

newsTRAC

NEWSLETTER FOR TECHNICIANS IN REFRIGERATION AND AIRCONDITIONING (RAC) SECTOR

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Editorial Team:

Prof. R. S. Agarwal, Retd. Prof., IIT Delhi

Mr Karan Mangotra, Associate Director, TERI

Mr C. J. Mathew, RASSS

Ms Smita Vichare, GIZ-Proklima

Mr Shaofeng Hu, UNEP

Dr. Amit Love, Joint Director, Ozone Cell, MoEF&CC



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Forest & Climate Change
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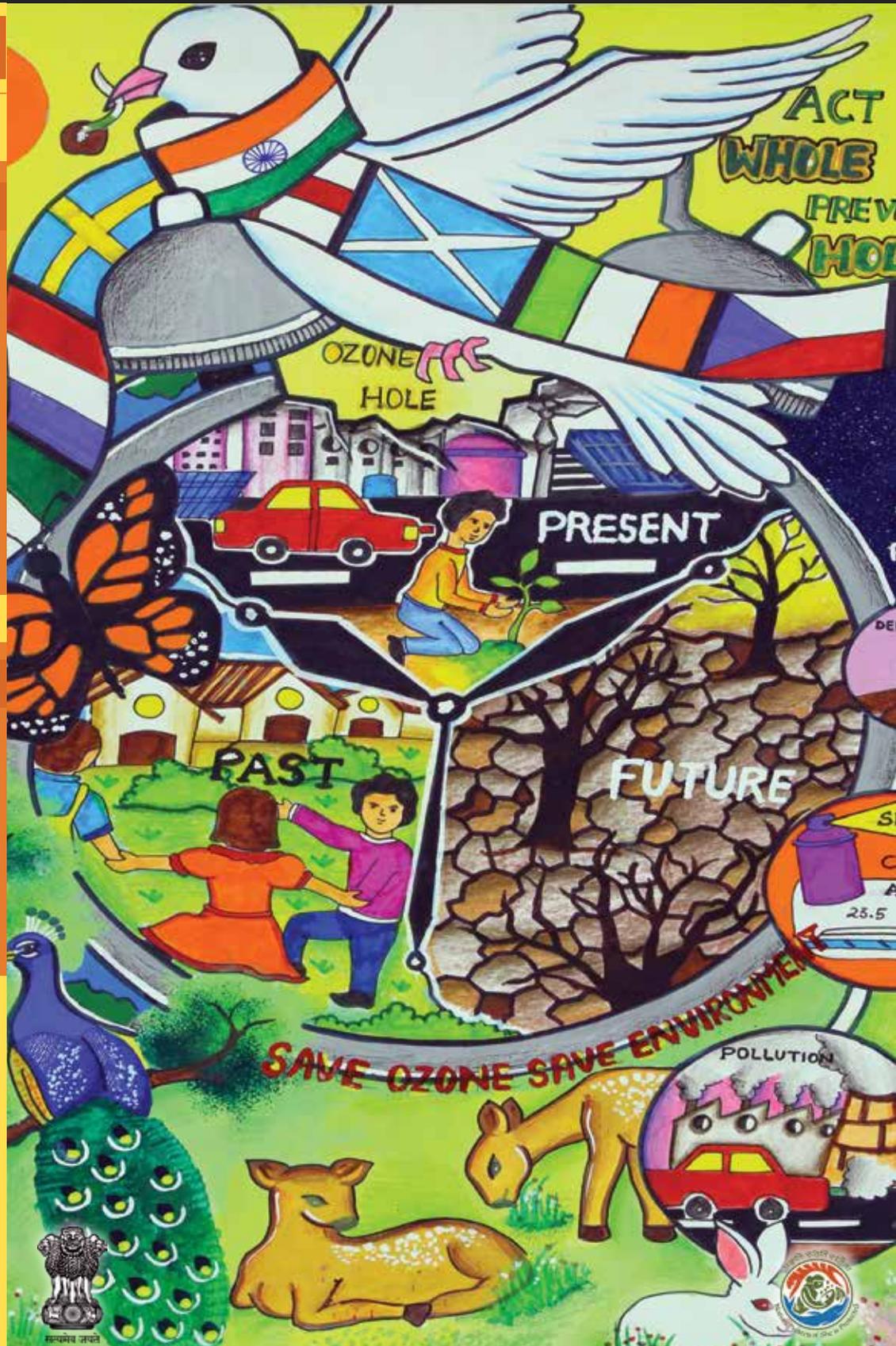


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1st Prize winner Supriya Baital, Birla Vidya Niketan, New Delhi for
World Ozone Day 2019 at New Delhi



Foreword

Dear Reader

The Government of India envisions robust refrigeration and servicing sector through constant upskilling and certification of technicians. The HCFC Phaseout Management Plan (HPMP) Stage II along with the Skill India Mission – Pradhan Mantri Kaushal Vikas Yojana (PMKVY) are important programmes under which actions are synergized for training of technicians for securing environmental as well as socio-economic benefits.

