association'.

2. The Committee took evidence of the representatives of the Ministry of Petroleum & Natural Gas at their sitting held on 31.03.2015.
3. The Committee considered and adopted the Report at their sitting held on 10.03.2016.
4. The Committee wish to express their thanks to the representatives of the Ministry of Petroleum and Natural Gas and Petroleum Conservation Research Association for placing their views before them and furnishing the information desired in connection with examination of the subject.
5. The Committee also place on record their appreciation for the invaluable assistance rendered to them by the officials of the Lok Sabha Secretariat attached to the Committee.

New Delhi;
14 March, 2016
24 Falguna, 1937 (Saka)

PRALHAD JOSHI,
Chairperson,
Standing Committee on
Petroleum & Natural Gas.

REPORT

CHAPTER-I

A. Introductory

1. India's ambitious development plan largely depends upon the availability of Energy Resources. Petroleum products, such as Diesel, Petrol, CNG and LPG are currently fulfilling about 40% energy demand in the country. The total yearly consumption of petroleum products is around 160 MMT, which will increase in coming years due to anticipated economic growth. It will also enhance our dependency on imported crude oil.

2. On the other hand, the environmental and climate change concerns puts pressure on use of fossil fuels indiscriminately. Therefore, fuel conservation and Energy Efficiency provide the best option for cutting down the Nation's energy demand and to help environment protection by reducing CO₂ emissions.

3. In the aftermath of 1973 oil shock, created largely by Arab states, it was thought to look towards oil conservation within the country. A Petroleum Conservation Action Group (PCAG) was set up by the Government in 1976 which was later constituted as Petroleum Conservation Research Association (PCRA) in 1978, a Registered Society under the administrative control of MoP&NG. It has been given the mandate to promote conservation of petroleum products in the major sectors of economy like transport, industry, households and the agriculture sector.

4. PCRA is the nodal agency engaged in promoting Fuel efficiency in the country. It also helps the Government in proposing policies and strategies for petroleum conservation, aimed at reducing dependence of country on Oil & Gas requirement. PCRA is performing functions to promote conservation of petroleum products in the major sectors of economy like transport, industry, households and agriculture through direct technical assistance, R&D (Research & Development) educational & training programmes, and mass awareness campaigns. PCRA activities include conservation of various energy sources, evaluation and commercialization of efficient equipment, popularizing driver training, assisting industry through Energy Audits etc. PCRA is

committed towards the fifth fuel i.e. “**Energy Efficiency**”, to augment the four conventional sources of energy viz. coal, petroleum, nuclear and renewable. To achieve this, PCRA is relentlessly pursuing Demand Side Management as a cost effective alternative.

5. In its mission for improvement of quality of life, PCRA works with the support of Public Sector Oil Companies, Govt. & Non-Govt. Organizations, Research institutes and Laboratories, Educational Institutes, Consumer Associations and other Organizations. Over the years, PCRA has enlarged its role in improving use of various sources of energy, for the purpose of achieving environment protection and sustainable development.

B. Vision, Mission and Objectives of PCRA

6. In a note submitted to the Committee, the PCRA has given the following as its vision, mission and objectives:

VISION:

- To become a Center of Excellence for Conservation of Hydro-carbons and Environment Protection for sustainable development on our inherent strength.

MISSION:

- Efficient energy utilization and environment protection leading to improvement in quality of life.

OBJECTIVES:

- To formulate strategies and promote measures for accelerating conservation of petroleum products leading to environment protection, energy security and sustainable development.
- To create awareness among masses about the importance, benefits and methods of conserving petroleum products and clean environment by enhancing information and capacity building.
- To promote research, development and deployment efforts aimed at petroleum conservation and environment protection, support and facilitate efforts for adoption and dissemination of fuel efficient technologies and substitution of petroleum products with alternate fuels and renewable.

- To establish synergistic institutional linkages at the National and International levels in the areas of petroleum conservation and environment protection.
- To provide training and technical advisory services, designed to achieve economy and efficiency in the use of petroleum products for cleaner environment.
- To function as a 'Think Tank' to the Government of India for proposing policies and strategies on petroleum conservation and environment protection aimed at reducing excessive dependence on oil.

C. Functioning and Manpower of PCRA

Governing Body of PCRA

7. The Governing Body (GB) of PCRA determines the policies, priorities, major activities, development program and special areas of interest. The Secretary, MOPNG is the Chairman of GB. CEOs of Oil Sector PSUs and other senior officials from Government of India are members of the GB. It supervises the overall implementation of the programmes and gives directions.

Executive Committee of PCRA

8. The Executive Committee (EC) is primarily responsible for promoting the aims and objectives of PCRA and implementing its plans and programs. Additional Secretary in the Ministry is the Chairman of EC. Directors of Oil Sector PSUs and other senior officials of Government of India are members of the EC. Representatives from Technical Bodies e.g. NPC, BEE, ASTRU, IIP, CHT, ASSOCHAM & FICCI are also members.

Manpower

9. On being asked about the sanctioned and actual staff strength and manpower requirements, the Ministry gave following information:

"Currently PCRA is having 80 officers against a sanctioned strength of 86 officers (refer table below). These officers are drawn from Oil and Gas PSUs, on deputation.

Grade/Region	Category	Northern Region	Eastern Region	Western Region	Southern Region	HQ/PS	Total
ED	Executive Director	-	-	-	-	1	1
G & H	Director / Chief Regional Coordinator	1	1	-	-	6	8
E & F	Additional Director / Field Engineer / Sub Regional Officer / Regional Coordinator	1	3	5	6	11	26
C & D	Deputy Director / Joint Director / Field Engineer / Sub Regional Officer	4	7	5	5	10	31
A & B	Officer / Senior Officer / Field Engineer / Sub Regional Officer	4	1	2	3	4	14
Total Officers		10	12	12	14	32	80
Sanctioned Strength		12	12	14	14	34	86
Vacancy		2	0	2	0	2	6
Strength of Sub Regional Officers (included above)							
Sub Regional Officers		3	4	5	6	Nil	18

Categories of manpower requirement in PCRA:

Broadly, the manpower requirement of officers is classified in two categories (i) Engineers and (ii) Non-Engineers.

Engineers: Engineers are appointed for various Technical positions i.e. Chief Regional Coordinator, Regional Coordinator, Field Engineers, Sub-Regional Officers and other engineering positions at PCRA HQ/PS, New Delhi.

Engineers preferably with Degree in Mechanical, Electrical or Chemical engineering are considered for appointment in PCRA for various technical positions enumerated above.

Non-Engineers are appointed in PCRA mainly for support functions i.e. P&A/HR, Hindi, Finance, and also to meet the requirement of officers in Education Campaign department at PCRA HQ/PS, New Delhi only.

Recruitment procedure for various categories of posts being followed in PCRA:

The following procedure is followed for appointment of various categories of officers in PCRA, excluding Executive Director, PCRA.

1. Manpower requirement of officers is sent to Oil PSU(s) for sending suitable nominations for consideration by PCRA for deputation posting in PCRA.
2. Upon receipt of nomination of officers from Oil PSUs, Personal Interaction is held with Executive Director, PCRA to assess the suitability of officers nominated by Oil PSUs.
3. Concerned Oil PSUs are informed about suitability / non-suitability of officers with the request for issuance of posting orders.

Executive Director in PCRA is appointed by MoP&NG, Government of India".

D. Key activities of PCRA

10. PCRA has developed various activities aimed at promoting conservation of Oil & Gas and other forms of energy in different sectors of the economy. These are briefly listed below:

(a) Field Activities

Activities under Industrial Sector

11. The industry sector consumes almost 40% of total primary energy consumption in the country. PCRA activities in this sector focus on improvement in fuel efficiency through Energy Audit, Fuel Oil Diagnostic Study, Service to Small Scale Industry, Follow-up Study, Institutional Training Program etc.

12. Major Energy Audit Conducted during 2014-15 are - Gun & Shell Factory, Cossipore; Guwahati Refinery, Guwahati; HPCL, Mahul Refinery; DDA, Siri Fort Sports Complex; Jindal Stainless Steel, Hissar; Anmol Bakers, Greater Noida; Engine Factory, Avadi; IOCL Kozhikode Depot, Kerala; HPCL Sewree, Mumbai; Ballabgharh Milk Plant; Shri Nath Ji Ispat Mill; Park Hyatt, Chennai; Haldia Dock etc.

13. Asked about the methodology adopted for conducting energy audit and the mechanism available to assist the industries for compliance of energy audit recommendations, the Ministry/PCRA submitted following information:

"Broad guidelines indicating the methodology for an energy audit is given below. Possible stages for interaction/conference are also indicated.

Phase-I:

- i. Collections of data on operational parameters, energy consumption both normal and electrical, coal and power quality etc., through a questionnaire.
- ii. Study the existing plant capacities and their performance to assess plant operations.
- iii. Study of the specific energy consumption (both thermal and electrical) department-wise and plant as a whole.
- iv. Study of the power sources, distribution system and drive controls, load factor and efficiency of large motors (above 25 kW), process automations, plant illuminations etc.
- v. Collection of requisite data and analysis and identification of specific areas with potential for conservation of thermal and electrical energy.
- vi. Field measurements of operational parameters and carrying out heat and mass balance.
- vii. Study of limitations, if any, in the optimal use of thermal and electrical energy.
- viii. Formulation of specific recommendations along with broad system concept for conservation of thermal and electrical energy.
- ix. Preparation of capital cost estimates and establishing techno-economic feasibility for recommended measures.
- x. No investment and/or marginal investment by doing system improvements and optimization of operations.
- xi. Major investment due to incorporation of modern energy intensive equipment and up gradation of existing equipment.
- xii. Formulating tentative time schedule for implementation of the recommendation.
- xiii. Undertaking broad cost benefit analysis in terms of savings in energy consumption per unit of production and pay-back period.

Phase-II:

PCRA after completion of field study shall submit the detailed energy audit report with its recommendations on energy conservation opportunity (ECO) with its cost benefit analysis supported by techno-commercial calculations. PCRA also Assist its implementation if required by unit. We also carryout follow ups to assess the financial benefits achieved by unit on implementation of ECOs suggested by PCRA".

