Creating Innovative Solutions for a Sustainable Future

Building Sector Policies and Rating System to Support HCFC Phase-out

October 24, 2017
Mumbai
Modern Architecture
A good design is not just about “aesthetics” but essentially a well thought combination of climate responsive elements, sustainable building materials and culture.
The Building Sector

Two-thirds of the commercial and high rise building stock in 2030 will be built in the next 15 years.

Buildings are responsible for more than a third of India's total energy consumption.

Buildings are central to India's development and climate change agenda.

Residential & Commercial Buildings consume 37% of total electricity.

Source: 18th EPS, CEA
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ODS Use in the Building Sector

- Refrigeration
- HCFCs in Buildings
- HVAC
- Building Insulation
- Fire Extinguisher
Policies and Programs in India

- HCFC Phase Out Management Program
- National Building Code
- Energy Conservation Building Code
- Standards and Labeling Program
HCFC Phase Out Management Plan

Phase-I: Phasing out HCFC by 2030 in compliance with Montreal Protocol

Phase-II: Launched in February 2017 with strong Focus on Buildings Sector

- Targets to phase out HCFC 22 from 6 major Room Air Cons (RAC) manufacturer
- Train 17000 RAC technicians about alternative technologies
National Building Code

Published: 1960

Recently Revised: 2016

Includes ‘Part 11: Approach to Sustainability’

- Requirement for using Zero ODP & Ultra Low Global Warming Potential (GWP) substances
- Requirement for Energy Efficient Air Cons
Energy Conservation Building Code

- Published: 2007
- Revised: 2017

- Focuses on improving energy efficiency of Building Envelope, HVAC System, lighting system and Electrical System
- Does not address use of refrigerant in the buildings
Standards and Labeling Program

Launched: 2006 for 28 appliances such as Air Cons, Refrigerators, Lighting etc.

- Most common and cost-effective policy tools to reduce the demand for electricity through energy efficient appliance and equipment
# Green Building Assessment Tools and ODS Use in Buildings

<table>
<thead>
<tr>
<th>Green Building Assessment Tool</th>
<th>Applicable Region</th>
<th>Requirements of ODS use in buildings</th>
</tr>
</thead>
<tbody>
<tr>
<td>GRIHA</td>
<td>India</td>
<td>✓ Insulation ✓ HVAC ✓ Refrigeration ✓ Fire Suppression</td>
</tr>
<tr>
<td>IGBC</td>
<td>India</td>
<td>- Insulation ✓ HVAC ✓ Refrigeration ✓ Fire Suppression</td>
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<tr>
<td>LEED</td>
<td>Developed by USA; Used Worldwide</td>
<td>- Insulation ✓ HVAC ✓ Refrigeration ✓ Fire Suppression</td>
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</table>
Criterion 3: Maintenance, Green Procurement & Waste Management

- It is mandatory that all HVAC equipment should be CFC free and all insulation should be CFC and HCFC free

OR

- Submit a phase out plan for HCFC/CFC using equipment present in the building.

- The criterion also mandates that fire fighting equipment are Halon-free
GRIHA V2015 Compliance

Criterion 10: Low ODP materials - Mandatory requirements

- All the insulation used in building should be CFCs and HCFCs free
- All the refrigerant in the HVAC and refrigeration equipment should be CFCs free
- The fire suppression systems and fire extinguishers installed in the building are free of halon
GRIHA Product Catalogue

Is an online product catalogue which has been developed to provide green building designers, architects, consultants, engineers and clients with all necessary information on green building products which can be used in order to make buildings GRIHA compliant.

Launched in 2012
Summary

- The first step in achieving phase out is to have policies and programs addressing ODS use and energy efficiency; which India already has
- The second step is to have synergy between these programs so that an integrated phase out can take place
- In that context, the NBC and the green building rating systems are the only two instruments that address both ozone depletion and climate change.
Thank you!

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