It is imperative that various stakeholders come together to ensure a robust skill training ecosystem. Upskilling and certification of technicians is not only critical for enhancing their income but also beneficial to the environment by reducing refrigerant consumption and energy consumption. The theme for the latest Issue of NewsTRAC revolves around the challenges and opportunities for RAC service technicians.

The Issue covers major challenges faced by servicing technicians in the field, and also suggests mechanism to overcome these challenges. It also enables technicians to improve their knowledge and skills, by familiarising them with the correct usage and handling of the requisite equipment. Underscoring the need for adoption of good service practices, the Issue includes the various opportunities for technicians to enhance their income and employment opportunities. There is an article on “Opportunities in Servicing Sector Skilling, Certification and Access to Finance”. There is a separate tear-off simple guide on availing MUDRA loans. MUDRA loan is an important enabler for those RAC service technicians seeking self-employment and those who need investment for tools and equipment required for servicing. The loan was launched to help with the initial investment and operational financial requirements of Micro, Small and Medium Enterprises.

I congratulate The Energy and Resources Institute, GIZ and the United Nations Environment Programme for bringing out the eighth Issue of this newsletter.

My best wishes to all NewsTRAC readers.

Geeta Menon
Joint Secretary
Ministry of Environment, Forest & Climate Change

GOOD SERVICING PRACTICES AS AN ENABLER OF ENVIRONMENT CONSERVATION FOR RAC TECHNICIANS

Alvin Jose & Shaofeng Hu, UN Environment (OzonAction)

R-22 (HCFC-22) is one of the most commonly used refrigerants in Air-Conditioners (ACs). Most of the new domestic (room) ACs that are entering into the Indian markets are based mostly on R-410A (HFC blend – a mixture of R-32 and R-125). In recent years, the installation of R-32 (HFC) and R-290 (Hydrocarbon) based ACs are observed to be increasing, especially R-32 base split AC systems. R-22 is an ozone depleting substance and its emission into the atmosphere damages the ozone layer and also contributes to global warming. The Ozone layer is important for protecting earth and its ecosystems from the harmful ultraviolet radiations from Sun. Therefore, it is important to acknowledge the impact of R-22 refrigerant on the environment and the important role that AC servicing technicians that play in minimizing leakage of R-22 during installation and servicing.

Currently, HCFCs are being phased-out in India under the Montreal Protocol by 2030. A certain amount¹ of HCFCs will be allowed to be used for servicing sector until 2040. Hence, in the future it is expected that availability of R-22 will decrease and it will become costlier. This would mean that the servicing of R-22 based systems would become more expensive for end-users and they would have to eventually replace them. Therefore, application of Good Servicing Practices allows R-22 systems to have longer operating life and save costs for end-users. Good Servicing Practices is also beneficial to technicians as they can save costs on virgin R-22 refrigerants and other resources such as copper while providing good quality job for their customers.

Ozone Cell, Government of India in cooperation of the United Nations Environment Programme (UNEP) and GIZ Proklima has been supporting and encouraging AC technicians to take up Good Servicing Practices that would not only reduce the R-22 emission during maintenance but also ensure good quality job to retain customers that is necessary in a price sensitive market of India.

1. What are Good Servicing Practices ?

Good Servicing Practices are steps that should be followed by technicians when installing and servicing R-22 based ACs for achieving the following main objectives:

- Avoid emission of R-22 through good servicing practices including recovery, recycling and reclamation of refrigerants
- Safe use and handling of alternatives to R-22

A quick summary of the main steps of Good Servicing Practices are:

¹ 2.5% of India's HCFC baseline from 2030-2040.