Activities under Transport Sector

14. Transport sector accounts for almost half of country's annual petroleum consumption. As per the All India study report submitted to PPAC, 70 per cent of Diesel and 99.6 per cent of Petrol is consumed in transport sector alone. Of the total diesel sale, the highest consumption of 28.48 is by cars, utility vehicles (UVs) and three wheelers. In case of petrol the majority consumption of 61.42 per cent is accounted for by two wheelers while cars used 34.33 per cent followed by three wheelers at 2.34 per cent. PCRA has taken a lead role in Driver Training Programmes (DTP) to improve fuel efficiency of vehicles. Studies indicate a saving potential of around 20% in the transport sector. To realize this, PCRA conducts variety of Driver Training Programmes for State Transport Units (STUs), private fleet operators, organizations in private and public sector to promote efficient use of petrol, diesel and through better maintenance practices, model depot studies, emission awareness programmes, exhibitions, workshops, etc. all over the country. In the last 5 years PCRA has trained approximately 72,400 drivers and in the year 2014-15, total numbers of drivers covered are over 40000.

15. There is a scope of about 20% conservation in transport sector. Asked as to what is the saving due to conservation at present. In this regard, the Ministry informed as given under:

"The major thrust areas of activities in this sector include Driver Training Program, Model Depot Projects, Model Garages, Emission Check Program, engine replacement schemes and mass awareness program. This sector has been identified with a saving potential of 20%.

While we conduct the Driver Training Programmes, it has been observed that in most of the cases there is an improvement of fuel saving of 10 to 15%. As per the PWC report conducted in 2009, more than 70% of the drivers being trained are able to achieve fuel saving in the range of 9 to 11% on consistent basis.

Sl. No.	Transport Sector	HSD savings (in KL)				
		2011-12	2012-13	2013-14	2014-15 (Up to Feb)	Total
1.	Savings HSD in KL	31148	40738	46698	60400	178984
2.	Savings Amount in Cr.	125	183	219	302	829

16. Asked as to how the Driver Training Programmes being organized by PCRA, it was informed as given under:

"PCRA organizes 3 days Drivers training program for various organizations viz.,

- i. STU's
- ii. Oil Marketing company
- iii. Army
- iv. Private organizations and Fleet operators

PCRA approaches the organizations and also receive requests from them for carrying out for driving training programme. In 3 days DTP program, Driver Training Instructor measures fuel consumed by vehicle before training of Driver. The Driver is asked to drive the vehicle on a pre-scheduled 10 Kms route. Drivers' driving habits are noted on 18 nos. of parameters. Their deficiencies in driving are marked. During class room training session their deficiencies are discussed in detail.

Films in addition to presentation on eco-driving are also shown, after the class room training. DTI again measures vehicle fuel consumption by having the same vehicle driven by the same driver on the same 10 kms route. Both the Kmpl (Kilometer per litre) are compared and fuel efficiency improvement is recorded and shared with each participants.

PCRA has signed MoU for training the drivers of KSRTC (Karnataka State Road Transport Corporation), KADAMBA – Goa, BSRTC (Bihar State Road Transport Corporation) and NBSRTC (North Bengal State Road Transport Corporation. Our other state STUs are GSRTC (Gujrat State road Transport Corporation, MSRTC (Maharashtra State Road Transport Corporation, PMPML (Pune Mahanagar Parivahan Mahamandal Ltd.), J&KSRTC (J&K State Road Transport Corporation), KSRTC (Kerala State Road Transport Corporation) and Haryana Roadways etc. PCRA also conducts workshops for official of MORTH".

17. Asked as to whether any study being carried out to compare fuel consumption on bitumen road and concrete road, the Ministry submitted as given under:

"Some International studies have been carried out to compare fuel consumption on bitumen road and concrete road. Following are the findings:

- i. National Research Council Canada – "Fuel saving on concrete roads compared to asphalt roads, both from the empty and full tractor –trailer unit range from 0.8% to 3.9% and this was with statistically significant results with a field of reliability of 95%.

- ii. Transport Research Laboratory UK – “The reduced deflection of concrete pavement was found to lead to a 5.7% reduction in rolling resistance, which corresponds to fuel saving of 1.14%”.
- iii. Sweden - Swedish National Road and Transport Institute (VTI) “For a passenger car- Volvo 940-the measurements showed 1.1% less fuel consumption on the concrete pavement compared to the asphalt pavement.
- iv. Nippon Expressway Research Institute – Japan: For the inter- city mode at relatively low speed the fuel consumption rate for the asphalt pavement was 0.8 to 3.4 % higher than the concrete pavement. For the inter-city mode, at 80 km/h, the benefit varied from 1.4 to 4.8 %.
- v. University of Texas: Experiment was conducted on Chevy Astro van of about 1360 kg. Savings between 3 and 8.5 % in favour of concrete are reported.

Based on the above studies carried out by reputed international institutions, Concrete Roads are having distinct advantage over bitumen road with respect to Fuel Consumption in the Transportation of about 1- 8%”.

18. It is reported that there is substantial wastage of fuel at the traffic lights by the vehicles. As per the earlier study carried out in the city of Delhi, an estimated Rs. 994 crore of fuel is lost in a year at traffic signals in Delhi. Asked as to whether any such calculations are available for other cities and the steps taken by PCRA to minimize such wastages, the Ministry in a written reply submitted the following information:

"CRRI has carried out study on fuel loss at traffic junctions / signals in the city of Delhi in the past for PCRA.

Similar studies have been carried out for other cities like Ahmedabad, Port Blair, Goa, Surat, Indore by organization like CRRI, IIT Delhi and other institutes.

PCRA carried out Mass Awareness campaigns through Print & Electronic Media to educate public on Eco Driving and impart training to the Drivers. In addition to this PCRA also carries out intersection activities by distributing Driving tips to the motorist and carrying out Nukkad Nataks etc”.

Activities under Agriculture Sector

19. PCRA recognizes the potential and scope for conservation of petroleum products & electricity in this sector. To create awareness amongst the farmer community, PCRA conducts activities like van publicity, kisan melas and educational programs for students of agricultural colleges. During these events, clippings and films produced by PCRA on fuel saving tips are shown.

20. It has been reported that PCRA has done 649 Agricultural Workshops. The Committee asked as to whether these Workshops were conducted by NGO / Domain experts or local faculty, the Ministry/PCRA informed as given under:

"Agriculture workshops are conducted by PCRA officers and in collaboration with empanelled faculties / experts of PCRA. Some NGOs are also involved on need basis".

Activities under Domestic Sector

21. PCRA educates women on better cooking habits, use of fuel-efficient stoves and lighting appliances, use of alternative sources of energy such as solar, bio-gas etc. in order to promote conservation of LPG, PNG and Kerosene. PCRA conducts awareness workshops for women, college girls, cooks, housewives etc. where they are shown films and tips on energy conservation.

Progress of Field Activities Summary:

		2013-14	2014-15	2015-16
S. N.	Activity	Ach.	Ach.	Ach. till (Dec. 15)
1	Energy Audits	271	373	194
2	Fuel Oil Diagnostic Study	144	204	73
3	Service to Small Scale Industry	152	245	132
4	Follow Ups	395	219	117
5	Institutional Training Programme	460	507	423
6	Workshop- Industrial	419	520	344
7	Seminar/ Technical Meet	135	131	68
8	Driver Training Programme	1218	1464	1140
9	Model Depot Project	53	37	29
10	Training for Driver Training Instructor	20	19	14
11	Workshop- Transport	638	786	1215
12	Youth Programme	1607	1942	1371
13	Workshop- Domestic	929	1152	1084
14	KisanMela	83	64	30
15	Agricultural Workshop	649	718	667
16	Exhibition	133	68	107
17	Van Publicity Cycle	12	51	10

TOTAL	7318	8500	7018
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(b) Related activities of PCRA

22. Children and youth comprise more than forty percent of India's population. PCRA organizes a variety of programmes to inculcate among them the habit of saving energy at early age by approaching schools, colleges and technical institutions. These constitute quiz, essay, debate and painting competitions on topics related to Fuel conservation. Participants are encouraged through awards in both cash and kind. PCRA aims to make young minds understand the issue of energy conservation and motivate them to apply and promote the cause of oil conservation into their widening spheres of domestic and professional lives. Pursuing this mission, PCRA has initiated efforts for inclusion of text on Fuel efficiency in schoolbooks of NCERT.

Activities
• Youth Program in Schools to Inculcate Conservation Habits.
• National Level Essay & Painting Competition during Oil & Gas Conservation Fortnight.
• Booklets on Oil & Gas Conservation for School Children.
• Quiz, Debate, Elocution Competitions.

23. Asked as to what approach has been adopted for taking up youth program activities and for the educational institutes by PCRA, the Ministry/PCRA submitted following information:

"Children and youth comprise more than 40% of India's population. PCRA organizes a variety of programmes to inculcate among them the habit of saving energy at early age by approaching schools, colleges and technical institutions. These constitute quiz, essay debate and painting competitions on topics related to energy conservation. Participants are encouraged through the awards in functions. PCRA aims to make young minds understand the issue of energy conservation and motivate them to apply and promote the cause of oil conservation into their widening spheres of domestic and professional lives. Pursuing this mission further, PCRA has initiated efforts for inclusion of text on energy efficiency in school books at central and state levels.

PCRA also organize National level essay and painting competition during Oil & Gas Conservation Fortnight.

PCRA through its offices keep regular touch with the schools, colleges and institutes to conduct the youth oriented programs".

(c) Research & Development (R&D)

24. PCRA initiates and sponsors R&D projects for industry and transport sectors aiming at optimal utilization of energy and reduced carbon emissions. PCRA promotes new R&D initiatives and sponsors development, demonstration and implementation of improved technology, processes and products to conserve oil & gas in identified areas. PCRA recommends field trials of devices, equipment or appliances in the form of pilot projects and encourages commercialization of products or processes after successful completion of field trials through technology transfer.

25. The Committee asked about the details of the research centers available with PCRA and the number of scientists working in them and the number of research and development projects on energy conservations that have been identified or completed. In this regard, the Ministry/PCRA informed as given under:

"PCRA has no research center of its own, hence no Scientists are working in PCRA. PCRA carries out its research through reputed Research Organizations such as CSIR labs, IITs, ISM, IOC-R&D, SAIL-RDCIS, TERI etc. by providing grant-in-aid and supervising project execution.

