

PETROLEUM CONSERVATION RESEARCH ASSOCIATION (PCRA) AND ITS ACTIVITIES

As a part of the Government's response to the oil crisis of early seventies, PCRA was set up in 1976 as a registered society under the aegis of Ministry of Petroleum and Natural Gas to promote conservation of hydro-carbons (fuels) through energy efficiency and awareness programs in various sectors of economy. As part of its mandate, PCRA is entrusted with the task of creating awareness amongst the masses about the importance, methods and benefits of conserving petroleum products & emission reduction for better health & environment and self-reliability of India.

Activities of PCRA:

PCRA approaches stakeholders and general masses with a comprehensive set of activities such as technical audits, workshops & meets, training modules etc. to cover a large spectrum of socio-economic profile of our country in different sectors through which it shares information and experience on innovation, newer technologies, reduction in waste, improvement in processes and behavioral changes resulting in energy intensity reduction and monetary savings. Sectoral conservation steps taken by PCRA are as follows:

1. Activities in Transport Sector:

Almost 42% of petroleum products are consumed by Transport Sector in India. Fuel/lubricants consumption in a vehicle depends on various factors like vehicular design, road conditions, traffic pattern, driving habits, and maintenance practices. Out of these, the quickest and cheapest way to saving fuels is by following good driving habits. Proper driving not only saves fuel but also reduces breakdowns and increases road safety. This also reduces the pollution levels due to reduction in vehicular emissions. Studies in this area have indicated that a saving potential of around 20% exists in the transport sector.

To realize this savings potential, PCRA conducts driver training programs for STUs, private fleet operators, organizations in the private and public sector to promote efficient use of petrol, diesel, lubricants and greases through better maintenance practices and better driving habits. Model depot studies are also conducted by PCRA, which is an integrated programme to study the existing management, infrastructure and maintenance practices of the depots and workshops of STUs and other fleet operators having low KMPL. The study comprises of a detailed analysis of all historical records of the depot and examination of the current condition of vehicles and providing suitable & specific recommendations for improving the systems with time bound action plans. To encourage STUs to adopt fuel saving measures propagated by PCRA, a group incentive scheme for 'STU wise Best Depot at State Level' and 'Best STU at National Level' has been initiated recently.

PCRA also networks with a large number of organizations viz. ASRTU, MoRTH, MoH&UA, CRRI, Indian Army, Air Force, Para Military Forces, Police Forces, Municipal Corporations, RTOs and various other fleet operators & automobile associations for propagating awareness on efficient utilization of petroleum products in the transport sector and conducts training programs, emission awareness programs, workshops/clinics etc. Recently, a special drive has been taken to impart training to the driving instructors of various driving training institutes/schools in the country.

2. Activities in Industry Sector:

The industry sector consumes about 26% of total petroleum products in India. PCRA activities in this sector focus on improvement in fuel efficiency through Energy Audits including PAT (Perform, Achieve & Trade) audits & ISO 50001:2011 Energy Management System audits, Fuel Oil Diagnostic Studies for medium and small-scale industries and Follow-up studies for the industries already audited. Besides this, awareness and competency building exercises are also taken up through seminars, workshops, training programs for industry personnel.

3. Activities in Domestic Sector:

Domestic sector consumes almost 13% of total petroleum products in India. The inter-ministerial working group has identified a saving potential of 30% in the domestic sector. The housewives/cooks and youths are the major target segments in this sector. PCRA's activities for the sector includes education of housewives/cooks on good cooking habits, educating housewives and youths on good driving habits, development of fuel efficient LPG stoves. PCRA also encourages use of alternate sources of energy such as bio-gas, solar etc. For reaching out to the target groups, PCRA networks with Mahila Mandals, AIWC, AIWA, Youth forums, various clubs, NGOs, Residents Welfare Associations and schools and colleges for conducting awareness programs.

To make young minds understand the importance of energy conservation and motivate them to apply and promote the cause of oil conservation into their widening spheres of domestic and professional lives, PCRA has joined hands with NCERT to develop a comic book on fuel conservation. Besides this, PCRA has developed a short animation film "Pollution ka Solution" targeting mainly children and youth depicting various aspects of fuel conservation in transport and domestic sectors in an attractive manner. The film is used for dissemination during various youth programs conducted by PCRA.

National Level Competition for school children: Children, being the future of India, are also motivated through National Level Painting, Essay and Quiz competitions. The completions are conducted pan India for class 5 to 10 students through a specially designed website portal. The essay competition is conducted in 23 Indian languages (Hindi, English, Urdu, Assamese, Bengali, Bodo, Gujarati, Kannada, Maithili, Malayalam, Oriya, Punjabi, Tamil, Telugu, Marathi, Sanskrit, Kashmiri, Konkani, Nepali, Santhali, Manipuri, Sindhi and Dogri). Final episodes of quiz competition are recorded and telecast on Doordarshan. Students win prizes ranging from study tour to Japan/Singapore, Laptop, Tablet and different Cash rewards. Last year, participation of about 82.50 Lakhs students across the country has been recorded, which is unprecedented.