- 1. Recovery of R22 :** ensuring that refrigerant that is in the system is well recovered and reused where possible. Avoid venting of HCFCs.
- 2. Cleaning and Flushing:** once HCFCs are recovered, it is important that the system is flushed with oxygen free dry nitrogen (OFDN) to ensure that there are no contaminants in the system that could affect its performance.
- 3. Repairs/Copper Tube operations:** in this step the technicians undertake necessary steps to the repair the leakages in the system. Some of the main steps that is carried out are copper tube operations such as cutting, bending, brazing and sealing process.
- 4. Choke Testing:** After the required repairs, it is necessary to flush the system with pressurized oxygen free dry nitrogen gas to ensure that no choking has taken place due to improper brazing.
- 5. Pressure Testing:** oxygen free dry nitrogen at higher pressure to ensure that there is no leakage at working pressures of the refrigerant.
- 6. Leak Detection:** during pressure testing , check if there is any leakage. This could be then detected through various methods. For example, soapy bubble, nitrogen leak detector, electronic leak detector.
- 7. Evacuation:** deep vacuuming of the system to ensure that all non-condensable, contaminants and moisture is removed from the system and vacuum is hold to double check that there is no leakage.
- 8. Charging of Refrigerants:** charging of HCFC is done through measuring the weight and not by estimation to avoid undercharging or overcharging of the systems.
- 9. Sealing Process and Leak checks:** after the charging is completed, the process tube should be sealed. For instance, brazing of window ACs and tightening of valves in split ACs and conduct leak checks.
- 10. Good operation and installation check:** ensuring that the AC is well repaired/installed by checking grill temperature, compressor current and extraneous vibrations.

The above mentioned are the main steps that technicians need to undertake to ensure good servicing practices. This can ensure significant mitigation of unwanted emissions and can help the RAC technicians in contributing towards environment conservation. However, each of the above-mentioned processes have specific good practices that should be considered which is not detailed here. It is also to be noted that Good Servicing Practices also focuses on safe use of alternatives in addition to environmental protection.

ONGOING TRAINING PROGRAMMES FOR RAC TECHNICIANS

Ms. Smita Vichare, GIZ-Proklima

Room air-conditioner consumes high energy as compared to the other household appliances. The good service practice is important due to environmental issues and to maintain the design energy efficiency of the air-conditioners. Efficiency of the appliances decreases due to age, defects and poor service practices. The quality of servicing room air-conditioner depends on knowledge & skill levels of technicians and using appropriate equipment & tools.

The international environment treaty Montreal Protocol on substances that deplete the Ozone Layer was signed to reduce the ozone depleting substances (ODS) in the atmosphere by implementing control measures to phase-out ODSs. The Protocol was ratified by India in 1992. The production and consumption of ODSs like CFCs, CTC and halons are already phased out globally, including in India. GIZ - Proklima on behalf of the Government of Germany and in close co-operation with the Ozone Cell in the Ministry of Environment Forests and Climate Change (MoEF&CC) is implementing the HCFC phase-out activities in the Indian RAC servicing sector. The phase out activities are implemented under the India’s HPMP Stage – II (2017 – 2023) project.

The consumption in the servicing sector will be reduced mainly through training on better servicing practices & leak prevention but service technicians also need to be prepared

on the appliance with alternative refrigerants like HC-290, HFC-410a and HFC-32 being introduced in the market. GIZ Proklima is conducting training programs for the RAC technicians in the country with support of Training Partners and team of trainers. The training programs (include theory and practical / hands on training), primarily the topics included are - importance of good service practices like refrigerant recovery and system pump down process, refrigerant handling and piping work, cleaning, flushing and pressure testing. System evacuation and refrigerant charging methods, steps for installation and servicing of the room air conditioners. Duration of the training is for two days. In order to register for the training, technicians must contact the training partners, whose details are mentioned below. You can also visit <http://ozonecell.in/> for more information on the training. Following is the detailed calendar for the upcoming training programmes by GIZ, under HPMP-II.

Under HPMP-II, about 16,000 RAC technicians will be trained, resulting substantial emission reduction. We live in an ecosystem, where emerging technologies and new equipment are entering the sector daily. Thus, it is important the RAC technicians undergo the training to ensure their skills and knowledge is updated. Skilling of the RAC service technicians has the twin benefit of environmental protection and livelihood enhancement.

