बीईई लाईन

समाचार पत्रिका

BEE LINE

NEWSLETTER

Issue 12 | July'21-September'21

Issuance of ESCerts to DCs of PAT Cycle 2

6th Meeting of BRICS Ministers of Energy

21 st National Certification Examination

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महानिदेशक का संदेश

एक विकासशील देश के रूप में, भारत को अपनी ऊर्जा खपत और ग्रीनहाउस गैस उत्सर्जन को कम करने की आवश्यकता है। इन आवश्यकताओं को पूरा करने के लिए ऊर्जा क्षेत्र निरंतर नए विचार और अत्याधुनिक तकनीक प्रदान कर रहा है।

ऊर्जा संसाधनों के कुशल उपयोग और उनके संरक्षण का हमारे देश में ऊर्जा बचत पर महत्वपूर्ण प्रभाव हो सकता है। बीईई, इसके लिए लोगों को प्रोत्साहित करता है जिससे कि सभी आगे आएं और ऊर्जा कुशल देश के निर्माण में अपनी भूमिका निभाएं। ऊर्जा दक्षता कार्यक्रमों के कार्यान्वयन की दिशा में आये अभूतपूर्व परिवर्तन से ऊर्जा क्षेत्र में महत्वाकांक्षी लक्ष्यों को पूरा करने में बढ़ावा मिला है।

ऊर्जा क्षेत्र में भारत सरकार द्वारा निर्धारित महत्वाकांक्षी लक्ष्यों को प्राप्त करने के लिए, इमारतों, परिवहन, उद्योग और कृषि जैसे क्षेत्रों में ऊर्जा दक्षता को बढ़ावा देने के लिए मौजूदा पहलों को मजबूत करने के साथ-साथ ऊर्जा दक्षता को बढ़ावा देना अत्यंत महत्वपूर्ण है।

DG MESSAGE

As a developing country, India needs to reduce its energy consumption and greenhouse gas emissions. Many innovative ideas and cutting- edge technologies are now provided by the energy sector to meet these needs.

The efficient use of energy resources and their conservation can have a significant impact on energy savings in our country. BEE is constantly monitoring and encouraging people to come forward and do their part in building an energy efficient country. The transition towards implementation of energy efficiency programmes has given a boost to the energy sector for fulfilling the ambitious goals towards greening the energy sector.

In order to achieve the ambitious goals laid down by the Government of India in the energy sector, strengthening of the existing initiatives along with a strong push to promote energy efficiency in end use sectors such as buildings, transport, industry and agriculture is extremely important.

अभय बाकरे
महानिदेशक, बीईई

Abhay Bakre
Director General, BEE

सचिव का संदेश

कार्बन उत्सर्जन को कम करने और जलवायु परिवर्तन के खतरे से निपटने के लिए उद्योगों को ऊर्जा कुशल बनाना बहुत महत्वपूर्ण है। ऊर्जा दक्षता ब्यूरो ने कई ऊर्जा संरक्षण पहलों को अपनाया है और हमारे देश के कार्बन उत्सर्जन को कम करने में मदद करने में प्रतिबद्धता दिखाई है। भारत के सतत भविष्य के लक्ष्य को पूरा करने के लिए सभी हितधारकों के केंद्रित प्रयासों की आवश्यकता है।

ऊर्जा दक्षता को बढ़ावा देने के लिए, बीईई प्रशिक्षकों के लिए विभिन्न प्रशिक्षण कार्यक्रम, डिस्कॉम के तहत क्षमता निर्माण कार्यक्रम, ऊर्जा दक्षता परियोजनाओं और अन्य कार्यक्रमों का आयोजन करता है ताकि उन्हें ऊर्जा संरक्षण से जुड़े उपायों का पालन करने के लिए प्रशिक्षित किया जा सके। ऊर्जा दक्षता ब्यूरो भारत में एक स्थायी भविष्य बनाने के लिए ऊर्जा के कुशल उपयोग को बढ़ावा दे रहा है और इस दिशा में हम सभी को भारत को एक ऊर्जा कुशल देश बनाने के लिए मिलकर काम करना चाहिए।

ऊर्जा दक्षता सुनिश्चित करने की दिशा में उठाए गए कुछ क़दमों के बारे में विस्तारपूर्वक चर्चा को न्यूज़लैटर में शामिल किया गया है।

SECRETARY MESSAGE

Making industries energy efficient to reduce its carbon emissions and tackle the threat of climate change is the need of the hour. The Bureau of Energy Efficiency has adopted a number of energy saving initiatives and is committed to help reduce carbon footprint of our country. We need concentrated efforts of all stakeholders to achieve India's goal of sustainable future.

In order to promote energy efficiency, BEE organizes various training programs for trainers, capacity building programs under DISCOM, energy efficiency projects and other programs to train them to follow best practices for energy conservation. The Bureau of Energy Efficiency promotes the efficient use of energy in India to create a sustainable future and we all must work together to make India an energy efficient country.

Some of the initiatives taken towards ensuring energy efficiency, featured in the newsletter aim to optimize energy for sustainable development.

आर के राय
सचिव, बीईई

R K Rai
Secretary, BEE

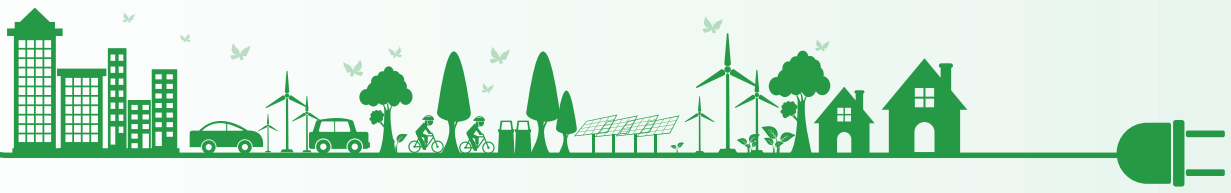
DEVELOPMENT OF A CARBON MARKET IN INDIA

Climate change has drawn serious attention globally due to its impacts and hence one needs to give priority to activities that have potential to mitigate carbon emissions. In in this context a market mechanism for providing a monetary value to carbon is emerging as one of the prominent tools to trigger the actions to arrest climate change. The carbon market has also prominently been envisaged in the Paris agreement of 2015.

