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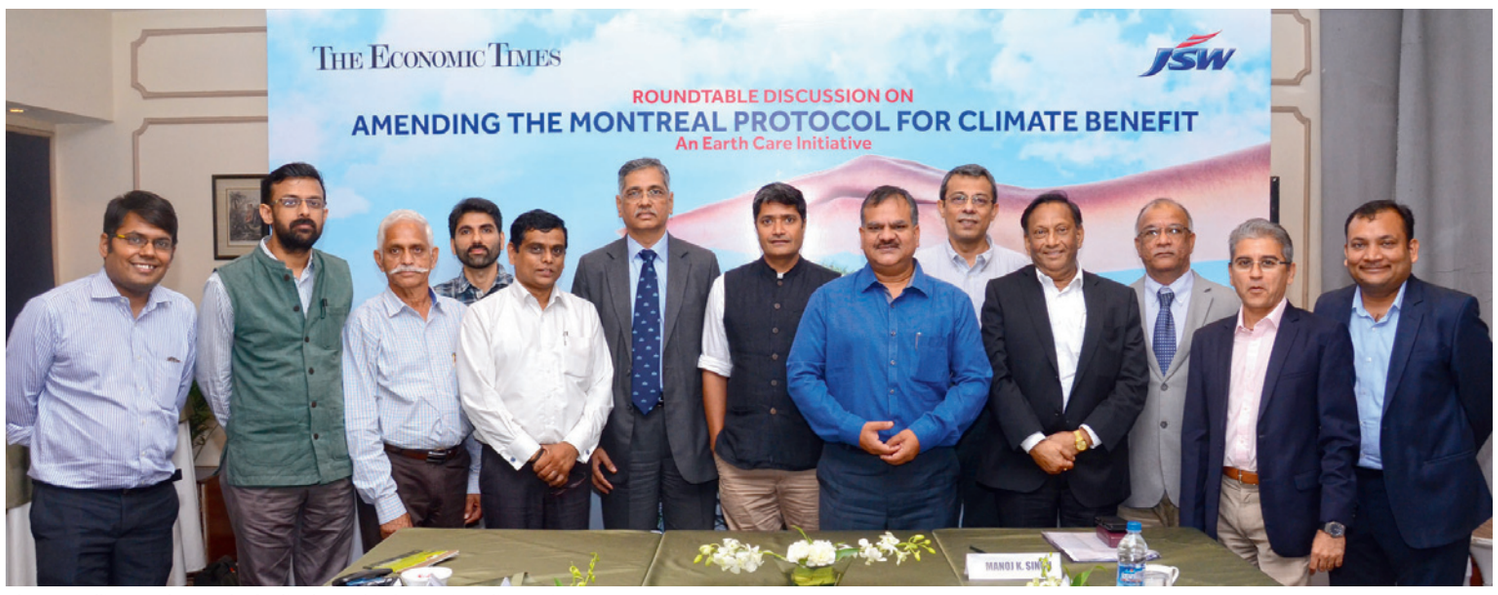
A CONSUMER CONNECT INITIATIVE

The Economics of Environmentalism

India must balance its national needs and environmental protection at the Montreal Protocol amendment negotiations in Kigali

Nilakshi.Sharma@timesgroup.com



The panellists at the end of a lively and informative discussion

The Economic Times and JSW Foundation organised a roundtable discussion on 6 September to discuss India's needs and stance when it comes to the Montreal Protocol amendment. The Montreal Protocol is the world's most successful environmental treaty to date and it came into being to combat the damage being done to the ozone layer. The chemicals most commonly used in refrigerants — Chlorofluorocarbons (CFCs) — were ozone depleting substances (ODS). So the agreement was to shift to a class of chemicals that was less damaging— Hydrochlorofluorocarbons (HCFCs) — and finally to Hydrofluorocarbons (HFCs), which are non ODS. However, HFCs have a high greenhouse warming potential (GWP) and are thus contributing to global warming. This contribution is set to increase as HFCs are widely used in a variety of ways — refrigeration (both industrial and domestic), air conditioning, foam manufacturing, aerosols, pharma, etc., — that are all witnessing a growth. Therefore the Montreal Protocol is continuing to evolve and is subject to amendments that deal with the adoption of the next generation of refrigerant gasses that are both non ODS and have minimal GWP.

The next round of negotiations is scheduled to be held in Kigali, Rawanda from October 8 to 14. But the global environmental needs are not the only driving factor. National social interests and economic growth are jostling alongside corporate economic interests in the form of the Intellectual Property Rights (IPR). And then there is the allocation of the responsibility that each country must bear. Is it fair that the developed world imposes the same penalty on the developing world when their share of contribution to the problem is much higher?