State	Training Partner	Training Dates	City	Partner Details
Andhra Pradesh & Telangana	Maega Services	21-22 Oct 2019	Mandapeta	T. Veerender nath Maega Services H.No: 3-3-780/B, Kuthbiguda, Hyderabad-500027 Phone No: 040 24653602 Mobile No: 9849203750 Email: tvnath@rediffmail.com
		23-24 Oct 2019	Amalapuram	
		25 - 26 Oct 2019	Eluru	
		29 -30 Oct 2019	Tadepalligudem	
		31 Oct-1 Nov 2019	Machilipatnam	
		2 - 3 Nov 2019	Cherala	
		7 - 8 Nov 2019	Adilabad	
Chandigarh and Northern States	Anant Enterprises	16-17 Nov 2019	Chandigarh	Anant Wadhwa Ho: 5397/1, Modern Residential Complex, Manimajra-160101. Chandigarh (U.T.) Office: Shop No. 782/15, Khalsa Market, Opp. Community Centre, Gobind Pura, Manimajra Mobile No.: +91 98123 02544 E-mail ID: dj.anant@ymail.com
		10-11 Oct 2019	Hissar	
		12-13 Oct 2019	Rohtak	
		31 Oct - 1 Nov 2019	Udhampur	
		9-10 Nov 2019	Fazilka	
		2-3 Nov 2019	Pathankot	
		19-20 Oct 2019	Baddi	

State	Training Partner	Training Dates	City	Partner Details
Delhi	KeyPath	18-19 Oct 2019	Delhi	Mr. Rao Key Path India Pvt Ltd. Plot No: 143, 02nd Floor, F.I.E, Patparganj, Delhi - 110092 Tel : 011-49090613, Mobile No.: +91 9873001382 Email : rao@keypath.in keypathindia@gmail.com
		01-2 Nov 2019	Delhi	
		08-09 Nov 2019	Delhi	
		11-12 Nov 2019	Delhi	
		15- 16 Nov 2019	Delhi	
Madhya Pradesh and Chattisgarh	Divyansh Services			Anita Mishra Divyansh Services 19, Swadesh Nagar, Behind Ashoka Garden Police Station, Bhopal, Madhya Pradesh, PIN-462023 Mobile No.: +91 9826620890 Email: Arunmishra71@rediffmail.com
		12-13 Oct 2019	Ujjain	
Maharashtra and Goa	Max Cooling Systems	10 - 11 Aug 2019	Pune	Mathew Abraham, Max Cooling Systems 2.Butte Patil Residency 363/5 Shivajinagar, Pune 411005 Phone No.: 020- 25534737 Mobile No.: +91 9422011095 Email: maxcoolengg@yahoo.com
		12 - 13 Oct 2019	Nasik	
		26-27 Oct 2019	Aurangabad	
		9-10 Nov 2019	Kolhapur	
		23-24 Nov 2019	Kolhapur	
		7-8 Dec 2019	Ratnagiri	
		21-22 Dec 2019	Mangaon	
Odisha	Mishra Refrigeration	04 - 05 Oct 2020	Bhubaneswar	S K Mishra SD-2, V.S.S. Nagar Bhubaneswar-751007 Mobile No.: +91 9861035473, 9437668720 Email: sunilformr@gmail.com
		19 - 20 Oct 2019	Brahmapur	
		22 - 23 Oct 2019	Rayagada	
		25 - 26 Oct 2020	Bhubaneswar	
		2 - 3 Nov 2019	Sambalpur	
		5 - 6 Nov 2019	Raurkela	
		08 - 09 Nov 2019	Keonjhar	
		30 Nov & 1 Dec 2019	Bhadrak	
		3 - 4 Dec 2019	Mayubhanj	
		7 - 8 Dec 2019	Puri	
		14 - 15 Dec 2019	Cuttack	
17 - 18 Dec 2019	Paradeep			
Tamil Nadu and Puducherry	Sakthi Refrigeration & Air-conditioning Enterprises	12-13 Oct 2019	Chithambaram	Mr.R.Kamala Kannan, M/s Sakthi Refrigeration & Air- conditioning Enterprises, 0/1,-Kanakkur Street,(Near) Venkateswara Theatre, Thiruvottiyur, Chennai- 600019 Mobile No.: +91 9840369337 Email: r.kamalakannan@india.com
		19-20 Oct 2019	Pondicherry	
		2-3 Nov 2019	Villupuram	
		16-17 Nov 2019	Vellore	
		23-24 Nov 2019	Chennai	
		30 Nov & 1 Dec 2019	Chennai	
		7 - 8 Dec 2019	Chennai	
		14-15 Dec 2019	Chennai	
21-22 Dec 2019	Chennai			