More than 130 projects have been completed so far. Some of the major R&D projects completed are tabulated below:

- Biogas enrichment & bottling technology for vehicular use: In collaboration with IIT Delhi, a technology has been developed to enrich biogas and convert it into bio-CNG, which can be used in vehicles as an alternative to petroleum fuel.
- Generation of SynGas through plasma gasification of plastic waste: In collaboration with CSIR-CMERI Durgapur, an integrated, cost effective and environment friendly technology has been developed to tackle plastic waste problem and convert in to electricity.
- Porous radiant burners for LPG cooking stove: In collaboration with IIT Guwahati, a porous radiant burner for domestic cooking application has been developed and successfully tested. The newly developed porous radiant burner for LPG cooking stove has higher thermal efficiency as compared to conventional burners.
- Replication of retro-fitting technologies for improving energy-efficiency and reducing Green House Gas emissions of existing reheating furnaces in Small

and Medium Sector Re-rolling Mills. The project has been completed with SAIL, RDCIS, Ranchi. Specific fuel consumption has been reduced by about 23.9% in M/s Shyam Metallic & Energy Ltd., Pandloi.

PCRA sponsored work on generation of synthetic gas from waste plastic has been presented in the 8th World Congress of Chemical Engineering – Plasma Processing Symposium held in Montreal, Canada".

26. Asked as to how many R&D projects have been sponsored by PCRA. In this regard, the Ministry/PCRA informed as given below:

"More than 130 projects have been sponsored by PCRA till date. Details of four projects, mentioned in Annual Report of Ministry, which were completed & report accepted are as follows:

S. N.	Project name	Research Organization	Total Project Cost (Rs. In lac)	PCRA Grant (Rs. in lac)	Share by Industry/ Institute (Rs. In lac)	Duration (Months)	Summary
1	Installation of Energy Efficient Improved Biomass Cook Stoves	Maharana Pratap University of Agriculture and Technology, Udaipur	22.78	18.28	4.5	24	Existing cook stoves (chulhas) used in villages are very inefficient. Energy efficient cook stove was developed by MPUAT, and installed in 3029 rural households in Rajasthan.
2	Development of a Solar Powered Vehicle	Netaji Subhas Institute of Technology, Dwarka, New Delhi	15.50	5.10	10.40	7	A prototype solar vehicle ADVAY II was developed by NSIT to promote latest solar vehicular technology to save petroleum fuel. Vehicle showcased in AUTO EXPO 2010.
3	Enhanced Nutrient Removal under Shock Loads through Integrated Upflow Anaerobic Sludge Blanket (UASB) and Sequencing Batch Reactor (SBR) System for Sewage Treatment & Reuse	Department of Civil Engineering, Indian Institute of Technology, Roorkee	9.81	6.31	3.5	12	Conventional process of sewage water treatment is generally aerobic (oxygen is required). IIT Roorkee developed an anaerobic (oxygen not required) process. The developed system consumes about 35% less energy compared to aerobic system.

4	Development of Solar Concentrator Prototype for Industrial Application	Maharana Pratap University of Agriculture and Technology, Udaipur	11	9.5	1.5	12	Concentrating type of solar energy collector was developed by MPUAT. Sun's energy in the form of heat was utilized to pasteurize milk & concentrate acids, instead of using coal or wood as fuel.
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(d) Conservation Literature issued by PCRA

27. PCRA, over the years, has designed and developed a rich bank of conservation literature carrying useful information and tips for saving of petroleum products for different types of users. Few such manuals are – Energy Audit Manual for Textile Industry, Practical Guide to Energy Conservation in Ceramic Industry, Practical Guide to Conservation in Dairy Industry and Practical Guide to Energy Conservation in Pharma Industry.

(e) New Initiatives taken by PCRA

- Implementation of ISO 50001:2011 (En Ms): PCRA has taken an initiative to work as consultant for Energy Management System (ISO-50001:2011) with the help of Lead Auditors, across industrial sectors. PCRA has completed ISO 50001 for BPCL, Mumbai Refinery, BORL, Bharat Oman Refineries, BPCL, URAN LPG Bottling Plant and work is under progress for other units.
- Perform Achieve & Trade (PAT) scheme: In order to accelerate and incentivize energy efficiency, the Perform Achieve and Trade (PAT) mechanism has been designed by the Government under National Mission on Enhanced Energy efficiency (NMEEE). This scheme covers 8 sectors – Thermal power plants, Fertilizers, Cement, Pulp & Paper, Textile, Chlor - Alkali, Iron & Steel, and Aluminum. Total 478 industries are identified as designated consumers. PCRA is providing support to some of these industries.
- Standard and Labeling Programme for Appliances : PCRA, in association with BEE (Bureau of Energy Efficiency), has undertaken development of Standards & Labeling Programme for appliances consuming petroleum products viz. Domestic LPG Stoves, Diesel Generator sets and Diesel Engine Driven Monoset Pumps for Agricultural Purposes. The objective of this programme is to achieve fuel savings at consumer end, by using fuel efficient appliances having Star Ratings from 1-Star to 5-Star. The schemes are operational and vendor registration is underway.

Following vendors have been awarded star label:

- M/s STUFA Manufacturing Enterprise, Delhi and M/s MALBRO Appliances Pvt. Ltd. Delhi for Domestic LPG Stoves for their 3 models each.

- M/s TOPLAND Engines Pvt. Ltd, Rajkot (Gujarat) has been awarded Star “1” rating for its 04 models and Star “2” ratings for its one model under Diesel Pump Scheme through BEE Portal.

(f) International/National Networking

28. As part of Government of India’s initiative for cooperation with Japan in the field of Oil & Gas, PCRA executed an MOU with “The Energy Conservation Center Japan (ECCJ)” on 28th June 2006. The MOU has been further extended annually till 2015. The MoU opens up collaboration between PCRA and ECCJ on a wide range of issues leading to improvement in energy efficiency in different sectors. PCRA and ECCJ have jointly completed activities in Transport and Industry Sectors. The Ministry/PCRA has informed that the matter of extension of MoU with (ECCJ), Japan is being pursued by PCRA.

(g) Mass Awareness Campaigns

29. PCRA regularly organizes mass awareness campaigns through various print and electronic media to sensitize common people towards energy conservation. In order to bring about attitudinal changes, sustained campaigns are organized for targeted end users. Customized energy conservation messages are displayed in these campaigns according to their preferences. PCRA also uses Internet, digital cinema theatres and SMS facilities to reach out to more and more people. Besides, PCRA organizes intersection activities at traffic signals, walkathons and Nukkad Nataks to disseminate energy conservation messages.

30. During the year 2014-15 (April-February), PCRA undertook various people connect innovative activities to reach out to the target groups. Major activities are-

- Creation of Social Media Networking: PCRA accounts have been created on Twitter and Facebook. A successful contest was organized on Facebook and Twitter on “Save Fuel, Save Earth”. Approximately 750 entries received, with attractive prizes given to the winners.
- Walkathon: A walkathon was organized in Noida on 31.1.2015. Students from various schools , Staff from Oil Industry, Noida police and representatives of electronic and print media actively participated in the event.

(h) Oil and Gas Conservation Fortnight-2015:

31. It is a nationwide programme being celebrated during 16th – 31st January every year to sensitize the people about conservation and efficient use of petroleum products. OGCF 2015 was inaugurated in the National Capital by the Hon'ble MoS (IC), P&NG and attended by Govt. officials / Oil industry officials / School children/General Public & Media. Awards were given for exemplary work on conservation activities during the function. Over 23000 children from 45 cities across the country participated in the Painting and Essay (13 languages) competitions and the National Winners received awards during OGCF inaugural function.

32. OGCF 2015 also commenced simultaneously at the State Capitals, where functions were presided over by Governors / Ministers and other dignitaries of State Govts. During the fortnight, PCRA and Oil Industry undertook various mass awareness activities to spread the message of Oil & Gas conservation and to educate them about the methods to achieve it.

33. There was special focus on the following areas:

- Conservation activities for drivers / mechanics / helpers of commercial vehicles: This activity was carried out at approximately 45200 Retail Outlets of OMCs (IOCL/BPCL/HPCL) in all States and Union Territories with active involvement of officers from Oil Companies, PCRA, Dealers, NGOs, RTOs and others. Under this activity emphasis was laid on better driving habits as well as proper vehicular maintenance, fuel conservation tips, etc. Approximately 47.74 lac persons were counseled under this activity.
- Activity for domestic sector involving housewives / cooks: LPG Clinics were held in housing colonies, societies, community centers, RWAs, schools, etc. in different States and Union Territories. Conservation Tips & practical demonstrations on fuel saving, cooking and safe operation of LPG / PNG were given to housewives, cooks along with free distribution of Brochures/leaflets (in Regional languages). Approximately 77.79 lac participants were covered under this activity.
- Motivation to students for promoting Oil & Gas Conservation: A National Event in the form of Quiz was held for the students in 35 cities covering 586 schools. Approximately 5 Lac students participated in the quiz. Grand Finale of the Quiz was held at Gurgaon on 29.01.15. It was telecast on DD National on 01.02.2015.