In line with this, Bureau of Energy Efficiency which is implementing Perform, Achieve and Trade (PAT) scheme, a flagship programme of National Mission for Enhanced Energy Efficiency (NMEEE). The scheme is designed to reduce energy consumption and promote enhanced energy efficiency among energy intensive sectors of the country consequently reducing the emissions for energy use. To incentivize such efforts, entities included under the scheme which can achieve Specific Energy Consumption levels lower than their targets receive Energy Savings Certificates (ESCerts) for their excess savings. Entities unable to achieve the given targets through their own actions need to demonstrate compliance by purchasing an equivalent amount of ESCerts or by paying financial penalty specified under the Energy Conservation Act, 2001. The ESCerts are traded at the power exchanges at the end of each PAT cycle of three years. PAT scheme has successfully completed two cycles and the trading of ESCerts for PAT cycle -I has also been completed.

Trading of ESCerts under PAT cycle –I showcased that the price variance per ESCert ranged over Rs. 200 to Rs. 1200. This variance implies that the supply and demand gap varied unpredictably trading sessions. The learning of PAT cycle –I indicates that there is a surplus supply of banked ESCerts of PAT cycle –I available for trading in PAT cycle –II, it would also lead to lowering of prices of ESCerts when compared to PAT cycle –I. In order to stabilize the price of the ESCerts, it may be useful to address the supply-demand gap. BEE is exploring the possibility of tapping additional demand for ESCerts through linking the PAT scheme with carbon market.

Thus, development of a voluntary carbon market would be helpful in consuming the surplus ESCerts in the market and also be useful in helping towards larger uptake in adoption of energy efficiency projects/measures in the domestic market. Such a market will be critical for meeting the commitments under NDCs submitted in line with the Paris Agreement. In this direction, BEE has engaged an agency for development of a blueprint for the design of a carbon market in India and is under process of development.



ISSUANCE OF ENERGY SAVING CERTIFICATES (ESCERTS) TO DCS OF PAT CYCLE –II

Perform Achieve and Trade (PAT) is the flagship program under National Mission for Enhanced Energy Efficiency (NMEEE). The mission is implemented by Bureau of Energy Efficiency (BEE) under Ministry of Power. PAT is a market-based mechanism in which identified energy intensive industries called Designated Consumers (DCs) are given targets for reducing their Specific Energy Consumption (SEC). PAT cycle –I was completed in 2015 and PAT cycle –II was completed in 2019. The achievement in energy savings from PAT cycle –I and II is about 22 Million Tonnes of Oil Equivalent (MTOE).

Further, since PAT is a market based mechanism wherein the DCs which over achieve their targets are issued ESCerts and those who are not able to achieve the target are entitled to purchase ESCerts for compliance.
For PAT cycle –II, Ministry of Power has issued 57 lakh ESCerts to 349 DCs and 193 DCs are entitled to purchase 36.68 lakh ESCerts in August 2021 through electronic mode. In addition to the issuance of ESCerts, PAT trading booklet "Lessons learnt in ESCerts Trading under PAT scheme" has been released by Secretary, Ministry of Power.