State	Training Partner	Training Dates	City	Partner Details
Uttar Pradesh	Isha Enterprises	12 - 13 Sept 2019	Raebareli	Mr. Rajesh Misra Isha Enterprises A-1/3, Sector-B, Aliganj, Opp. Aliganj Post Office, Lucknow - 226 024. Mobile No.: +91 9415024423, 9956297523 Email: Isha.enterprises@rediffmail.com
		14 - 15 Sept 2019	Raebareli	
		22 - 23 Sept 2019	Allahabad	
		5-6 Oct 2019	Lucknow	
		20-21 Oct 2019	Faizabad	
		22-23 Oct 2019	Ambekar Nagar	
West Bengal	Crystal Refrigeration Co	31 Aug & 1 Sept 2019	Kolkata	Navin Lamba 7, A.J.C. Bose Road, Kolkata 700017, West Bengal, India Mobile No.: +91 98308-20848, 2287-6488, 4600-4780 Email: crystalrefrigeration@gmail.com
		7-8 SEP 2019	Kolkata	
		28-29 SEP 2019	Kolkata	
		18-19 OCT 2019	Kolkata	
		14-15 NOV 2019	Chinsurah	
		16-17 Nov 2019	Chinsurah	
		23-24 Nov 2019	Burdwan	
		25-26 Nov 2019	Burdwan	
		27-28 Nov 2019	Durgapur	
		29-30 Nov 2019	Durgapur	
		01-02 DEC 2019	Asansol	
03-04 DEC 2019	Asansol			
Gujarat	Kirti Freeze	12-13 Oct 2019	Baroda	Naranbhai M Patel Kirti Freeze /Zeel Power Systems / Kirti Freeze No.1, Ghadhvi House, Nr.Ramji Mandir, B/h. Navrangpura Policestation, Navrangpura Gam, Ahmedabad-9. Mobile No.: +91 9825414212 / 9426301242 Email: zeelpower@sify.com; zeelwater@gmail.com
		23-24 Oct 2019	Ankleshwar	
		30 Nov & 1 Dec 2019	Surat	
		7-8 Dec 2019	Bardoli/ Navsari	
Rajasthan	Bohra Services	12-13 Oct 2019	Jaipur	Surendra Bohra Bohra Services 62-63, Gem Enclave, Setu Path, Pradhan Marg, Malviya Nagar, Jaipur (Rajasthan)-302017 Mobile No.: +91 9414066848 Email: surendra.bohra@galaxyens.com; surandrabohra@gmail.com
		19-20 Oct 2019	Kota	
		21-22 Oct 2019	Kota	
		15-16 Nov 2019	Jodhpur	
		17-18 Nov 2019	Jodhpur	
		24-25 Nov 2019	Jaipur	
Assam & NE region	Kuwalaty Coolers	9 - 10 Nov 2019	Nagaon	Mr. Devajit Talukdar/Mr. P. Mazumdar House no. 232, A.T. Road, Kamakhya Gate, Guwahati, Assam - 781010 Mobile: +91 9957188906, 9864017889 Email: k.kuwalatycoolers@gmail.com; kwalatycoolers@rediffmail.com
		16-17 Nov 2019	Tezpur	
		19-20 December 2019	Agartala	
		21-22 Decembr 2019	Agartala	

State	Training Partner	Training Dates	City	Partner Details
Kerala	V.R. Enterprises	21-22 Nov 2019	Kanghangad	V.Vijayakumar 301, Akaria Arcade, Ayyappan Kavu, Chittoor Road, Ernakulam, Cochin - 682 018 Mobile +91 9447464821 Email: vijayakumar_vk54@yahoo.co.in
		23-24 Nov 2019	Kannur	
		30 Nov & 1 Dec 2019	Palakad	
Jharkhand	A K Enterprises	7-8 Dec 2019	Bokaro	Anil Kumar Pavithran Plot No - D/6, Center Market Sector - 5, Bokaro Steel City, Jharkhand-827006 Mobile No.: +91 9431379078,8651020355 Email: chinchu_anil@yahoo.in
		14-15 Dec 2019	Ranchi	



OPPORTUNITIES IN SERVICING SECTOR: SKILLING, CERTIFICATION AND ACCESS TO FINANCE

By Dr Amit Love *, Sharad Kumar Chouriha *, Dr R. S. Agarwal, Retd. Professor, IIT Delhi

1. Background

With the increase in number of installed air conditioners the requirement for servicing of refrigeration and air-conditioning (RAC) equipment is increasing. In recent years, every service technician needs to handle variety of refrigerants like HCFC-22, R-32, R-290, R-410A, etc. The country is phasing out HCFC – 22 refrigerants as per the Montreal Protocol schedule. Most of the alternative refrigerants especially the single component refrigerants are flammable or of high pressure. Therefore, knowledge and thorough understanding of alternative refrigerants to HCFC-22 is a must.