E. Star rating Scheme of PCRA

34. Asked about the details of 'Star Rating Scheme of PCRA'. the Ministry/PCRA informed as given under :

"BEE, in association with PCRA, has launched Star Rating Programme for following equipment:

- i) Domestic LPG Stoves
- ii) Diesel driven Monoset pumps used in agriculture (2-10 HP); and
- iii) Diesel Generator Sets (upto 19 KW)

The Star Rating is provided to the above equipment ranging from '1' Star to '5' Star based on following criteria:

Domestic LPG Stoves:

Star Rating	Thermal Efficiency (As per IS 4246:latest)
1 Star	If Thermal efficiency $\geq 68\%$ & $< 72\%$
2 Star	If Thermal efficiency $\geq 72\%$ & $< 75\%$
3 Star	If Thermal efficiency $\geq 75\%$ & $< 78\%$
4 Star	If Thermal efficiency $\geq 78\%$ & $< 81\%$
5 Star	If Thermal efficiency $\geq 81\%$

Diesel driven Monoset Pumps used in agriculture (2-10 HP):

Star Rating	Specific Fuel Consumption (SFC) in g/h/m/l/s of pump at duty point w.r.t. SFCmax** (given in IS 11501:latest)
1 Star	$> 0.90 \text{ SFCmax}$ & $\leq 1.00 \text{ SFCmax}$
2 Star	$> 0.80 \text{ SFCmax}$ & $\leq 0.90 \text{ SFCmax}$
3 Star	$> 0.70 \text{ SFCmax}$ & $\leq 0.80 \text{ SFCmax}$
4 Star	$> 0.60 \text{ SFCmax}$ & $\leq 0.70 \text{ SFCmax}$
5 Star	$\leq 0.60 \text{ SFCmax}$

** SFCmax (Maximum Specific Fuel Consumption) of Diesel Engine Driven Monoset Pump at duty point is derived from chart given as per IS 11501: latest

Diesel Generator Sets (up 19 KW)

Star Rating	Specific Fuel Consumption (SFC) in g/kWh
1 Star	> 302 & ≤ 336
2 Star	> 272 & ≤ 302
3 Star	> 245 & ≤ 272
4 Star	> 220 & ≤ 245
5 Star	≤ 220

35. On a further query as to whether any collaboration has been done by PCRA with Bureau of Energy Efficiency, the Ministry submitted as given under:

"Yes, PCRA is working in close coordination with BEE for implementation of Star Labeling programme for equipment consuming petroleum products viz. Domestic LPG Stoves, Diesel Driven Monoset Pumps for agriculture and Diesel Generator Sets (upto 19 KW).

36. Asked about the progress achieved by PCRA since inception in 1978 in the field of Energy Conservation:

"Progress of major activities in the field of energy conservation since the year 1985 is tabulated below:

S. No.	Major Activities	Nos.
1.	Energy Audits, FODS, SSI, Follow Ups	52915
2.	Institutional Training Programmes	4560
3.	Model Depot Projects	2841
4.	Driver Training Programmes	12076
5.	Exhibitions, Seminars & Consumer Meets	2630
6.	Youth Programmes	20145
7.	Van Publicity	5174
Total		100341

Energy conservation achieved/realized during the last 4 years in the Industrial and Transport sectors are given in the table below:

S. No.	Industrial Sector	Energy savings (in KLOE)				Total
		2011-12	2012-13	2013-14	2014-15 (Up to Feb)	
1	Energy Savings Realized	32291	34480	13387	3449*	83607.0
2	Amount in Cr.	129.2	155.2	62.9	17.2	364.5
	Transport Sector	Energy savings (in KLOE)				
3	Savings HSD in KL	31148	40738	46698	60400	178984
4	Savings Amount in Cr.	125	183	219	302	829
	Grand Total Savings in Cr.					1193.5

37. PCRA also conducted various mass awareness programmes for agriculture & domestic segments, which have been received well. The feedback was taken immediately from the participants after the programme, which is encouraging. The

saving for such programmes has not been quantified. However, impact assessment has been carried out for such activities.

38. Impact assessment done recently by Planman Consulting (I) Pvt. Ltd. has indicated the following important feedback in programme area:

Agriculture Sector

IMPACT OF PCRA ACTIVITIES (Respondents from Programme Area)		
a)	Proportion of respondents who said that the Person(s) who explained in Mela / Seminar was / were helpful.	80%
b)	Proportion of respondents reporting they adopted the conservation practices after attending the PCRA activity.	89%
c)	Proportion of respondents who reported that they have achieved money saving due to lower fuel consumption after adopting the energy conservation practices.	90%
d)	Proportion of respondents who reported that they had developed a positive perspective towards energy conservation after attending the PCRA activity.	71%
e)	Proportion of respondents who said that they would recommend energy conservation practices to peers.	93%

PCRA Workshop / Van Publicity Programme

IMPACT OF PCRA ACTIVITIES (Respondents from Programme Area)		
a)	Proportion of respondents who found the PCRA activity useful / very useful	91%
b)	Proportion of respondents who reported that the publicity van personnel were "helpful"	70%
c)	Proportion of respondents who reported positive impact on their perception about fuel conservation due to PCRA activity	85%
d)	Proportion of respondents who reported positive impact on saving cooking gas	80%
e)	Proportion of respondents willing to recommend attending PCRA activity to others.	85%

Youth Programme

IMPACT OF PCRA ACTIVITIES (Respondents from Programme Area)		
a)	Proportion of respondents who were aware about PCRA activities	77%
b)	Proportion of respondents who said that they were aware about fuel saving practices in vehicles	83%
c)	Proportion of respondents who implement these energy saving practices in life.	87%
d)	Proportion of respondents who participated in the PCRA Youth Programme	100%
e)	Proportion of respondents who reported that the information / inputs provided in the PCRA Youth Programme was "Useful"	82%
f)	Proportion of respondents who reported that they have adopted the recommendations of PCRA Youth Programme	80%
g)	Proportion of respondents who would recommend to others for attending such a knowledge imparting PCRA Youth Programme	70%

39. Other than the above, impact assessment was carried out in the year 2012-13 and 2013-14 on the mega campaigns carried out by PCRA. The results reflect the savings as under:

S. No.	Year of survey	Name of the Agency	Perceived National savings on account of PCRA mass media campaign
1	2012-13	CS Datamation Research Services	Rs. 19490 crore.
2	2013-14	GFK Mode Pvt Ltd.	Rs. 26000 crore.

40. Asked as to whether any conservation efforts in the transportation of crude oil in the refinery sector and in the drilling activities have been taken up and the methods used for the same:

"Refineries move the crude oil through the pipelines which is efficient mode of transportation of crude. Similarly refineries also move the finished products through pipelines. They also have setup, which looks after conservation activities in specific areas.

PCRA is also assisting them by conducting energy audits of their units (BPCL – Mumbai Refinery, HPCL – Mumbai Refinery, IOCL – Gujarat Refinery, IOCL – Guwahati Refinery, Drilling Rigs & Pumping Stations of OIL etc.). In the course of energy audits, energy consumptions in various equipments of these facilities are analyzed for finding out the probable scope of energy conservation in the same. Besides energy audits, PCRA arranged some institutional training programme / awareness programs at these locations to sensitize their working people for improving the culture of energy conservation at their installations. In addition to above, PCRA is assisting refineries in implementation of energy management system ISO 50001 – 2011 (BORL – Bina Refinery, BPCL – Kochi Refinery, BPCL – Mumbai Refinery, etc.). PCRA had also conducted PAN India training for ONGC employees on Energy conservation".

41. The Committee asked as to whether any District Petroleum Committee which carries out PCRA activities has been created by the Ministry/PCRA, the Ministry replied as given under:

"There is no District level Committee for PCRA. PCRA has its Head Office in Delhi, 4 Regional Offices and 20 Sub-regional Offices at various places with following strength:

Offices	Northern Regional Office – New Delhi	Eastern Regional Office - Kolkata	Western Regional Office - Mumbai	Southern Regional Office - Chennai	Head Quarter – New Delhi	Total
Total Officers	7	8	7	8	32	62
Field Offices manned by Single Field Engineer	3 (Chandigarh, Lucknow & Jaipur)	4 (Guwahati, Ranchi, Patna & Bhubaneswar)	5 (Nagpur, Pune, Raipur, Ahmedabad & Bhopal)	6 (Vizag, Bengaluru, Kochi, Coimbatore, Hyderabad & Belgaum)	Nil	18
Total Manpower						80

Most of the field activities are accomplished by PCRA manpower (48 nos.) at Regional and Field offices in association with PCRA empanelled faculties.

Local & State representative/dignitaries are invited in major activities including mass awareness campaigns carried out during OGCF".

42. Conservation Technology Centre (CTC) has been established in Feb 2008. Asked as to whether this centre is still functional and being used for dissemination of conservation technology in various sectors, the Ministry informed as given under:

"Yes, the CTC (Conservation Technology Centre) is functional at Delhi and being utilized for dissemination of conservation technology in various sectors for the local and foreign visitors. Visits at School School / college students are planned to CTC to bring awareness".

43. Asked as to whether any such centers are available in the other parts of the country too, the Ministry informed that PCRA does not have such center in other part of the country.

F. Present Status of Petroleum conservation

44. Since the Petroleum conservation potential stands at 20 to 30%. The Committee asked as to the status of the conservation achieved so far. In this regard, the Ministry submitted following information:

"As per the report of the working group on Oil & Gas Conservation (Shah Committee Report) in the year 1999, the inter ministerial working group (1990) had assessed the potential of oil conservation to be of the order of 20 to 30%.

PCRA disseminates importance of conservation through its activities and support various sectors like Industry, Transport, Domestic, Agriculture through various sectorial programmes".

45. Asked about the sources of funding of PCRA and the expenditure incurred by it during the last five years, The Ministry/PCRA informed that:

"PCRA receives funds from OIIB Grant, contribution from oil PSUs and internal revenue generation mainly through Energy Audit. The fund is utilized in meeting expenses relating to Conservation Education Activities, Research & Development, Field Activities and Establishment & Administrative expenses.

Sources & utilization of fund during last three years

(Rs. In Lac)

	Major Heads	2011-12	2012-13	2013-14
Sources of Fund	Funding from OADB	4364	5667	3190
	Contribution from Oil PSUs	100	100	2896
	Others including Revenue Generation & Fixed Deposit Maturity	908	270	196
	Total	5372	6037	6282
Utilization of Fund	Field Activity	589	540	489
	Education Campaign	2498	3051	3317
	Research & Development	40	55	35
	Training & Development	18	16	15
	Establishment & Administrative	2196	2344	2420
	Capital Expenses	31	31	6
	Total	5372	6037	6282

46. On being enquired about the funding source for PCRA activities, the Ministry in a written reply submitted the following information:

"The following are the source of funding for PCRA activities -

- Major funding is from OADB (Oil Industry Development Board).
- Contribution from Oil PSUs to conduct specific activities like Mega Campaign, OGCF etc.
- Small portion through internal revenue generation by providing consultancy services to Industries for Energy Audits, PAT (Perform, Achieve and Trade) and ISO 50001 – Energy Management System".