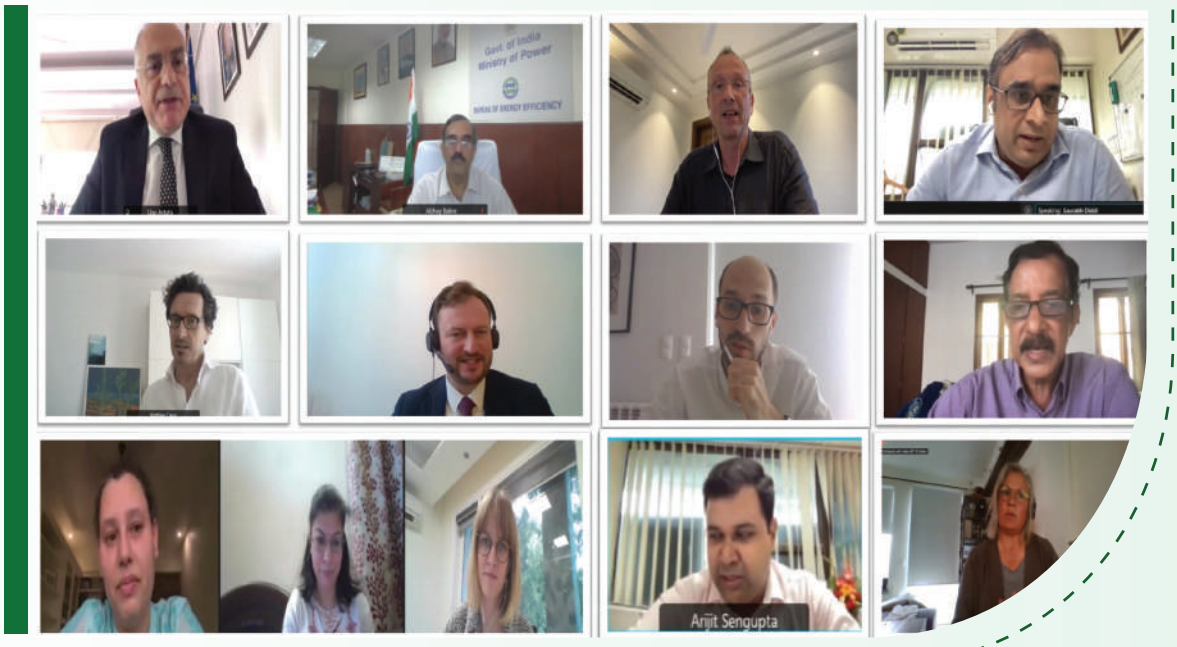
WORKSHOP UNDER THE COMMON IMPLEMENTATION FORUM AS PART OF EU-INDIA CECP

Bureau of Energy Efficiency, Ministry of Power and the EU successfully organized a virtual workshop under the Common Implementation Forum (Knowledge exchange forum between Indian states and EU Member states) on July 6, 2021 as part of EU-India CECP.

H.E. Mr Ugo Astuto, Ambassador of the European Union to India highlighted the importance of EU- India collaboration on clean energy and energy efficiency. He addressed the forum with his insightful suggestions on the EU's overarching goal of becoming carbon neutral.

Shri Abhay Bakre, DG BEE appreciated EU's support to BEE on key activities such as energy efficiency in buildings, electrification strategy for India and Smart readiness Indicators for building sector.

The deliberations happened around Policy discussions for energy efficiency in buildings, Knowledge exchange between Indian states and EU Member states on ECBC/EPBD implementation and Role of financing for promoting EE in buildings. The event saw participation by more than 60 experts from the EU and India.



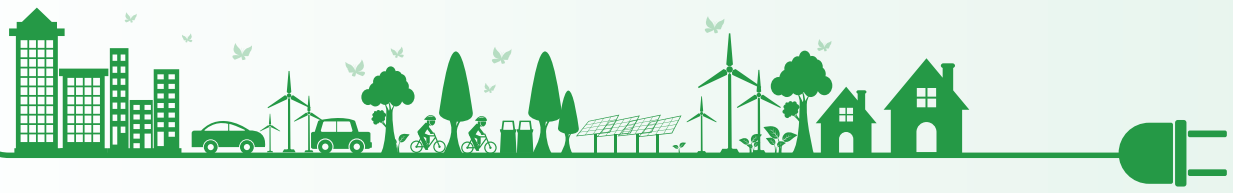
WEBINAR ON ENERGY EFFICIENCY FINANCE PLATFORMS

An international webinar on Energy Efficiency Finance Platforms & Protocols was organised by BEE in association with OECD's CEFIM Programme. DG-BEE inaugurated the event and welcomed all dignitaries from international organisations such as OECD, DEEP, ICP (Investor Confidence Project), European EEFIG (Energy Efficiency Financial Institutions Group); as well as Indian representatives from PFC, SIDBI, IREDA, IFC, SDAs and other participants. Dr. Alex Böhmer, Head of South and Southeast Asia, OECD also warmly welcomed the panelists and attendees, and emphasized on building a robust growth in energy efficiency financing sector. This webinar with 15 panelists and 75 participants witnessed some extremely valuable lessons, initiatives, experiences, success stories on financing of energy efficiency measures at the global and regional levels.

Addressing the leaders, Shri Abhay Bakre, Director General, BEE said that we require more efforts to deploy technology in terms of capacity building and seeking latest technology that emit low carbon to acquire our targets to reduce carbon in economy.

NATIONAL TRAINING PROGRAMME ON ECBC AND ENS

One-day national level online training programme on India's Energy Efficiency Building Codes, Energy Conservation Building Code and Eco Niwas Samhita, was conducted by Bureau of Energy Efficiency. The National Training Programme on ECBC and ENS was held for building industry stakeholders.

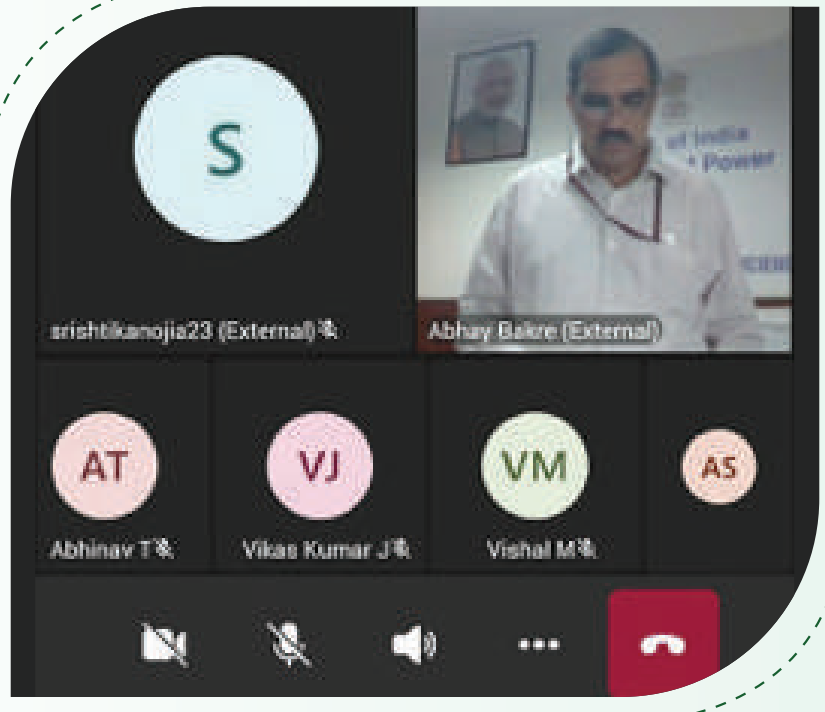


NEERMAN AWARDS 2021

The Bureau of Energy Efficiency launched the first NEERMAN Awards 2021, to acknowledge the exemplary energy efficient building designs in India complying with Energy Conservation Building Codes. "Aiming for Sustainable Habitat: New Initiatives in Building Energy Efficiency 2021" NEERMAN Awards has been launched to give National-level recognition for exemplary building designs complying with Energy Conservation Building Codes. NEERMAN Awards are national-level recognition for energy-efficient building design.