The discussion brought together all the stakeholders from different sectors. The panel comprised Manoj K. Singh, Joint Secretary, Ministry of Environment, Forest and Climate Change, Government of India; Kapil Singhal, Member-Refrigerants Technical Committee, ISHRAE; Vivek Gilani, Director-Strategy, Research & ERP, C-Balance; Chandrasekhar Bhadsavle, Agricultural Expert, Saguna Baug; V. Manjunath, Standards & Program Manager-India, South Asia & ME, Underwriters Laboratories; J M Bhambure, Executive Vice President - R&D and Technology, Blue Star Ltd.; Pawanexh Kohli, CEO & Chief Advisor, NCCD, Department of Agriculture & Cooperation & Farmer's Welfare; Sameer Arora, MD, Industrial Foams Pvt. Ltd.; Anil D Gulanikar, President Elect, Association of Ammonia Refrigeration; and Deependra Prashad, Principal Architect, DPAP.

> The close link between the economic and the environmental agenda is one of the crucial factors responsible for the success of the Montreal Protocol, which has been signed by 197 countries by now and is recognised as the most successful environmental treaty.
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> **Manoj K. Singh**
> Joint Secretary, Ministry of Environment, Forest and Climate Change, **Government of India**

Biswadip Gupta, Trustee & CEO, JSW Foundation, placed the discussion within the larger context of climate change impact on India, the mitigation of which is one of the Foundation's aims. The discussion was moderated by Chandra Bhushan, Deputy Director General, Centre for Science and Environment.

As the Indian delegation heads to Kigali, at stake are deadlines and decisions that will have an impact on our growth and development model. Chandra Bhushan feels that India needs to keep in mind its experience at the climate change and WTO negotiations. Very often American or first world interests triumph because India ends up standing alone. As a country with one of the world's lowest ecological footprint at 0.9 global hectares per individual, India has contributed far less to the world's environmental crisis. But India is a growing economy and a developing country whose future needs must be balanced against environmental concerns. Our value chains are also unique. All these considerations must come into play. The biggest concern is the economic impact of the new generation of refrigerants that come at a much heftier price and new kinds of patents that will ensure that the cost will not be coming down. Another option would be the development of natural refrigerants such as Ammonia and Hydrocarbons (propane, butane and cyclopentane). But a host of factors such as safety standards, technological and financial viability also need to be considered before switching to these alternatives.

As the discussion proved, these are contentious concerns where India needs to factor in both, national needs and the planetary needs. Hopefully, we can negotiate to the advantage of both.

> JSW Foundation believes in creating growth while balancing natural resources. We are committed to promoting responsible behaviours and values.
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> **Biswadip Gupta**
> Trustee & CEO, **JSW Foundation**

What They Said

Agriculture contributes 1/3rd of all GHG emissions. Modern agricultural techniques such as ploughing, transplanting, etc., are the reason. Zero till agriculture and the SRT cultivation methods are the way forward whereby we can also sequester carbon in a big way.

CHANDRASEKHAR BHADSAVLE
Agricultural Expert, Saguna Baug

Looking at safety standards is very important for us but along with that we also have to have a systems approach.

V. MANJUNATH
Standards & Program Manager-India, South Asia & ME, Underwriters Laboratories

Each and every technology needs to be fairly evaluated on technical grounds - safety, flammability, environmental concerns, material compatibility, etc.,... however, India needs to evaluate standards based on Indian requirements.

KAPIL SINGHAL
Member-Refrigerants Technical Committee, ISHRAE

There needs to be a drastic increase in the capacity to implement energy efficiency in India. Today if the ECBC regulations were to be mandated we would not have the capacity to deliver upon it. Secondly, energy efficient design and low carbon cooling technologies should become a pivotal part of architecture education in India.

VIVEK GILANI
Director-Strategy, Research & ERP, C-Balance

Issues Vital to the Montreal Protocol Amendment

Chandra Bhushan

The 28th Meeting of the Parties (MOP 28) to the Montreal Protocol on ODS is scheduled to take place from 8 to 14 October in Kigali, Rawanda. Negotiations in the contact group discussing the HFC phase down, are also dealing with Intellectual Property Rights for the next generation of refrigerant gases, the country wise share of responsibilities, timelines for phase downs and the selection of baseline years for each country. India needs to stay focused on both, the environmental agenda and its national needs. Here are some of the main Indian concerns:

Ambitious Phase Down Schedule: If developing countries are to leapfrog HFCs, then the developed countries, which are the largest consumers of HFCs have to start phasing down as early as possible.

Energy Efficiency: While the focus on HFCs is rightly so, it cannot be isolated in the larger energy efficiency scheme of things. In the life cycle of any refrigerator or air-conditioner direct emissions from refrigerants are small compared to indirect emissions from the use of energy to run the device.