47. When asked about the details of funds allocated and actual utilization during the last three years under various heads of activities, the Ministry submitted following details:

FY - 2012-13

"Sl. No.	HEAD	2012-13 (Rs. in Lac)		
		BE	RE	Actual Expenditure booked in F.Y.2012-13*
A.	Revenue Expenditure			
1	Field Activities	450	600	539.58
2	Education Campaign			
	(i) Mega Campaign	2500	766	2242.4**
	(ii) Regular Activities	800	730	808.75
	(iii) Committed liabilities of previous year	1640	1118	1118

3	Research & Development	100	55	55
4	Training & Development	25	16	16
5	Software Development / Internet connection	3	3	3
6	Establishment & Administration Expenses	2100	2355	2343
Sub Total (A)		7618	5643	6007.73
B.	Capital Expenditure			
7	Facility Oriented Items	5	4	4
8	Instrument & Equipment for Energy Audit etc.	40	21.5	21.5
9	Computers	8	5.5	5.5
Sub Total (B)		53	31	31
Total for PCRA Activities (A+B)		7671	5674	6038.73
C.	Less: OGCF Grant from Oil Companies	-100	-100	-100
D.	Less Revenue Generation	-250	-250	-249.53
Funding from OADB		7321	5324	5689.2
Amount of FDRs matured during the year		-20	-20	-20
Net Funding from OADB		7301	5304	5669.2

*As per audited balance sheet on accrual basis

**Liability deferred to FY – 2013-14

FY – 2013-14

Sl. No.	HEAD	2013-14 (Rs. in Lac)		
		BE	RE	<u>Actual</u> Expenditure booked in F.Y.2013-14*
A.	Revenue Expenditure			
1	Field Activities	472.00	472.00	418.17
2	Education Campaign			
	(i) Mega Campaign	1750.00	1130.00	2836.79
	Mega campaign (cont. of oil PSU's)		2800.00	
	(ii) Regular Activities	600.00	350.00	350.00
	(iii) Committed Liabilities of Previous year	1560.00	1560.00	1560.00
3	Research & Development	50.00	50.00	35.53
4	Training & Development	15.00	15.00	15.00
5	Software Development / Internet connection	3.00	3.00	3.00
6	(i) Establishment & Administration Expenses	1750.00	2020.00	2020.00
	(ii) Deferred liabilities		600.00	
Sub Total (A)		6200.00	9000.00	7238.49
B.	Capital Expenditure			
7	Facility Oriented Items	5.00	5.00	0.00
8	Instrument & Equipment for Energy Audit etc.	20.00	20.00	0.26

9	Computers	6.00	6.00	6.00
Sub Total (B)		31.00	31.00	6.26
Total for PCRA Activities (A+B)		6231.00	9031.00	7244.75
C.	<i>Less: OGCF Grant from Oil Companies</i>	(100.00)	(100.00)	(100.00)
	Less : Contribution of Oil companies for mega campaign		(2800.00)	(2796.00)
D.	Less Revenue Generation	(300.00)	(300.00)	(195.75)
Funding from OIBD		5831.00	5831.00	4153.00
Net Funding from OIBD		5831.00	5231.00	4153.00

*As per audited balance sheet on accrual basis

FY – 2014-15

S. No.	HEAD	2014-15 (Rs. in Lac)		
		BE	RE	<u>Actual</u> Expenditure upto February 2015 (Unaudited)*
A.	Revenue Expenditure			
1	Field Activities	492.00	482.00	336.30
2	Education Campaign			
	(i) Mega Campaign	1250.00	1250.00	1953.83
	Mega campaign (cont. of oil PSU's)	1500.00	1500.00	
	(ii) Regular Activities	400.00	440.00	302.65
3	Research & Development	50.00	60.00	57.67
4	Training & Development	20.00	24.75	19.81
5	Software Development / Internet connection	27.00	27.00	25.24
6	(i) Establishment Expenses	1600.00	1600.00	1427.91
	(ii) Administration Expenses	500.00	500.00	465.43
	(ii) Committed/Deferred liabilities	600.00	600.00	599.57
Sub Total (A)		6439.00	6483.75	5188.41
B.	Capital Expenditure			
7	Facility Oriented Items	5.00	5.00	4.29
8	Instrument & Equipment for Energy Audit etc.	10.00	10.00	0.10

9	Computers	16.00	16.00	15.27
Sub Total (B)		31.00	31.00	19.66
Total for PCRA Activities (A+B)		6470.00	6514.75	5208.07
C.	<i>Less: OGCF Grant from Oil Companies</i>	(100.00)	(100.00)	(87.00)
	Less: Contribution of Oil companies for mega campaign	(1500.00)	(1500.00)	(1000.00)
D.	Less Revenue Generation	(300.00)	(300.00)	(261.33)
Funding from OIDB		4570.00	4614.75	3859.74
Amount of FDRs matured during the year		99.00	143.75	143.75
Net Funding from OIDB		4471.00	4471.00	3715.99"

48. In the XIIth Five Year Plan, it was suggested that for energy conservation projects including energy audit and for energy instruments, financial assistance will be given by Govt. Asked about the present status of this proposal, the Ministry/PCRA submitted following information:

"In 12th Plan, budgetary support of Rs. 5.00 crore has been provided to BEE for the scheme to subsidise energy audit instrument purchase by Certified Energy Auditors and Accredited Energy Auditors. Support is restricted to 50% of the total cost of the instruments, and up to a maximum of Rs.1.50 lakhs per auditor, whichever is lower. Instruments specifications have been finalized, and the scheme has been forwarded to State Designated Agencies (SDAs) established under EC Act, 2001, for implementation. Five SDAs have submitted their implementation proposals, which are under process, with BEE. This activity does not fall under the domain of PCRA".

G. Future Strategies of PCRA

49. Asked as to whether any use of alternate source of Energy is planned for at retail outlets of OMC's, the Ministry/PCRA informed that OMCs have already started solarisation of retail outlets under various schemes.

50. The Committee wanted to know as to whether high energy consuming industries have been identified by PCRA, the Ministry/PCRA submitted following information:

"It is evident that exploitation of energy sources are generally associated with affecting the nature and directly or indirectly contributes to climate change. To mitigate this there have been programs of Govt. of India in the name of NMEEE (National Mission on Enhanced Energy Efficiency). Under this mission there is

one programme named PAT (Perform, Achieve and Trade), which is market-based mechanism to enhance cost effectiveness of improvements in energy-intensive large industries and facilities, through certification of energy savings that could be traded.

Under this scheme, 8 sectors – Thermal Power Plants, Fertilizer, Cement, Pulp & Paper, Textiles, Chlor-Alkali, Iron & Steel, and Aluminum – which are high energy consuming sectors. Under these 8 sectors 478 industry have been identified as Designated Consumers. Details of sector wise designated consumers are as under:

Sector	No. of Designated Consumers
Aluminium	10
Cement	85
Chlor-Alkali	22
Fertilizer	29
Iron & Steel	67
Pulp & Paper	31
Textile	90
Thermal Power Plant	144
Total	478

There are processes going on by BEE for further dissemination of this scheme by deepening and widening the designated consumers list through afore-mentioned market driven scheme for promoting Energy conservation.

With the implementation of this scheme, the emission level of these designated consumers will come down, which will have direct impact on environment".

51. Asked as to how much expenditure is incurred by PCRA on advertisements in the last three years, the Ministry informed that as given under:

"It is submitted that expenditure on account of advertisement for FY 13/14 and FY 14/15 is 29.90 Crs and 23.07 Crs respectively. During the current year (FY 15/16) the expenditure on account of advertisement is Rs. 16.44 Crs by January 2016 as against 29.78 Crs and 9.30 Crs by January 2014 and January 2015 respectively. This includes expenditure on television, print, radio, social media and designing of creatives for advertisement.

52. Asked as to whether the use of electronic media, TV and radio at national level is being used for such advertisements, the Ministry/PCRA informed that PCRA is making use of electronic media, TV and radio at the National level for spreading the

Conservation messages. Asked as to whether there is any proposal to use hoardings/balloons and other medium as used globally for PCRA advertisements, the Ministry/PCRA informed that PCRA has been using all popular medium of advertisements including hoardings, balloons, social media (Twitter, Facebook), print & electronic media etc. Asked as to whether PCRA uses vernacular languages for carrying out its technical meets with consumer and LPG clinics, it was informed that PCRA is using vernacular languages for carrying out its technical meets with consumers and LPG clinics.

53. The Committee wanted to know that as part of the conservation strategy, whether PCRA celebrates energy conservation week or World environment day, In this regard, the Ministry submitted following reply:

"PCRA celebrates nationwide Oil & Gas Conservation Fortnight during 16th – 31st January every year. During OGCF, an intensive nationwide campaign on energy conservation involving a huge number of people is organized. A series of events and activities such as essay writing, quiz and painting competitions for school children are carried out and winners are rewarded. For common people, mass rallies, cycle rallies, marathons, walkathons, human chains, technical seminars, symposiums etc. are organized in every nook and corner of the country with the support of State Level Coordinators (SLCs), Regional Level Coordinators (RLCs) of Oil PSUs.

Special attention is given to the targeted segments especially the drivers, housewives, youths, school going children's and farmers".

54. Asked as to whether PCRA has made efforts in the railway sector as well as heavy vehicles in rural area, the Ministry informed as summarized below:

"Railways is the significant Energy user for the operation of its giant networks. It uses high amount of Diesel/Liquid fuel for locomotives and DGs. It has huge no. of stations /Building networks. The Railways has been identified as Designated Consumers under PAT Cycle - 2. The Energy saving potential for the railways is about 10-25% savings, which may be achieved by the implementing the Energy audit recommendations and various other energy saving interventions.

PCRA has supported Railways by carrying out Energy Audits at various Railway locations and recommended the feasible energy saving potential. The executive summary of few audits done by PCRA is tabulated below:

S. No.	Locations	Saving Potential (kWh/yr)	Saving Potential in (KLOE/Yr)	Potential Saving (Rs. In Lac/yr)	Investment (In Lacs of Rs.)	Payback period (Month)
1	DRM Office Building, West Central Railway Kota	388095	33.38	14.73	12.25	Less than 10 Months
2	Northern eastern Railway HQ office Complex and Railway Hospital, Gorakhpur	1221850	105.08	48.26	30	Less than 7.5 Months
3	Gangapur City Railway Station	63802 Kwh + 11.5 KL HSD	15.14	7.48	11.81	Less than 19 Months
4	Kota Railway station	120429	10.36	4.55	7.24	Less than 20 Months
5	Electric Loco Shed West Central Railway Tughlakabad	109235	9.39	4.28	3.54	Less than 10 Months
6	North Frontier Rly Div Hospital, Alipurduar (2012)	8219	0.76	0.46	1.66	Less than 44 months
7	North Frontier Rly Pumping Stations (Nonai & Jack Pit) (2011)	142933	13.36	7.89	3.25	Less than 6 months
8	North Frontier Rly Zonal Trg Centre (2012)	31814	2.97	1.77	3.85	Less than 27 Months

PCRA has also submitted a proposal to Indian Railways for useful conversion of Solid Waste to Energy. Railways are one of major Solid Waste generator in India. PCRA has made presentations on the successful Technologies to Railways.