SADBHAVNA DIWAS

In observance of Sadbhavna Diwas, a pledge was taken virtually by the officials of BEE. Shri Abhay Bakre, Director General, BEE, administered the pledge to encourage national integration, peace, affection, and communal harmony among people.



हिंदी पखवाड़ा का आयोजन

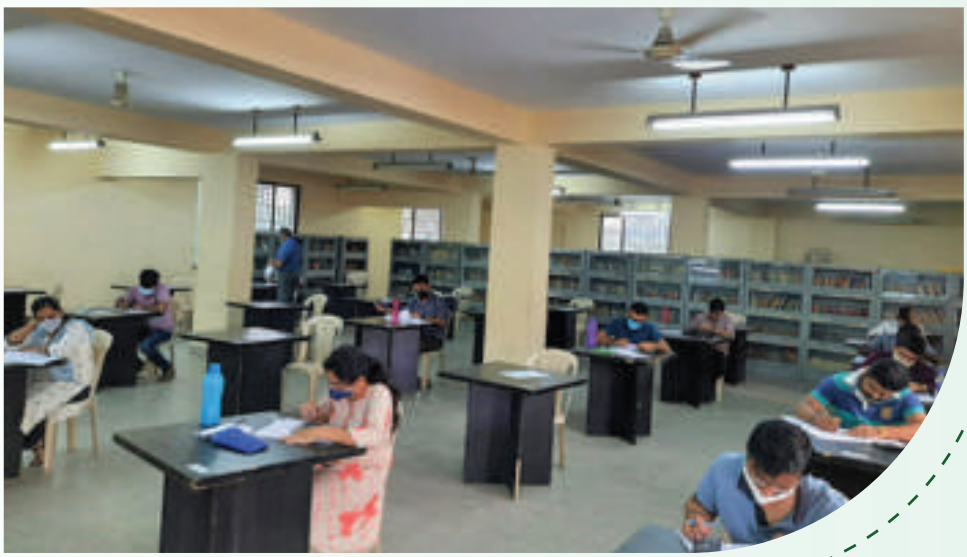
हिंदी पखवाड़ा के 15 दिवसीय कार्यक्रम (14 सितम्बर से 28 सितम्बर 2021) के अंतर्गत ऊर्जा दक्षता ब्यूरो में " हिंदी निबंध प्रतियोगिता" का आयोजन किया गया। इस प्रतियोगिता में कर्मचारियों ने अपने विचार साझा किये और बढ़-चढ़ कर हिस्सा लिया। हिन्दी पखवाड़े के दौरान अन्य प्रतियोगिताओं के साथ-साथ राज्य नामित एजेंसियों के अधिकारियों के बीच ऊर्जा संरक्षण पर भाषण प्रतियोगिता का आयोजन किया गया। इस प्रतियोगिता में विभिन्न एजेंसियों के 13 अधिकारियों ने भाग लिया। श्रीमती त्रिशलजीत सेठी, मुख्य सतर्कता अधिकारीए एनटीपीसी, श्री आनंद उपाध्याय, उप सचिव, विद्युत मंत्रालय, श्री अनिल कुमार, सहायक निदेशक राजभाषा, विद्युत मंत्रालय ने पुरस्कारों के लिए पात्र उम्मीदवारों का चयन किया। ऊर्जा दक्षता ब्यूरो की तरफ से महानिदेशक श्री अभय बाकरे, उप महानिदेशक श्री अशोक कुमार, सचिव श्री आर के राय और संयुक्त निदेशक श्री अभिषेक शर्मा उपस्थित थे।

CARBON NEUTRAL LADAKH

A delegation comprising of Bureau of Energy Efficiency and led by Shri R K Rai, Secretary, BEE met Shri R K Mathur, Hon'ble Lt. Governor of Union Territory of Ladakh, at Raj Niwas and apprised him about the pilot projects being planned to make the Ladakh region carbon neutral. The aim is to provide access to clean energy in the region for cooking, space heating, transportation etc.

21ST NATIONAL CERTIFICATION EXAMINATION

BEE has successfully conducted the 21st National Certification Examination for Energy Managers and Energy Auditors at 24 centres, PAN India on 25th and 26th September 2021. All the respective State protocols for COVID-19 were followed during the examination. A total of 5,641 candidates registered for the above examination and an average attendance of 47.21% was recorded. This examination entitles one as Energy Manager/Auditor for carrying out audits in various establishments and industries.



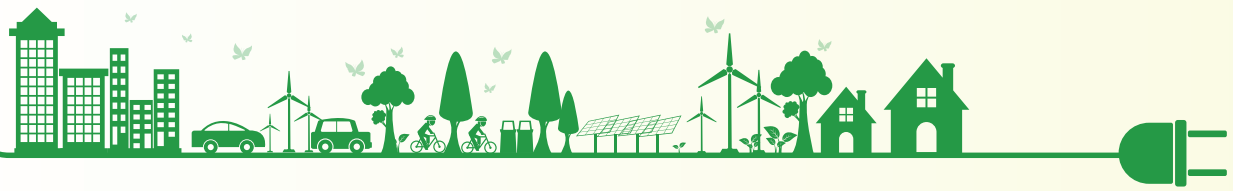
विकासशील भारतः निर्माण क्षेत्र में ऊर्जा दक्षता को बढ़ावा देने की तैयारी