4. Activities in Agriculture Sector:

Agriculture sector consumes almost 5% of the total petroleum products in India. To create awareness in the farming sector, PCRA reached out to the vast farming community through agriculture workshops, participation in agro fairs/exhibitions, kisan melas and through van publicities in rural/semi urban areas including gram panchayat level. Through these activities farmers are educated about the ways and means on conserving diesel through proper selection, operation and maintenance of tractors, lift irrigation pumps, engine drives, foot valves, pipes and fittings. Conservation tips are also conveyed to the farming community through printed literatures and through specially prepared educational CDs/DVDs on conservation measures in agriculture sector. Besides this, PCRA also networks with Agriculture Universities and Krishi Vigyan Kendras for dissemination of conservation measures to farmers.

5. Activities for Mass Awareness:

Mass awareness activities are conducted through Saksham Campaigns (earlier known as Oil & Gas Conservation Fortnight), Social Media campaigns, campaigns on TV, Radio & Newspapers, Exhibitions etc.

5.1 Saksham Campaign:

In order to provide sustained impetus on fuel conservation efforts, PCRA undertakes nationwide people centric mass awareness campaign, called "Saksham (Sanrakshan Kshamta Mahotsav) starting 16th January in association with PSU Oil & Gas Companies. During this one-month drive, various sections of society viz. students, youths, farmers, housewives, drivers, industrial workers, etc. are being engaged to profess and propagate the need to conserve by judicious utilization of petroleum products. Sectorial emphasis is being given towards inclusion of one & all in underlining and appreciating the individual's effort in reducing consumption of energy and lessening GHG emissions through multiple activities. The campaign starts by inaugural function held at New Delhi followed by inaugurations at various State capitals, where large number of dignitaries and public representatives participate for motivating masses to adopt fuel conservation. Some of the activities carried out during last year campaign are as below:

- **Cycle Day:** Cycle Day was observed in 187 cities throughout the country on 21st January 2019 in which approximately 2 lakh people participated.
- **Saksham Cyclothon:** PCRA and Oil & Gas public sector undertakings jointly organized Saksham Cyclothon at Delhi, where approximately 6000 cyclists participated. Many dignitaries also attended the program.
- **Walkathons:** Walkathons were organized at petrol pumps and LPG distribution agencies and gas stations throughout the country. About 73 thousand people took part in 265 programs.
- **Fuel Saving Concerts:** Fuel Saving concerts, a special campaign to spread awareness among the people through cultural programs, were organized in the States. Through this program, local people were provided the opportunity to demonstrate their talents. Twenty-two such programs were organized during the campaign period.
- **Group talk for School/College Students:** Keeping in view the vital role of youth in fuel conservation, "Group Talks" were organized in rural and urban schools to make students aware towards fuel conservation. Under this, about 10 lakh students participated in 9775 programs.
- **Group talk at Retail Outlets & CNG Stations for drivers coming for refilling:** Group Talks were organized at the petrol pumps and CNG filling stations to promote awareness on the efficient use of petroleum products in the transportation sector. The drivers, who came to fill petrol or CNG on the pump were told about the fuel efficient driving habits. About 2.25 lakh people participated in 7900 programs.
- **Workshops for STUs/Fleet Operators (Organized/Unorganized Sector):** Workshops were organized for drivers of heavy vehicle to raise awareness level of fuel efficient driving. About 41 thousand drivers participated in 455 programs during the campaign period.

- **Agricultural Workshops for Farmers:** Agriculture workshops were organized at petrol pumps located in the rural areas for promoting fuel conservation among the farmers. Total 70 thousand farmers participated in 1211 such programs.
- **Group Talk for Housewives/Cooks at RWAs:** In urban areas of the country, group talks were organized for consumers of domestic LPG, which are mainly housewives and cooks, to educate them on fuel saving methods in the kitchen and on the efficient use of domestic equipment. Along with this, they were also encouraged to use alternative sources like star rated stoves, bio-gas and solar heaters. About 2.2 lakh housewives and cooks, took part in 2400 programs.
- **LPG Panchayat for Housewives at Villages:** Consumer base of domestic LPG is being expanded to the remote areas of the country through the 'Ujjwala' scheme by the Government of India. For these new consumers, mainly homemakers and cooks, LPG Panchayats were organized for educating and spreading awareness on the efficient use of LPG through fuel saving methods in the kitchen. About 5.6 lakh homemakers and cooks participated in 3700 such programs.
- **Fuel Efficient Car & Truck Driving Contest:** In order to increase awareness of fuel efficient driving techniques among drivers, 24 Fuel Efficient Driving Contests for Car and Truck Drivers were organized across the country during the campaign. The participants who spent least amount of fuel for planned distance, were declared winners and awarded suitably.
- **Graffiti/Wall Painting in Colleges:** Graffiti and wall painting competition was organized among students to spread message of conservation in the colleges of state capitals with the aim of making these students the torchbearers of fuel conservation campaign. In this competition, college students took part enthusiastically and demonstrated awareness for conservation through their paintings. Total 37 such programs were organized in 11 States. The best painting in every state was rewarded.
- **Pollution Checking of Industrial Equipment in Plants:** Pollution is directly linked with fuel consumption. If an equipment is adding to more pollution, then fuel consumption of the equipment would also be high. Therefore, it is necessary to check the equipment from time to time. During Saksham-2019, the upstream and downstream petroleum companies had tested pollution level of their equipment and mitigation actions had been taken.
- **Fuel Efficient Cooking competition:** Fuel Efficient Cooking Competitions were organized with the aim of motivating homemakers to save LPG while preparing food. The homemaker who made tasty food with least use of gas was declared winner. About 14.5 thousand participants took part in such competitions organized at 103 places.