For heavy vehicle segment, PCRA has signed MoU for training the drivers of KSRTC (Karnataka State Road Transport Corporation), KADAMBA – Goa, BSRTC (Bihar State Road Transport Corporation) and NBSRTC (North Bengal State Road Transport Corporation). Our other state STUs are GSRTC (Gujarat State road Transport Corporation, MSRTC (Maharashtra State Road Transport Corporation, PMPML (Pune Mahanagar Parivahan Mahamandal Ltd.), J&KSRTC (J&K State Road Transport Corporation), KSRTC (Kerala State Road Transport Corporation) and Haryana Roadways etc. PCRA also conducts workshops for officials of MORTH (Ministry of Road Transport and Highways)".

55. Asked as to whether any study done to identify carriage loss at high altitudes, the Ministry submitted following reply:

"Yes, Defense Research Development Organization has carried out a study in collaboration with Indian Institute of Petroleum, Dehradun on Performance of Diesel Engines at high altitudes. The results of study carried out at the Indian Institute of Petroleum, Dehradun both on stationary and automotive diesel engines indicate that problems are encountered when conventional, normally aspirated diesel engines are operated at high altitudes".

56. Asked as to what steps have been taken for minimizing flaring of gas in refineries and Oil fields, the Ministry informed in a written reply:

"Each oil company has got its own set up to look after these issues. PCRA has recently submitted a proposal to M/s ONGC for gas optimization study at its 8 locations, which will help in optimization of internal gas usage of ONGC".

57. PCRA has conducted approximately 13000 Energy Audits so far. Energy audits done during previous few years are mentioned below:

S. No.	ACTIVITY	2010-11	2011-12	2012-13	2013-14	2014-15 (Apr-Feb)
1	Energy Audits	354	328	358	271	295
2	Fuel Oil Diagnostic Study	161	159	221	144	132

Major Energy Audits conducted in past are tabulated below for the reference:

S. No	Name of EA	Savings identified (KLOE)
1	CESEC, Titagarh	839
2	Gujarat Florochemicals, Vadodara	6463
3	Asian Paints, Mumbai	437
4	Sesa Goa, Panaji	8774
5	GCMMF Dairy, Gandhinagar	1456
6	BHEL (HEEP), Haridwar	2091
7	JSW, Bellari,	20019
8	M/s. TNPL, Paper Machine, Karur	17621
9	Manali Petrochemicals Ltd., Manali, Chennai	1878

58. Asked about the details of the programs being conducted in school and colleges, the Ministry/PCRA submitted following information:

"To educate our future citizen i.e. Students and Youth, about energy conservation, PCRA has been conducting Youth Programmes for students and youth for last few years so that they can appreciate and understand the urgent need of Energy Conservation. As the target audience is large and diffused throughout the country deployment of external faculties for conducting large number of Youth Programmes will be more effective.

The objective of the Youth Programme is to reach large and highly diffused target audience, i.e. Students and youth of our country. Youth Programmes are conducted in schools, colleges, clubs, community centers, youth organizations by PCRA trained faculties under the supervision of PCRA field officers. During the programme informative speech on efficient use of petroleum products and energy conservation is made.

Quiz programmes, painting competitions, essay writing competition and debate competition are conducted and the end of the programme feed back is taken from the participants and their queries are addressed. To give them importance, efforts are made to invite important person / dignitary to be present during the function".

59. Asked as to how PCRA carryout their activities, the PCRA submitted following information in this regard:

"PCRA carries out its activities through own staff, faculties and at times through NGOs. In addition to PCRA energy experts, it also takes support from sector experts for carrying out its activities for specialized sectors like Fertilizers and Power Plants etc".

60. Asked about the details of expenditure incurred on media campaign and has any impact assessment being carried out, the ministry submitted as given under:

"PCRA regularly organizes media campaign through various print and electronic media to sensitize and bring attitudinal changes in common people towards conservation. During the campaign conservation messages are disseminated on Television, News Papers, Radio. Discussions also take place on Door Channels on Conservation.

Expenditure incurred by PCRA on Media campaign in the last 3 years is tabulated below:

(Fig. in Lac)

S.No.	Activity/ Year	2012-13	2013-14	2014-15
1	Television	1489	1796	1046.52
2	Print	502	710	724.61
3	Radio	354	335	307.38
	Total	2345	2841	2078.51

The above activities have been carried out through DAVP (Directorate of Audio Visual Publicity, Ministry of Information & Broadcasting, Govt. of India).

In the last three years, two impact assessment surveys have been carried out by PCRA on Mega Campaign and are summarized below:

S. No.	Year of survey	Name of the Agency	Value of the work order	Perceived National savings on account of PCRA mass media campaign
1	2012-13	CS Datamation Research Services	Rs.7.27 Lakhs	Rs. 19490 crores.
2	2013-14	GFK Mode Pvt Ltd.	Rs. 20.69 Lakhs	Rs. 26000 crores.

61. The Govt. had responded to Oil crises of 1973 which led to series of actions leading to setting up of PCRA. During the same period Govt. of Japan also initiated steps in the same direction. Japan has been able to reduce overall consumption of petroleum products and also their import of crude oil, where as the petroleum consumption in India has grown up steadily and so the import of crude oil. Asked about

the major difference between the conservation in Japan and in India, the Ministry submitted following information:

"Following oil crisis during 1970s, Japan introduced a ground-breaking piece of legislation called the Energy Conservation Act in October 1979. The Act was intended to regulate the Rational Use of Energy in 4 major sectors – Industry (Factories / Workplaces), Buildings (Commercial / Residential), Transportation and Machinery / Equipment. Japan has improved energy efficiency by approx. 40% after the oil crises since 1970s as a result of positive actions by both public and private industrial sectors and specifically in Industrial Sector Japan has been able to reduce its specific energy consumption by 41.4% during 1973 to 2011.

The Government of Japan made huge Investments in Research & Development and implemented a large scale 15 year investment plan in 1970's (130 billion yen) and FY 2013, the Government budget of 53 billion yen was allocated to support, among others, facility purchasing at factories, building renovation, energy auditing and R&D.

In India, Energy Conservation Act was enacted in October 2001. During the 1st March 2002, BEE was formed as statutory body to regulate energy conservation act 2001 in India.

The major difference in between Japan & India is the time of promulgation of Energy Conservation Act, which is 1979 in case of Japan and 2001 in case of India. After enactment of Energy Conservation Act 2001 in India, various programmes on energy efficiency are under progress on different sectors of economy and at the different states".

62. On a query as to whether any collaboration with govt. of Japan from the Japanese efforts, the Ministry/PCRA submitted as under:

"PCRA & ECCJ (Energy Conservation Centre, Japan) under Ministry of Economy, Trade and Industry, Govt. of Japan had entered into a MoU on 28th June 2006 for cooperation in the field of energy efficiency. Since then PCRA and ECCJ are working together for carrying out various energy conservation activities such as workshops, seminars, training, exhibitions, etc. by extending MoU from time to time. Current MoU is valid till 27th June 2015.

Some of the major areas of cooperation are as under:

- Joint Activities in Transport Sector.
- Training Programs in India / Japan.
- Engaging experts for technical seminars / workshops in India / Japan including Eco-Driving Workshops in Japan on Heavy Vehicles (Bus, Trucks) using HSD.
- Developing Handbook / Audit manual for various sectors.
- Support for capacity building on energy audit in designated industries".

The matter for signing the MoU with Energy Conservation Centre Japan (ECCJ) is being pursued by PCRA directly and through MoP&NG. The Governing body of PCRA has cleared renewal of MoU on 26.11.2015.

63. There are over two lac panchayats after 1978, set up in rural areas with 28 lac representatives. The Committee asked as to whether PCRA contacted gram panchayats or gram sabha for implementing their activities, the Ministry submitted as given under:

"Apart from Head Quarter at Delhi , PCRA has Regional Offices and 18 functional Field Offices (SROs) with following strength:

	Northern Regional Office – New Delhi	Eastern Regional Office - Kolkata	Western Regional Office - Mumbai	Southern Regional Office - Chennai	Head Quarter – New Delhi	Total
Total Officers	7	8	7	8	32	62
Field Offices manned by Single Field Engineer	3 (Chandigarh, Lucknow & Jaipur)	4 (Guwahati, Ranchi, Patna & Bhubaneswar)	5 (Nagpur, Pune, Raipur, Ahmedabad & Bhopal)	6 (Vizag, Bengaluru, Kochi, Coimbatore, Hyderabad & Belgaum)	Nil	18
Total Manpower						80

With the existing set up and engaging external faculties, following programmes have been conducted in the last 5 years:

S. N.	Activity	2011-12		2012-13		2013-14		2014-15		2015-16 Ach. till (Dec. 15)	
		Tgt.	Ach.	Tgt.	Ach.	Tgt.	Ach.	Tgt.	Ach.	Tgt.	Ach.
1	Energy Audits	300	328	376	358	400	271	348	373	305	194
2	Fuel Oil Diagnostic Study	200	159	252	221	220	144	228	204	191	73
3	Service to Small Scale Industry	160	161	200	221	220	152	289	245	217	132
4	Follow Ups	500	422	624	421	420	395	391	219	290	117
5	Institutional Training Programme	360	494	452	580	500	460	570	507	510	423
6	Workshop-Industrial	300	293	376	368	400	419	446	520	570	344

7	Seminar/ Technical Meet	120	109	152	148	120	135	254	131	132	68
8	Driver Training Programme	800	605	1000	815	1000	1218	1267	1464	1590	1140
9	Model Depot Project	120	99	152	69	80	53	72	37	13	29
10	Training for Driver Training Instructor	-	-	80	31	40	20	43	19	15	14
11	Workshop- Transport	600	708	752	681	600	638	515	786	975	1215
12	Youth Programme	1400	1655	1400	1576	1500	1607	1376	1942	1800	1371
13	Workshop- Domestic	705	927	700	867	800	929	1067	1152	1180	1084
14	KisanMela	80	80	80	55	60	83	91	64	110	30
15	Agricultural Workshop	600	716	600	594	600	649	602	718	780	667
16	Exhibition	120	112	152	167	120	133	105	68	72	107
17	Van Publicity Cycle	15	12	20	7	8	12	30	51	48	10
TOTAL		6380	6880	7368	7179	7088	7318	7694	8500	8798	7018

For the Agriculture activities, Gram Panchayats or Gram Sabha members are also involved during the rural programmes".