भारत में ऊर्जा की खपत बढ़ने से ग्रीनहाउस गैसों का उत्सर्जन लगातार बढ़ रहा है। भविष्य में भारत में ऊर्जा खपत बढ़ने और ऊर्जा सुरक्षा के लिए देश का भविष्य जीवाश्म ईंधन पर निर्भर होने के कारण पर्यावरण संबंधी कई गंभीर चिंताओं ने जन्म लिया है। एक उभरती हुई अर्थव्यवस्था होने के कारण भारत के पास न्यूनतम ऊर्जा खपत में विकास के लक्ष्य को हासिल करने का बड़ा अवसर मौजूद है। ऊर्जा दक्षता को अंतरराष्ट्रीय ऊर्जा एजेंसी ने पहले ईंधन के रूप में पारिभाषित किया है। यह भारत में ऊर्जा का आदर्श उपयोग निर्धारित करने में महत्वपूर्ण भूमिका निभाएगा।

भारत और दुनिया के दूसरे देशों में नीतिगत दखल से स्वच्छ ऊर्जा प्रणाली विकसित करने का काम लगातार जोर पकड़ रहा है। हालांकि इसके लिए सबसे किफायती तरीका ऊर्जा की बचत में सक्षम लाइफस्टाइल अपनाना है। ऊर्जा दक्षता काफी तेजी से विश्व में ऊर्जा प्रणाली को बदलने के लिए महत्वपूर्ण स्तंभ बनती जा रही है। ऊर्जा दक्षता के लिए सख्त उपायों को लागू करने से वायुप्रदूषण पर अंकुश लगा है। कार्बन के उत्सर्जन में कमी आई है। लोगों को ऊर्जा तक पहुंच बनाने के लिए ज्यादा मौके मिले हैं। संसाधनों का बेहतर ढंग से इस्तेमाल हुआ है और बढ़ी हुई ऊर्जा सुरक्षा लोगों को मिली है। अगर ऊर्जा की खपत कम से कम करने के लिए प्रभावशाली कदम उठाए गए तो स्वच्छ ऊर्जा प्रणाली में बदलाव काफी किफायती साबित होगा और यह तेजी से होगा।

पेरिस समझौते के एक हिस्से के रूप में भारत को 2030 तक अपनी ऊर्जा तीव्रता (जीडीपी की प्रति यूनिट के हिसाब से एनर्जी की यूनिट का इस्तेमाल) 2005 के स्तर से 33 से 35 फीसदी तक कम करनी है। ऊर्जा दक्षता ब्यूरो (बीईई) की ओर से ऊर्जा की कम खपत के लिए अपनाई गई योजनाओं जैसे राष्ट्रीय सवर्धित ऊर्जा दक्षता मिशन (एनएमईईई), मांग पक्ष प्रबंधन (डीएसएम) ऊर्जा संरक्षण भवन संहिता (ईसीबीसी) ने सकारात्मक नतीजे दिखाए हैं। विद्युत मंत्रालय की ओर से जारी किए ताजा आंकड़ों के अनुसार देश ने पहले ही अपनी अर्थव्यवस्था की ऊर्जा तीव्रता को 2005 के स्तर से 20 फीसदी तक कम कर लिया है। इससे 2018–19 में 23.73 एमटीओई (मिलियन टन तेल के समकक्ष) की कुल ऊर्जा बचत हुई। इसके नतीजों में 891.22 बिलियन रुपयों की बचत हुई। अब भी आवासीय, सूक्ष्म, लघु, मध्यम उपक्रमों और परिवहन के क्षेत्र में ऊर्जा की बचत की काफी विशाल संभावनाएं हैं, जिसका अभी तक दोहन नहीं किया गया है।

राज्य नामित एजेंसी (एसडीए) में स्थित ऊर्जा दक्षता ब्यूरो की ऊर्जा संरक्षण भवन संहिता इकाई, ईसीबीसी को राज्यस्तर पर लागू करने का समर्थन कर रही है। जून 2021 तक 8 राज्यों के 48 स्थानीय शहरी निकायों (यूएलबी) ने बिल्डिंग के निर्माण को मंजूरी देने में ईसीबीसी के इन प्रावधनों को लागू किया है। ऊर्जा दक्षता ब्यूरो ने आवासीय भवन ऊर्जा संरक्षण संहिता विकसित किया है और आवासीय भवन के लिए एक लेबलिंग प्रोग्राम भी बनाया है। आवासीय भवनों में ऊर्जा दक्षता को बढ़ावा देने के लिए बीईई ने इको निवास पोर्टल (www.econiwas.com) बनाया है। मौजूदा आवासीय इमारतों में ऊर्जा दक्षता में सुधार की काफी संभावना है। ऊर्जा लेखा अध्ययन के अनुसार लाइटिंग, कूलिंग, वेंटिलेशन और रेफ्रिजरेशन में 40 फीसदी तक की बचत की संभावना है। ऊर्जा की बचत करने वाली इमारतों को बढ़ावा देने के लिए ऊर्जा दक्षता ब्यूरो ने कमर्शियल बिल्डिंग के लिए स्टार रेटिंग प्रोग्राम विकसित किया है, जो अपने भवन के क्षेत्रफल के हिसाब से बिजली का उपयोग करने के संदर्भ में है। इसकी गणना सालाना किलोवॉट ऑवर, वर्ग मीटर के आधार पर की जाती है। इस प्रोग्राम में इमारतों को 1 – 5 तक रेटिंग दी जाती है। जिन इमारतों को 5 स्टार मिले, उन्हें अति ऊर्जा दक्ष माना जाता है। इस समय यह योजना चार श्रेणियों में इमारतों पर लागू हो रही है, जिसमें ऑफिस, शॉपिंग मॉल, बीपीओ और अस्पताल शामिल है। जून 2021 तक 264 से ज्यादा इमारतों को विभिन्न श्रेणियों के तहत रेटिंग दी गई।