In addition, with the rapidly increasing penetration of inverter technology based energy efficient room air conditioner model, which use relatively complex electronic components, in the country, the need for upgradation of technical knowhow / skills is becoming a necessity for the refrigeration and air conditioning (RAC) service technicians. The servicing sector is going through a transition and faced with several challenges that need to be addressed.

The servicing sector needs to handle, install and service Room air conditioners using a number of alternative technologies; each of these technologies have their own requirements in terms of operating pressures, charge quantities, lubricating oil, safety requirements, etc. There are safety concerns owing to use of flammable refrigerants within the industry. The simultaneous implementation of phase-out of HCFCs and the introduction of low-GWP technologies is becoming challenging, especially for the servicing sector.

It is important to develop an enabling environment for the servicing sector, in order to prepare the service technicians for seamless transitioning of the sector from current level to a level where servicing technicians are equipped with both the skills, tools and equipment for handling of upcoming new alternative refrigerants, and electronic components.

2. Training and Certification of Refrigeration and Air-conditioning (RAC) service technicians

In order to address the technological challenges posed by introduction of multiple alternative refrigerants and further

penetration of energy efficient technologies including inverter technology. The following are required for training ecosystem¹:

- Creation and/or upgradation of existing training centres;
- Equipment support to the Training Centres;
- Development of pool of trained trainers;
- Development and updation of training curriculum;
- Certification of technicians;
- Awareness among the technicians to them motivate for training;
- Outreach to the technicians across the country;
- Training material and technician service manuals in regional languages;
- Development of mechanisms for financial support and/or to facilitate the technicians for purchasing tools and equipment for practicing GSPs and handling flammable refrigerants.

Most of the technicians engaged in the servicing sector are from the unorganized sector without formal technical education and have learnt by working in the field over several years. The upgradation of skills of these servicing technicians and their certification under National Skill Qualification Framework (NSQF) would not only prepare them to address challenges associated with servicing of RAC equipment having different alternative refrigerants and electronic components but also go a long way to continue their livelihoods. It would also enhance employment opportunities within the country as well as overseas.

Skilling and certification also have significant environmental benefits of reducing refrigerant leaks and maintaining energy efficiency of in-use equipment². A critical requirement for translating the skilling on good servicing practices and knowledge of alternative refrigerants is the availability of complete set of tools and equipment with the trained technician. Often, in the informal sector the service technicians lack in tool and equipment due to financial resources. The Government has dovetailed the skill ecosystem under NSQF with the access to finance under Pradhan Mantri Mudra Yojana (PMMY).

* Ozone Cell, Ministry of Environment, Forest and Climate Change (MoEF&CC)

3. Linkage of Certification under National Skill Qualification Framework (NSQF) with Pradhan Mantri Mudra Yojana (PMMY) for Mudra Loans.

(Adapted from National Skill Development Corporation (NSDC) website³)

Pradhan Mantri Mudra Yojana (PMMY) has opened channels for formal and subsidized access to credit to the youth of the country. The objective is to cater to the bottom of the pyramid of society and support young skilled workers to become first generation entrepreneurs and facilitate the expansion of existing small businesses, too. It would enable many candidates, post the completion of training to set up their own business, which were deprived due to no formal-subsidized access to credit. There is need for having convergence between skilling and certification with access to credit for empowering the service technicians.

3.1 How the linkage Works?

1. **Pradhan Mantri Kaushal Kendra** (PMKKs) centre function as nodal centre for all Pradhan Mantri Kaushal Vikas Yojana (PMKVY) certified candidates in the district. PMKK are be responsible for handling the potential entrepreneurs in accessing the Mudra Loan.
2. **Pradhan Mantri Kaushal Kendra** (PMKKs) have been mapped as "Handholding Agency "(HHA) on Small Industries Development Bank of India (SIDBI's) Udyamimitra Portal <https://portal.udyamimitra.in/>
3. Provision of loan through Pradhan Mantri Mudra Yojana (PMMY) and supply of skilled individuals who wish to become entrepreneurs through **Pradhan Mantri Kaushal Kendra** (PMKKs), coupled with handholding support by PMKKs.