Prioritize Natural Refrigerants: Prioritize environment friendly and low GWP refrigerants which are energy efficient. Natural refrigerants are readily available and relaxing a few archaic standards by improving safety features will promote wider use of these refrigerants. A study by CSE suggests that there is potential for as much as 77 per cent of the markets to switch over to natural refrigerants.

Technology transfer & IPR: Resolving the IPR issue is more important now as developing countries are pushing for an early start date of HFC phase down. It will mean that the developing countries might be pushed into paying for patents which might not expire because of non-availability of the lag time that was available previously. Developing countries also fear that the patents will be renewed again and again via a process called ever greening of patents.

Flexibility: Each country has its own strategy and its own priorities, so flexibility in choosing the sector to phase down in is more important and will help in reducing emissions to the maximum extent. But flexibility will also mean that there should be availability of finance for the sector a country chooses to phase down first which will be a challenge for the Multillateral Fund (MLF) if agreed to.

Finance: Past experience suggests that the limited budget in the Montreal Protocol is guided by vested interests. This forces countries to pick the cheapest available option rather than the best available option. Cost effectiveness becomes the main criteria for choosing an alternative which might not align with the strategy of the country. Resolving finance availability and allocation will resolve most of these issues.

Support to small scale industry & Servicing: Phasing down HFC will mean phasing in a new chemical as a replacement and so training and servicing the technicians for handling new chemicals is very important, especially for small countries with low volume consumption and countries heavily dependent on small and medium enterprises.

The author is Deputy Director General, Centre for Science and Environment

STOP FOOD LOSS & WASTE TO COUNTER CLIMATE CHANGE

Every wasted tonne of fruit and vegetables decomposes into approximately 1.5 tonnes of greenhouse gases

Pawanexh Kohli

India has the world's largest footprint in cold stores. Recent estimates indicate that over the last few decades we have created 130 million cubic metres of refrigerated warehousing space. Most importantly, 97 per cent of these happen to be users of natural refrigerant gases - in effect this is the world's largest collection of users of ammonia based refrigeration. This is not a petty matter, as most of the developed world already has cold stores that deploy artificial refrigerants. However, unlike ammonia, the artificial refrigerant fluids used by them - HCFCs and HFCs - cause either ozone depletion or are negatively impacting global warming.

Reports indicate that in Europe alone almost 50 per cent of the food chain refrigeration is using gases with a thousand times higher global warming potential (GWP) than CO2. Ammonia on the other hand has zero GWP. However, India cannot sit pretty because we are entering the next stage of development of our cold-chain. This involves creation of thousands of farm-gate packhouses and multiplying our reefer transport capacity. The first brings decision making capacity to farm-gate and the latter is necessary to complete the physical link with markets. Both these types of units function for small loads (in comparison to cold stores), and may have intermittent capacity utilisation. In such cases ammonia based refrigeration is unlikely to prevail but the world has yet to decide about which refrigerant is the safest to use, as HFCs need to be phased out.

The world frets over the knowledge that leaking refrigerant gases can add to global warming. There is a studied risk that 20 per cent of refrigerant gas in use will leak into the atmosphere. However, the pundits also need to dwell over the global warming impact of not having such refrigerants available for the food supply chain. Every wasted tonne of fruit and vegetables decomposes into approximately 1.5 tonnes of greenhouse gases. Globally, mankind wastes about 1.3 billion tonnes of food, the highest share belonging to fruits and vegetables. In fact, the World Resources Institute reported that worldwide Food loss and Waste (FLW), if clubbed on its own, is the third largest emitter of greenhouse gases.

We must also keep in mind that India is the largest producer of certain fruits and vegetables. It is estimated that last year our farmers produced over 283 million tonnes in horticultural crops alone. Cold-chain is the sole scientific mode of handling products that can safely bring this produce to gainful end-use. Cold-chain is an agri-logistics system that is transformational in impact and an important part of the next agricultural revolution. Cold-chain empowers farmers with the ability to directly link with consumers, while retaining custody of the harvested value. At times confused with food processing factories, cold-chain is actually only a custodian of value, between farm-gate and consumer gate, especially in case of fresh produce. Cold-chain, simply put serves as a bridge, between rural source and urban consumption.

The risk to global warming from a few million tonnes of this produce spoiling is far higher than the risk from the gases that go into safeguarding it. This means that while we urgently work towards developing safer refrigerants we ought not to lose sight of the wood for the trees because food loss and wastage will have a far greater impact on climate change.

Countering FLW is critical to the survival of human civilization. As our populations grow the pressure on agriculture increases because of wasteful production. Mitigating FLW translates into reduced green-house-gases and a cooler earth.

The author is CEO & Chief Advisor, NCCD, Department of Agriculture & Cooperation & Farmer's Welfare