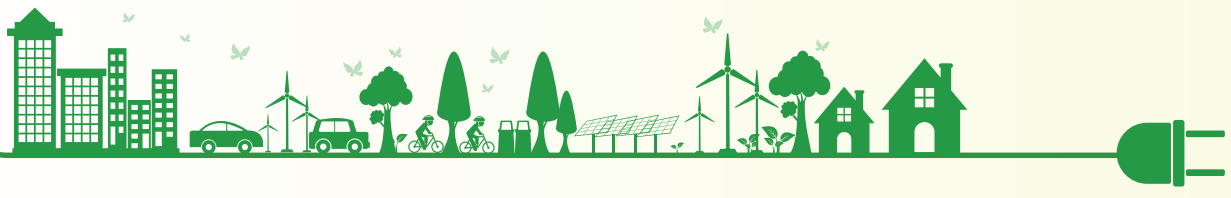


ऊर्जा संरक्षण भवन संहिता (ईसीबीसी) के नियमों का पालन करते हुए कुल 54 इमारतों का निर्माण किया गया। इसके अलावा 75 और इमारतों को ईसीबीसी के प्रावधानों के अनुकूल बनाया और डिजाइन किया जा रहा है। इससे ऊर्जा (इलेक्ट्रिकल) की कुल बचत 0.116 बीयू हुई और 9.8 मिलियन अमेरिकी डॉलर की बचत हुई। कार्बन डाइआक्साइड के उत्सर्जन में 0.095 मिलियन टन की कमी लाने में इस कदम ने अपना योगदान दिया।

सरकारी भवनों के ऊर्जा दक्षता कार्यक्रम के तहत 6545 भवन इस योजना का हिस्सा बनी थी। इसमें केन्द्र सरकार के भवन, जिला न्यायालय, पी डब्ल्यू डी भवन और रेलवे स्टेशन के भवन भी शामिल थे। इससे कुल ऊर्जा (इलेक्ट्रिकल) की बचत 0.212 बीयू हुई और 1.27 मिलियन अमेरिकी डॉलर की बचत हुई। इस गतिविधि ने कार्बन डाई अश्वक्साइड के उत्सर्जन में 0.174 मिलियन टन की कमी लाने में अपना योगदान दिया।

विद्युत अधिनियम में संशोधन से भारतीय विद्युत के क्षेत्र में कई नीतिगत बदलाव आए हैं। इनमें से एक मुख्य पहल के रूप में कई समस्याओं का समाधान खोजा जाना है। इनमें कम बिलिंग क्षमता के कारण राजस्व का नुकसान होना, बिजली के ट्रांसमिशन और डिस्ट्रिब्यूशन के क्षेत्र में भारी घाटा होना और बिजली की खपत पर निगरानी रखना शामिल है। इन सब समस्याओं के समाधान के रूप में बिजली के स्मार्ट मीटर लगाए गए। भारत सरकार ने अगले कुछ सालों में 250 मिलियन स्मार्ट मीटर लगाने का लक्ष्य रखा है। स्मार्ट मीटर से बिजली वितरण कंपनियां और उपभोक्ता दोनों बिजली के वास्तविक उपयोग के आंकड़ों तक पहुंचने में सक्षम होंगे। ये बिजली सप्लाई की गुणवत्ता पर नजर रखने, भविष्य में ऊर्जा संसाधनों के रखरखाव और भविष्य की आधारभूत योजना में मदद करेंगे। घरेलू स्तर पर कड़ी निगरानी से बिजली की खपत करने वाली उन श्रेणियों का पता चलेगा, जिससे बिजली की डिमांड पीक पर पहुंच जाती है। इससे डिस्कॉम का लोड कम करने बिजली की दरों को युक्तिसंगत बनाने और अतिरिक्त बिजली का उत्पादन करने में मदद मिलेगी। इससे मांग पक्ष प्रबंधन की रणनीति बनाने में मदद मिलेगी, जिससे व्यक्तिगत उपभोक्ताओं को ऊर्जा संरक्षण की विभिन्न योजनाओं के लिए जागरूक किया जा सकता है। इसलिए स्मार्ट मीटर लगाने से भारत में बड़े पैमाने पर ऊर्जा की खपत को कम करने में मदद मिलेगी।

बिजली की खपत को कम करने के मामले में दखल कार्बन एनर्जी को कम से कम करने के सबसे किफायती उपायों में से एक है। ऊर्जा की कम खपत की रणनीति को जल्द अपनाने से भविष्य में ऊर्जा के इस्तेमाल पर भी प्रभाव पड़ेगा। जलवायु परिवर्तन के प्रभाव, विभिन्न ऊर्जा स्त्रोतों के संवर्धन आबादी के उस वर्ग तक किफायती, विश्वसनीय और स्थिर ऊर्जा के साधनों तक बिजली पहुंचा सकता है, जो अभी तक इस सुविधा से महरूम है। ऊर्जा दक्ष लाइफस्टाइल अपनाने से देश की ऊर्जा प्रणाली के बेहतर दिशा में बदलाव पर एक सकारात्मक प्रोत्साहन मिलेगा।



बीईई की ओर से की गई कुछ पहल निम्नलिखित हैं

- इको निवास संहिता 2021 के साथ वैरिफिकेशन का फ्रेमवर्क बनाने, बिल्डिंग सर्विसेज के लिए न्यूनतम ऊर्जा निष्पादन और कोड के अनुपालन के नजरिये से महत्वपूर्ण निर्देश दिए गए।