64. The Committee asked as to whether there is any link between national climate change policy with PCRA activities, the Ministry informed as given under:- (11.4)

"National Action Plan on Climate Change (NAPCC) outlines Eight National Missions, representing multi-pronged, long-term and integrated strategies for achieving key goals in the context of climate change.

The National Mission for Enhanced Energy Efficiency (NMEEE) is one of the eight national missions with the objective of promoting innovative policy and regulatory regimes, financing mechanisms, and business models which not only create, but also sustain, markets for energy efficiency in a transparent manner with clear deliverables to be achieved in a time bound manner. It also has inbuilt provisions for monitoring and evaluation so as to ensure transparency, accountability, and responsiveness.

The Ministry of Power (MOP) and Bureau of Energy Efficiency (BEE) were tasked to prepare the implementation plan for NMEEE. NMEEE spelt out the following four new initiatives to enhance energy efficiency in addition to the programs on energy efficiency being pursued.

- PAT (Perform Achieve and Trade)
- MTEE(Market Transformation for Energy Efficiency)

- EEFP (Energy Efficiency Financing Platform)
- FEED (Framework for Energy Efficient Economic Development.

PCRA is contributing in close collaboration with BEE to National Mission on Enhanced Energy Efficiency (NMEEE), through providing support to industries under PAT (Perform, Achieve & Trade) scheme".

PART-II
OBSERVATIONS / RECOMMENDATIONS

Recommendation No.1

Functioning of PCRA

During the oil shock in the early seventies, a Petroleum Conservation Action Group (PCAG) was set up in 1976 towards oil conservation in the country. It was later constituted as Petroleum Conservation Research Association (PCRA) in 1978 as a registered society under MoPNG with a mandate to promote conservation of petroleum products in the major sectors of the economy.

The Committee note that PCRA is engaged in promoting the conservation of petroleum products in various sectors of economy and assisting the Government in formulation of policies and strategies for petroleum conservation. PCRA conducts various field activities to reach the target groups by carrying out awareness campaigns, energy audits, studies on conservation of oil/gas, Institutional training programme, workshops, driver training programme, youth programme etc. The Committee have been informed that there is a potential to save 20 to 30 per cent in the Petroleum sector in the country by conservation efforts.

The Committee, however, are constrained to note that during last five years, PCRA could not achieve the targets set in many areas of Energy Audits, Fuel Oil Diagnostic Studies, service to small scale industries, Model Depot Projects etc. The Committee feel that PCRA is the only body entrusted with the activities of conservation of petroleum/natural gas and that failure of PCRA in achieving the targets has seriously hindered the efforts. The Committee therefore, recommend that PCRA should seriously pursue the targets set for various field activities and work towards removing all the hindrances in order to achieve the conservation objectives.

The Committee are also not satisfied with the overall functioning of PCRA as efforts to expand its presence and reach of organization to masses is not visible and the awareness about the activities carried out by it is also very low. The Committee observe that in view of climate change concerns caused due to the use of fossil fuels, it is imperative that the fuel conservation measures get the top most priority and the desired attention by the Ministry and PCRA. Moreover, in view of announcement and intention of the Government to reduce import dependence of crude oil, the role of organization like PCRA assumes more importance as it can play a significant role in achieving this objective. The Committee therefore, recommend that MoPNG should seriously review the role and functioning of PCRA thoroughly and revamp it completely to make it more effective in implementing their strategies of fuel conservation.

Recommendation No.2

Organizational structure of PCRA

The Committee note that PCRA which was set up in the year 1978 works with the support of public sector oil companies, government and non-government organisations, research institutes and laboratories and other organisations. There is a Governing Body (GB) which determines the policies, priorities, major activities and special areas of interests. The Secretary, MoPNG is the Chairman of GB and CMD's of Oil Sector PSUs and other senior officials of Government of India are its members. There is also an Executive Committee (EC) which is primarily responsible for promoting the aims and objectives of PCRA and implementing its plans and programs. The Additional Secretary of MoPNG is the Chairman of EC and Directors of Oil Sector PSUs are the members of EC. Representatives from National Productivity Council (NPC), Bureau of Energy Efficiency (BEE), Association of State Road Transport Undertakings (ASTRU), Indian Institute of Petroleum (IIP), Centre for High Technology (CHT), Associated Chambers of Commerce and Industry of India (ASSOCHAM) and Federation of Indian Chambers of Commerce & Industry (FICCI) are also members.

The Committee further note that Petroleum Conservation Research Association (PCRA) has its head office located in New Delhi and it has four sub offices and twenty regional offices at various locations with the total functional staff strength of 80 across the country out of which 32 persons work in head office, 30 in regional offices and 18 in field offices. It is observed that the field offices are essentially one man show and there is lack of state level mechanism for implementation of activities of PCRA. The Committee are unhappy at such poor deployment of manpower in PCRA and are to conclude that MoPNG is non-serious about conservation activities. The Committee, therefore, desire that PCRA should set up State Level mechanisms for carrying out conservation activities across the States and it should be strengthened with more manpower in line with expanded activities.

Moreover, the Committee observe that PCRA had established Conservation Technology Centre in Delhi in the year 2008 for dissemination of technology and is the only conservation centre of the country. Since the conservation of Petroleum resources has a strategic importance for the country, the Committee recommend that MoPNG/PCRA should explore the possibility of setting up more Conservation Technology Centres at regional/state level for better coordination and proper dissemination of conservation technology.

Recommendation No.3

Budgetary allocations of PCRA

The Committee note that PCRA gets its budget requirements through the grants received from Oil Industry Development Board (OIDB), Oil & Gas Conservation Fortnight (OGCF) Grants from Oil Companies etc.. The Committee observe that during the year 2013-14, PCRA received funds to the tune of Rs. 9031 lacs against which PCRA could utilize only Rs. 7244.75 lacs and Rs. 5953 lacs was utilized against budget of Rs. 6483 lacs in the financial year 2014-15. The Committee also observe that the funds spent on advertisement activities show a declining trend over the last two years and during the current year (2015-16) till

January, 2016, only Rs. 1644 lacs has been spent on advertisement activities which is less when seen in comparison to the Rs. 2990 lacs spent during the year, 2014-15. The Committee express their unhappiness over such under-utilization of budgetary/other grants by PCRA and desire that MoPNG should monitor the activities of PCRA and revamp the same in order to ensure the complete utilization of the funds allocated to them in an efficient manner.

The Committee further note that the impact assessment studies conducted by PCRA show that in most of its activities in various areas, the impact has been more than 80 per cent and the savings made by PCRA Campaigns appears to be encouraging. The Committee however, note that the budget provided to PCRA does not commensurate with the responsibilities and activities being handled by PCRA. The Committee therefore, recommend that the Ministry should ensure that PCRA gets more funds for its activities in order to ensure its expansion and effective functioning.

The Committee observe that the prices of crude oil have gone down drastically in the international market. At the same time, the Committee also note that the demand of petroleum products has increased substantially during the past few years. The declining prices of crude oil in the international market may give rise to the tendency of liberal use of petroleum products and the Committee feel that this is the right time to strike a balance between this increasing demand and conservation efforts in use of petroleum products. The Committee therefore, recommend that the Ministry/PCRA should launch a focused mass awareness campaign to achieve success in conservation efforts in the present situation.

Recommendation No.4

PCRA efforts in transport sector

The Committee note that the transport sector accounts for almost half of country's annual petroleum consumption and studies indicate a saving potential of around 20 per cent in the transport sector. As per an All-India study report

submitted to Petroleum Planning Analysis Cell (PPAC), 70 per cent of diesel and 99.6 per cent petrol is consumed in the transport sector alone. Of the total diesel sale, the highest consumption of 28.48 per cent is by cars, utility vehicles (UVs) and 3-wheelers. In case of Petrol, 99.6 per cent is consumed in the transport sector. Of this, majority consumption of 61.42 per cent is accounted for by two-wheelers while cars use 34.33 per cent followed by 3-wheelers at 2.34 per cent.

The Committee further note that to realize the conservation potential, PCRA conducts variety of Driver Training Programmes for State Transport Units (STUs), private fleet operators, organizations in private and public sector to promote efficient use of petrol and diesel in vehicles and through better maintenance practices, model depot studies, emission awareness programmes, exhibitions, workshops, etc. all over the country. The Committee observe that the driver training programmes organized for STUs and other agencies have proved to be very effective and it has been found that more than 70 per cent of the drivers trained are able to achieve fuel saving in the range of 9 to 11 per cent on a consistent basis.

The Committee, however, note that all the STUs and a maximum number of individual car owners have not been covered in the ambit of the Driver's Training Programme. In Committee's view, the conservation of fuel is in individual as well as national interest. Therefore, the Committee desire that a collaboration with local driving schools catering to common man should also be initiated alongwith maximum number of STUs so that better driving skills enhancing the conservation of fuel can be inculcated in the individual car drivers in the public at large. The Committee also suggest that for getting better results in this regard, PCRA should collaborate with State transport license issuing authorities for associating maximum number of people with the efficient use of petrol and diesel.

Recommendation No.5

Saving of fuels by improved roads

The Committee note that there is substantial wastage of fuel at the traffic signals. The traffic signals are now being fitted with the timers which provide a clear indication for the vehicle drivers for switching OFF or ON their vehicles for saving fuel during the waiting time at the signal. However, still a large number of traffic signals in the country are pending to be covered. The Committee feel that this is an effective method of saving significant amount of fuel annually and therefore, recommend that the PCRA should take up with the concerned authorities for expediting the process of fixing timers at various traffic signals especially in metro cities and educate the people about switching their vehicles off and on such signals.