3.2 What is Handholding Support?

Any entrepreneur requires guidance to set up his or her business enterprise starting from training and certification under Pradhan Mantri Kaushal Vikas Yojana (PMKVY) to filling up loan applications as per bank requirements. Pradhan Mantri Kaushal Kendra (PMKKs) shall facilitate by providing step by step guidance with specific expertise viz. Skilling, Mentorship support, Entrepreneurship.

3.3 Process Flow for Training centres / PMKKs Providers to Facilitate Entrepreneurs ⁴

- Selection of suitable project keeping in view the availability of necessary skills/expertise, financial and managerial capabilities, market survey and viability of the project
 - Preparation of project report including linkage with available schemes for financial assistance (e.g. PMMY, PMEGP, assistance schemes of Central/State Government, Banks etc.)
 - Creation of the Proprietorship firm/ Partnership firm/ Limited Liability Partnership (LLP)/ Company/ Society/ Self Help Group (SHG) etc.
 - Sanction of loan and application(s) under the concerned financial assistance scheme(s).
- The RAC service technicians trained under NSQF can access MUDRA loans where NSQF certificate could be inter alia considered as a collateral for the loan⁵. The certified RAC technicians under NSQF should utilize the option of using finance available, where appropriate, under MUDRA Loan, to set up their businesses and procure relevant tools and equipment required for addressing the challenges of alternative refrigerants and electronic components in air conditioning sector.

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'From the field' is a series of interviews with service technicians to help them share their experience with the fraternity. The series is aimed at promoting mutual learning and camaraderie among RAC technicians.

In this issue, we have featured Mr Jagjit Singh Mann, who is based out of Mohali. He has two firms, JS Refrigeration & UltraKool, wherein one deals with commercial consumers and the other with domestic. Excerpts from the interview are shared below:



Can you take us through the nature of your job? What services does your company offer?

Ans: My job mainly deals with commercial cooling and refrigeration. I have two firms - JS refrigeration and UltraKool, wherein one deals with commercial consumers and the other with domestic. For commercial consumers, we help service water chiller, cold room, blast room etc. Additionally, for the food industry we design and build refrigeration and heating systems. For residential consumers we mainly deal with air conditioning and refrigeration.



What are the safety precautions that are usually followed by your technicians while servicing?

Ans: All my technicians undergo training on safety and good service practices, every two to three months. These days we hear about a lot of incidents, that have happened due to safety lapses. So, we first train them on electrical safety. We also advise them on the usage of double stage regulator for nitrogen. Our oxygen regulators are also double stage, so we keep getting them checked very often to ensure optimal safety.



Are you aware of the MUDRA loans for the service sector? If yes, have you availed it?

Ans: I have heard of it, but I haven't explored it yet.



Can you take us through the specific challenges faced during technical service in the states of Punjab and Haryana?

Ans: My company basically covers the entire north India, with states like Haryana, Himachal Pradesh, Uttarakhand, Rajasthan along with the UT of Jammu and Kashmir. In Punjab and Haryana, there is a general lack of general awareness in both consumers and technicians. Especially in the border areas of these states, customers are used to short cuts and bad habits due to the local technicians. They are not aware of quality service and a lot of technicians do not follow proper practices and know the nuances of handling the tools and equipment.

I also believe that there is general lack of safety precautions. I will give you an example – Once in a local shop I witnessed a technician asking for a filling of 404 refrigerant in a 1kg cylinder. The shopkeeper, however overfilled it up to 1.2 Kgs, which is quite dangerous, as we should fill maximum 70%! Thus, it is very important to train these local technicians in areas like upcoming technology and safety, especially in areas like Punjab, Haryana and J and K. My observation is that technicians in states like Maharashtra and Gujarat are better trained as the local education level is better. Overall, my belief is that only 10% of the technicians are trained in Punjab and Haryana and thus there is lot of scope for improvement.



Are you aware of the India cooling action plan and how it aims to bring about a reduction of cooling demand across sector?

Ans: I am aware of ICAP and have received a draft of it. I am in the process of reading it and I plan to go through the entire draft in the near future.