- लर्निंग टूल के रूप मे वेब बेस्ड प्लेटफॉर्म ''द हैंडबुक ऑफ रेप्लिकेबल डिजाइन्स फॉर एनर्जी एफिशिएंट रेजिडेंशियल बिल्डिंग'' के इस्तेमाल से प्रतिकृति के डिजाइनों के तैयार संसाधनों का पूल भारत में ऊर्जा दक्ष घर बनाने के लिए किया जा सकता है ।

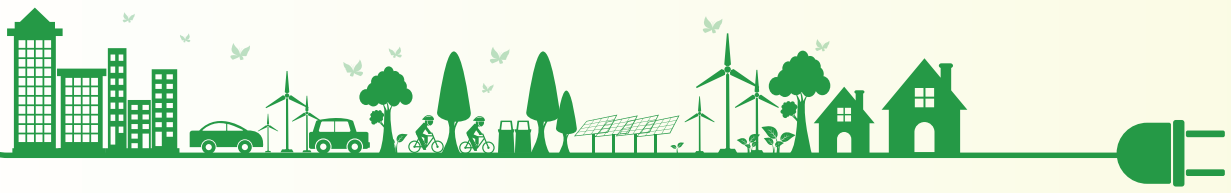
- निर्माण सामग्री की ऑनलाइन डायरेक्टरी बनाई गई, जो ऊर्जा दक्ष भवन के लिए मानकों को स्थापित करने की परिकल्पना करेगी।

- बीईई के ऊर्जा संरक्षण भवन संहिता का पालन करने वाले असाधारण रूप से दक्ष भवन के डिजाइनों को प्रोत्साहित करने के लिए एनईईआरएमएएन (किफायती और कुदरती आवास की दिशा में आंदोलन करने के लिए राष्ट्रीय ऊर्जा दक्षता का रोड मैप) पुरस्कारों की घोषणा की गई।

- ऊर्जा दक्ष घरों के लिए ऑनलाइन स्टार रेटिंग टूल बनाए गए। इससे ऊर्जा दक्षता में सुधार और लोगों के घरों में ऊर्जा की खपत कम करने में सहायता मिलेगी। इससे प्रोफेशनल्स को अपने घर में ऊर्जा की खपत का विश्लेषण करने में मदद मिलेगी और वह ऊर्जा बचाने के लिए बेहतर संसाधनों का चुनाव कर पाएंगे।

- ऊर्जा संरक्षण भवन संहिता (ईसीबीसी) 2017 और इको निवास संहिता (ईएनएस) 2021 के लिए 15 हजार से ज्यादा वास्तुकारों, इंजीनियरों और सरकारी अधिकारियों की ट्रेनिंग हुई।

बीईई ने ईसीबीसी का अपडेटेड वर्जन भी प्रकाशित किया, जो बिल्डिंग टेक्नोलॉजी में ऊर्जा की खपत को कम करने और कम कार्बन के विकास को बढ़ावा देने के संबंध में मौजूदा और भविष्य में होने वाली उन्नति की जानकारी देता है। ईसीबीसी ने बिल्डर्स, डिजाइनर्स और आर्किटेक्ट्स के लिए मानक तय किए, जिससे वह भवन के डिजाइन में नवीकरणीय ऊर्जा के स्त्रोतों को एकीकृत कर सकें। इसके साथ ही उनमें प्रत्यक्ष डिजाइन का भी समावेश कर सकें। इस कोड का उद्देश्य बिजली की खपत आदर्श रूप से कम करना है, जिससे लोगों को ज्यादा सुविधा मिले। इस वर्जन में कमर्शियल भवनों के लिए ऊर्जा तटस्थता अपनाने के लिए बिजली की खपत को कम से कम करने को प्राथमिकता दी गई।



CAPACITY BUILDING OF DISCOMS PROGRAM

BEE has organized five capacity building of circle level officials of DISCOMs on Demand Side Management and Energy Efficiency in association with State Designated Agencies under "Capacity Building of DISCOMs" program. The training programme covers entire process of demand side management starting with load research activity, which helps in identifying DSM potential, followed by cost effectiveness of DSM measures, project design, DSM financing. The following circle level training programs have been organized during July and September 2021.

Keonjhar, Odisha

The capacity building of 35 circle level officials of Tata Power Northern Odisha Distribution Ltd have been organized by BEE in association with SDA – Odisha during 25th – 27th July 2021 on DSM & Energy Efficiency under "Capacity Building of DISCOMs" program. The program was inaugurated by Superintendent Engineer, Keonjhar Circle.

Berhampur, Odisha

A 3 - day residential training program was organized for 35 circle level officials of Tata Power Southern Odisha Distribution Ltd in association with SDA – Odisha during 8th - 10th August 2021 at Berhampur, Odisha. The program was inaugurated by Superintendent Engineer, Berhampur Circle.

Phulbani, Odisha

The capacity building of 35 circle level officials of Tata Power Southern Odisha Distribution Ltd was organised by BEE in association with SDA - Odisha during 9th -11th August 2021 at Phulbani, Odisha. The program was inaugurated by Executive Engineer, Phulbani Circle.

Hubli, Karnataka

3 days' capacity building program for 24 circle level officials of Hubli Electricity Supply Company Limited were organized in association with Karnataka Renewable Energy Development Limited from 26th – 28th July 2021 at Hubli, Karnataka. The program was inaugurated by Executive Engineer, HESCOM.

Another program for 33 circle level officials of Hubli Electricity Supply Company Limited were organized from 29th – 31st July 2021 at Hubli, Karnataka. The program was inaugurated by Assistance Executive Engineer, HESCOM.