The Committee note that international studies have shown that the quality and material used for construction of road contributes towards the varied fuel consumption. The Committee have been informed that concrete road surfaces can lead to about 1.14 per cent of fuel saving. Further, another study has shown that fuel consumption for asphalt pavements was much higher in comparison to concrete pavements. The Committee recommend that MoPNG/PCRA in collaboration with Ministry of Road Transport and Highways (MoRTH) should conduct such studies in the country and after analysis of the data collected in these studies should take action in this direction since the type of road appears to be one of the important factors for fuel conservation.

Recommendation No.6

Conservation activities in Agricultural and Domestic Sector

The Committee note that agricultural sector provides scope for conservation of petroleum products which can benefit the farmers. PCRA conducts activities like kisan melas, van publicity and educational programmes for students in agricultural colleges. So far, 649 and 718 agricultural workshops have been conducted during 2013-14 and 2014-15 respectively in collaboration with empanelled faculties and experts of PCRA. In this regard, the Committee

observe that replacement of the fossil fuels with renewable sources of energy can make agriculture more environment friendly. The Committee therefore, recommend that the Ministry/PCRA should collaborate with Ministry of Agriculture and its departments/agencies and Ministry of New and Renewable Energy to assess the possible ways for reducing/ replacing the use of fossil fuels by renewable energy resources in agricultural sector and educate the farmers, agricultural scientists etc., in this regard.

The Committee also note that in its activities under domestic sector, PCRA educates women on better cooking habits, use of fuel efficient stoves and lighting appliances, use of alternative sources of energy such as solar, bio-gas etc. in order to promote conservation of LPG, PNG and Kerosene. It conducts awareness workshops for women, college girls, cooks, housewives etc., where they are shown films and tips on energy conservation. The Committee note that there is immense scope to create awareness in the domestic sector and recommend that PCRA should develop apps for conservation and saving measures in the domestic sector and use social media tools to disseminate such information to public.

Recommendation No.7

Standard labeling procedures

The Committee note that, PCRA in association with Bureau of Energy Efficiency (BEE) has been providing star rating for various appliances as a standard labeling procedure. The objective of this programme is to achieve fuel savings at the consumer end by using fuel efficient appliances having Star Ratings from 1-Star to 5-Star. The Committee have been informed that this scheme is operational and vendor registration is underway. The Committee appreciate the step taken by the Ministry/PCRA/BEE and in view of the benefits of this star rating scheme, the Committee desire that the Ministry/PCRA/BEE should quickly increase the number of organizations covered under this star labeling programme. The Committee also desire that the details of the star rating for

appliances should be publicized widely to create awareness among consumers so that they may be able to select more energy efficient appliances.

Recommendation No.8

Research and development in the field of Energy Conservation:

The Committee note that the efforts for conservation of petroleum products in India were started around 1978. The Committee have further been informed that PCRA has been conducting research programmes from research organizations such as CSIR, IITs, IOC-R&D etc. as it does not have its own research centre. The Committee are of the view that PCRA is the nodal agency entrusted with the task of petroleum conservation in the country and must have its own Research and Development Centre alongside the research being carried out in other organizations. The Committee therefore, recommend that the PCRA should strive towards establishment of a world class Research and Development Centre to carry out R&D activities in the field of petroleum conservation in the country.

The Committee further observe that in countries such as Japan, the conservation efforts were started years after India adopted the strategy for petroleum conservation. However, at present, these countries are far ahead in the progress achieved in comparison to that in India. The Committee therefore, recommend that PCRA should make efforts to access the conservation technologies through international cooperation and adopt suitable technologies for obtaining better results in India. The Committee further desire that Ministry/PCRA should pursue and finalize the renewal of MoU in the field of Energy conservation with Energy Conservation Centre, Japan (ECCJ), Japan at the earliest.

Recommendation No.9

Publicity to the activities of PCRA

The Committee note that though PCRA is engaged in promotion of petroleum conservation programmes for conservation of fuel, still large sections

of public are not aware about its existence and its activities. The Committee therefore, desire that adequate publicity must be given to the activities of PCRA amongst the public at large so that they can contribute towards conservation of petroleum products. In this regard, the Committee desired that PCRA should focus its conservation related activities in educational institutions and schools. If simple conservation strategies are included in the school curriculum, better results can be achieved in conservation efforts as they will emerge as major consumers in future.

The Committee further observe that over the years, PCRA has designed conservation literature which provides the tips for saving of petroleum products for different types of users. The Committee desire that such a data bank should be made available on the web for easy access to the public and other agencies so that they can participate in the petroleum conservation efforts in an effective way. The Committee note that PCRA advertises its activities through various mass media to promote conservation of oil and gas. However, the Committee desire that to give better impact to the conservation programmes, elected public representatives and eminent personalities should also be associated with the promotion of PCRA activities.

New Delhi;
14 March, 2016
24 Falguna, 1937 (Saka)

PRALHAD JOSHI,
Chairperson,
Standing Committee on
Petroleum & Natural Gas.

MINUTES
STANDING COMMITTEE ON PETROLEUM AND NATURAL GAS
(2014-15)

ELEVENTH SITTING
(31.03.2015)

The Committee held its meeting on 31st March, 2015 from 1500 hrs to 1645 hrs in Room No. 62, Parliament House, New Delhi.

PRESENT

Dr. Bhola Singh - Chairperson (Acting)

MEMBERS
LOK SABHA

- 2 Dr. Ravindra Babu
- 3 Shri P. K. Biju
- 4 Shrimati Rama Devi
- 5 Shri Elumalai V.
- 6 Shri Naranbhai Kachhadiya
- 7 Dr. Thokchom Meinya
- 8 Shrimati Pratima Mondal
- 9 Shrimati Jayshreeben Patel
- 10 Shrimati Anupriya Patel
- 11 Shri Arvind Sawant
- 12 Shri Ravneet Singh
- 13 Shri Rajesh Verma
- 14 Shri Om Prakash Yadav
- 15 Shri Laxmi Narayan Yadav
- 16 Shri A.T. Nana Patil

RAJYA SABHA

- 17 Shri Mani Shankar Aiyar
- 18 Shri Bhubaneshwar Kalita
- 19 Shri Mansukh L. Mandaviya
- 20 Shrimati Gundu Sudharani
- 21 Shri Praful Patel

Secretariat

- 1 Shri A.K. Singh - Joint Secretary
- 2 Shri S.C. Choudhary - Director
- 3 Shri H. Ram Prakash - Additional Director

Representatives of the Ministry of Petroleum & Natural Gas

1	Shri Saurabh Chandra	-	Secretary
2	Dr. S.C.Khuntia	-	SS & FA
3	Shri A.P.Sawhney	-	Addl. Secretary
4	Shri Sandeep Poundrik	-	Joint Secretary

Representatives of Petroleum Conservation Research Association (PCRA)

1	Shri Nilkanth S. Avhad	-	Executive Director, PCRA
2	Shri Abhay Bakre	-	Ex- Executive Director, PCRA
3	Shri Rajeev Mishra	-	Director (PS), PCRA
4	Shri Sumant Kumar	-	Director (Tpt.), PCRA
5	Ms. Rashmi Dhingra	-	Director, PCRA

2. In the absence of the Chairman, the Committee chose Dr. Bhola Singh to chair the sitting under Rule 258(3) of the Rules of Procedure and Conduct of Business in Lok Sabha.

3. At the outset, Hon'ble Chairperson welcomed the Members and representatives of the Ministry of Petroleum and Natural Gas and Petroleum Conservation and Research Organisation to the sitting. Thereafter, the representatives of the Ministry/PCRA briefed the Committee on the subject. A power point presentation was also made by the representatives of PCRA highlighting its various activities and responsibilities.

4. The Committee then deliberated upon various aspects related to the subject such as activities carried out by PCRA for conservation of Petroleum products, advertisement of these activities by popular mass media, expenditure incurred on various activities of PCRA, achievement of objectives of PCRA in terms of fuel saved and in terms of monetary value, distribution and supply of energy saving equipments such as energy efficient gas stoves, reasons for non achievements of energy conservation potential, collaboration of PCRA with Bureau of energy efficiency, Conservation strategies promoted by PCRA in refining and exploration activities, Research and development activities of PCRA etc.

5. The clarifications sought by the Members on various points were provided by the representatives of the Ministry. However, on some of the points where the information was not readily available, the Hon'ble Chairperson instructed the Ministry to furnish the written replies to the Secretariat at the earliest.

6. A copy of the verbatim proceedings of the sitting has been kept for record.

The Committee then adjourned.

MINUTES
STANDING COMMITTEE ON PETROLEUM AND NATURAL GAS
(2015-16)
TENTH SITTING
(10.03.2016)

The Committee sat on Thursday, the 10 March, 2016 from 1000 hrs. to 1100 hrs. in Committee Room 'E', Parliament House Annexe, New Delhi.

PRESENT

Sh. Pralhad Joshi - Chairperson

MEMBERS

LOK SABHA

- 2 Shri Kalikesh N. Singh Deo
- 3 Shrimati Rama Devi
- 4 Shri Naranbhai Kachhadiya
- 5 Dr. Thokchom Meinya
- 6 Shrimati Pratima Mondal
- 7 Shrimati Jayshreeben Patel
- 8 Shri Arvind Sawant
- 9 Dr. Bhola Singh
- 10 Shri Rajesh Verma
- 11 Shri Om Prakash Yadav
- 12 Shri Laxmi Narayan Yadav

RAJYA SABHA

- 13 Shri Mani Shankar Aiyar
- 14 Shri Ishwarlal Shankarlal Jain
- 15 Shri Bhubaneshwar Kalita
- 16 Shri Mansukh L. Mandaviya

SECRETARIAT

1. Shri A.K.Singh - Additional Secretary
2. Dr. Ram Raj Rai - Director
3. Shri H.Ram Prakash - Additional Director
4. Shri Sujay Kumar - Under Secretary

2. At the outset, Hon'ble Chairman welcomed the Members to the sitting of the Committee. The Committee then took up for consideration the Draft Report on the subject, 'Functioning of Petroleum Conservation Research Association' and adopted the same without any modifications.

3. xxx xxx xxx xxx xxx xxx xxx xxx xxx xxx xxx xxx

4. The Committee then authorised the Chairperson to present/lay the Report in both the Houses of Parliament.

The Committee then adjourned.

xxx Matter not related to the subject.