Are all the technicians in your company professionally trained? Do you think the training adds value?

Ans: All technicians in my firm are ITI holders and have underwent all the latest trainings. I firmly believe that raining adds great value. They learn about good service practices, safety and emerging technology.



What is your opinion on the financial viability and social security of working in the sector?

Ans: I have been working in this field from 1992 and I am very satisfied with it. However, there was a time when I wanted to leave the trade due to less income and lack of opportunity. However, I attended a training session back in 2004, which was a turning point. Since then I have been doing really well and have a turnover of above 5 crores right now. So, I believe that people can prosper in the sector with the right skills and training.



What trainings have your technicians undergone and are there ways for them to upskill themselves through the company?

Ans: Yes, we help our technicians upskill. I have had them undergo training from GIZ and the Chandigarh training cell. I am myself a trainer for GIZ, so I am always up to date on latest modules.

WHAT IS MUDRA?

The Pradhan Mantri MUDRA Yojana scheme was unveiled on April 8, 2015 for providing loans up to 10 lakhs to the non-corporate, non-farm small/micro enterprise. MUDRA has created three products to signify the stage of growth and funding needs of the beneficiary:

Shishu: Covers loans up to Rs 50,000/-

Kishore: Covers loans above Rs 50,000/- and up to 5 Lakh

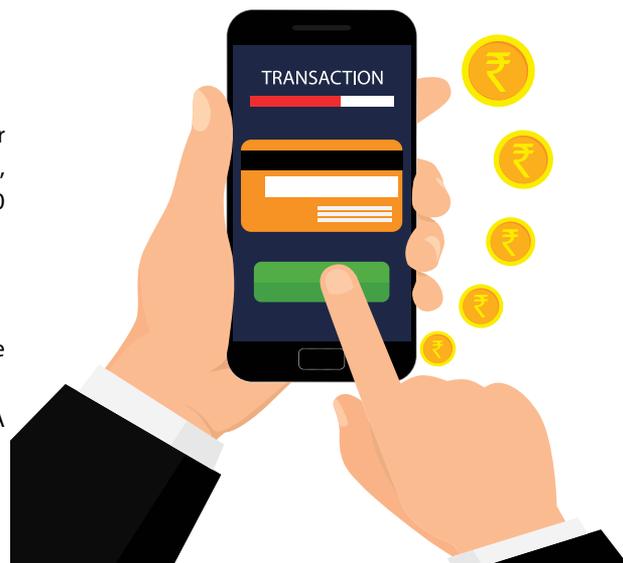
Tarun: Covers loans above Rs 5 Lakh and up to 10 Lakh

Who is eligible?

Any Indian citizen who has a business plan for a non-farm sector income generating activity such as manufacturing, processing, trading or service sector and whose credit need is less than Rs 10 Lakh.

What is the process for applying?

- Prepare a business plan and keep documents ready as per the checklist below
- Approach banks or financial institutions that offer MUDRA loans or click on <https://www.udyamimitra.in/>
- Bank or financial institution will process your application
- Your loan will be sanctioned, and you will get a MUDRA card



CHECKLIST OF DOCUMENTS

1 MUDRA Loan Application

4 Applicant's recent photograph

7 Name of supplier or details of machinery or prices of machinery

2 Business plan

5 Proof of Identity

8 Address proof of the business (tax registration, business license etc.)

3 Residence proof

6 Quotation of machinery or other items to be purchased

9 Proof of category like SC/ST/OBC/Minority, if applicable

Apply here: <https://site.udyamimitra.in/Login/Register#NoBack>

Ready Reference for Good Servicing Practices Videos



Basic Tools overview



Evacuation of Air-conditioner



Flaring



Leak Detection



Refrigerant Charging



Ministry of Environment,
Forest & Climate Change
Government of India

For further information
Ozone Cell, Ministry of Environment,
Forest and Climate Change
Government of India
Core-4B, 2nd Floor, India Habitat Centre,
Lodhi Road, New Delhi-110 003
Tel: 011-24642176; Fax: 011-24642175
Email: pmucfc-mef@nic.in,
Website: <http://ozonecell.in/>



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Creating Innovative Solutions for a Sustainable Future

For further information
Karan Mangotra
TERI, Darbari Seth Block, IHC
Lodhi Road, New Delhi-110 003
Tel: 011-24682100; Fax: 011-41504900
Email: karan.mangotra@teri.res.in
Website: www.teriin.org