Participants in all the above programs took a conscious pledge to practice and render their support for the cause of fuel conservation.

5.2 Mega media campaigns:

Media campaigns are run nationwide on Doordarshan, All India Radio, Lok Sabha TV, various FM Channels, various TV channels, and Digital Cinemas educating people about the need for fuel conservation during Saksham campaign. Appeal of Hon'ble Minister of P&NG is also aired on Radio channels across the country. A radio program "Urja Ek Aas" has been latest inclusion in the media campaign of PCRA.

5.3 Social media campaigns:

To reach out to general masses, PCRA also utilizes various social media platforms with trending activities, fuel conservation and environmental protection tips via different content buckets and creatives, regular contests to engage the audience and convey eco-friendly ideas, campaigns on important days etc. Trending activities are also done from time to time on different occasions. Contests are also run on MyGov. platform to engage masses on fuel conservation related topics. Short film making contest "Cycle ki Kahani, Aapki Jubani" was also run at MyGov. platform during the Saksham campaign.

5.4 Exhibitions:

PCRA participates in various exhibitions, which provide an interface with the target audience for increasing awareness for judicious use of petroleum products. PCRA exhibits its in-house capabilities and expertise by displaying information about successful case studies on services provided to various sectors. In addition to participation in various State level exhibitions, PCRA is a regular participant in some of the major exhibitions such as India International Trade Fair, Petrotech, Vibrant Gujarat, Jawaharlal Nehru National Science, Mathematics and Environment Exhibition, Agro World Fair etc.

6. Activities in R&D:

PCRA promotes R&D aimed at petroleum conservation & environment protection and support & facilitate efforts for adoption and dissemination of fuel efficient technologies and substitution of petroleum products with alternate fuels and renewable. Over the years, PCRA has sponsored more than 142 successful R&D projects in Industrial/Transport/Agricultural/Domestic sectors, biofuel development and development of technologies for solid waste management. Patents and copy rights have also been obtained for few of the successful projects.

7. Policy initiatives

PCRA also functions as a think tank to the Govt. of India for proposing policies and strategies on petroleum conservation and environment protection aimed at reducing excessive dependence on oil. Some of the recent policy initiatives, which are at various stages of implementation are Fuel Efficiency Norms for Heavy Commercial Vehicles and Light & Medium Commercial Vehicles.

Another remarkable policy decision adopted by the Govt. is on necessitating heavy duty vehicle drivers to undergo practical training program on fuel efficient driving before they are given the driving licence by the concerned authority. PCRA has also developed a standard test protocol for Fuel Additives used by oil marketing companies, a significant dimension in streamlining the current unorganized additive protocol in the country, which will add to fuel efficiency significantly. Mandatory star rating program for domestic LPG stoves is another important policy initiative of PCRA, being worked out by the Government agency for implementation.

Tips for fuel conservation for individuals: Some of the conservation tips that would help reduce individual's fuel consumption are:

➤ Conservation while cooking:

- Switch to star labeled/ISI mark Domestic LPG
- Use pressure cooker to cook faster and save fuel.

- Light the stove only after assembling all cooking items.
- Use optimum quantity of water.
- Reduce the flame once boiling starts.
- Cereals should be soaked in water before cooking.
- Use only broad based vessels.
- Place a lid on an open vessel before cooking.
- Small burner on gas stove is more efficient.
- A bright steady flame means efficient cooking.
- Clean stove burner at regular interval.
- Do not keep food items straight from the refrigerator on the gas burner.

➤ **Conservation while driving:**

- Turn off the engine at long light.
- Do not drive fast. Drive safely at moderate speeds and avoid aggressive starts and stops.
- Do not idle engine when the vehicle is stationary.
- Drive in correct gear for fuel efficacy. Maximize use of top gear for better mileage.
- Stop your vehicle gently by anticipating stops and bends.
- Use clutch pedal only to shift gears. Avoid using it as a footrest.
- Use Car-Pool/Public transport system.
- Reduce your use of power- consuming features (i.e. air conditioning) to reduce the extra load on the engine.
- Lighten your load when possible and avoid lugging around extra weight.
- Plan your route/plan your trips.
- Always keep the engine in good condition. Keep up with your vehicle's maintenance schedule.

Walking and cycling can bring great health benefits in addition to saving fuel.