NATIONAL TRAINING PROGRAMME

Refresher Course on ECBC and ENS was conducted for existing Master Trainers from 20th to 23rd July, 2021.

MEETINGS/CONFERENCES

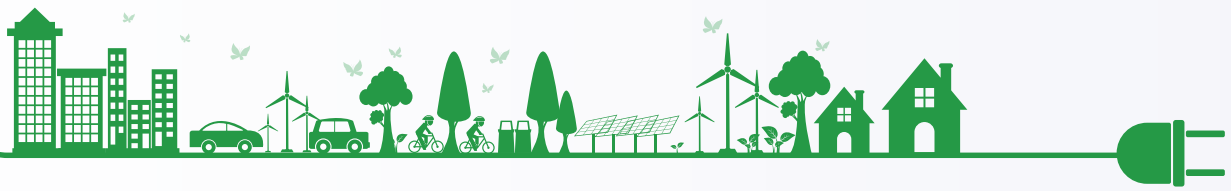
- A briefing webinar to introduce BEE's National Energy Efficiency Roadmap for Movement towards Affordable & Natural habitat (NEERMAN) Awards was held on 6th of August, 2021. The NEERMAN Awards for Energy Efficient Building Design in India have been constituted with the objective to annually acknowledge and encourage exemplary building designs complying with BEE's Energy Conservation Building Codes and to disseminate information for efficient use of energy and its conservation.

- Online stakeholder consultation meetings to seek expert comments and suggestions on the draft Roadmap for Mainstreaming Energy Efficiency in the Residential Buildings Sector in India were conducted on 17th, 19th and 23rd of August, 2021, with NIUA, BSES and EDS respectively.

- The 28th meeting of the Joint Implementation Group (JIG) under the Indo-Swiss Building Energy Efficiency Project (BEEP) was convened on 5th August, 2021, through video conferencing.

- National Media Consultation on Energy Efficient Buildings was conducted on 27th August, 2021, as a culmination event for the Media Engagement Programme. Various aspects of energy efficiency in buildings were addressed and reiterated to the media. The objective of the media engagement program has been to engage the media in creating awareness, sustaining debate through accurate information and enabling them to do quality reporting on the issue. Under this programme, several state level media workshops have been organized and media fellowships on affordable housing design and energy efficient buildings have been awarded in association with Centre for Media Studies (CMS) and the Indo-Swiss Building Energy Efficiency Project (BEEP) with support from Swiss Development Cooperation (SDC).

- An online Training Workshop "Integration of Building heat transfer in engineering undergraduate/postgraduate curriculum" was conducted on 28th and 29th August, 2021, in collaboration with the Indo-Swiss Building Energy Efficiency Project (BEEP) and IIT, Bhillai. The programme was attended by around 20 faculty members involved in teaching heat transfer and allied subjects in IITs, NITs and other engineering colleges.



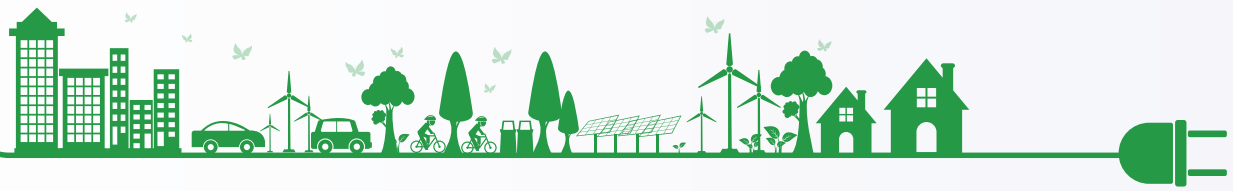
6th MEETING OF BRICS MINISTERS OF ENERGY

Union Minister of State for Power and Heavy Industries, Shri Krishan Pal Gurjar, chaired the "Meeting of BRICS Ministers of Energy" on 02nd September, 2021 under the Chairship of India. The Energy Ministers of BRICS Countries and delegates attended the virtual meeting. During the Meeting, BRICS Energy Report 2021, BRICS Energy Technology Report 2021 and BRICS Energy Research Directory 2021 were launched virtually by Shri Gurjar, in the presence of the Energy Ministers of BRICS Countries.

This was the 6th meeting of BRICS Energy Ministers and a joint communique was adopted. Addressing the meet, Shri Gurjar emphasised upon the need of promoting energy efficiency and renewables to combat adverse effect of climate change. He also welcomed the efforts made by Energy professionals from Brazil, Russia, China, India, South Africa in ensuring regular power supply despite difficult circumstances due to Covid 19 conditions. During the Summit, India also reiterated focus on one sun, one world and one grid as the initiative proposed by the Prime Minister Shri Narendra Modi.

Shri Gurjar underlined that India is committed to improving the quality of life of its citizens by ensuring adequacy of electricity availability. He said, "The 'Power for All' by 2022 program is a major step in this direction. We have achieved universal access. We added 28 million consumers in just about 18 months, which was the fastest expansion access anywhere in the world, and much of it is due to the fact that we went in for renewables in a major way."

The Ministers from other BRICS countries, Brazil, Russia, China, and South Africa also highlighted their targets and achievements in the field of energy transition and climate change. This Energy Ministers' Summit of BRICS countries was the concluding event as part of the energy dialogue between member countries, since April 2021.
Various events like hydrogen webinar, building energy efficiency and battery storage were conducted and saw participation of large number of experts from these countries.



Energy Ministers recognized the unprecedented impact of the COVID-19 pandemic on the energy sector. It was noted that electricity security and resilient energy systems are more indispensable than ever for providing uninterrupted supply of energy. They commended the contribution made by energy professionals in BRICS Countries and efforts taken by international communities to cope with the adverse impacts of the COVID-19 pandemic on the energy sector.

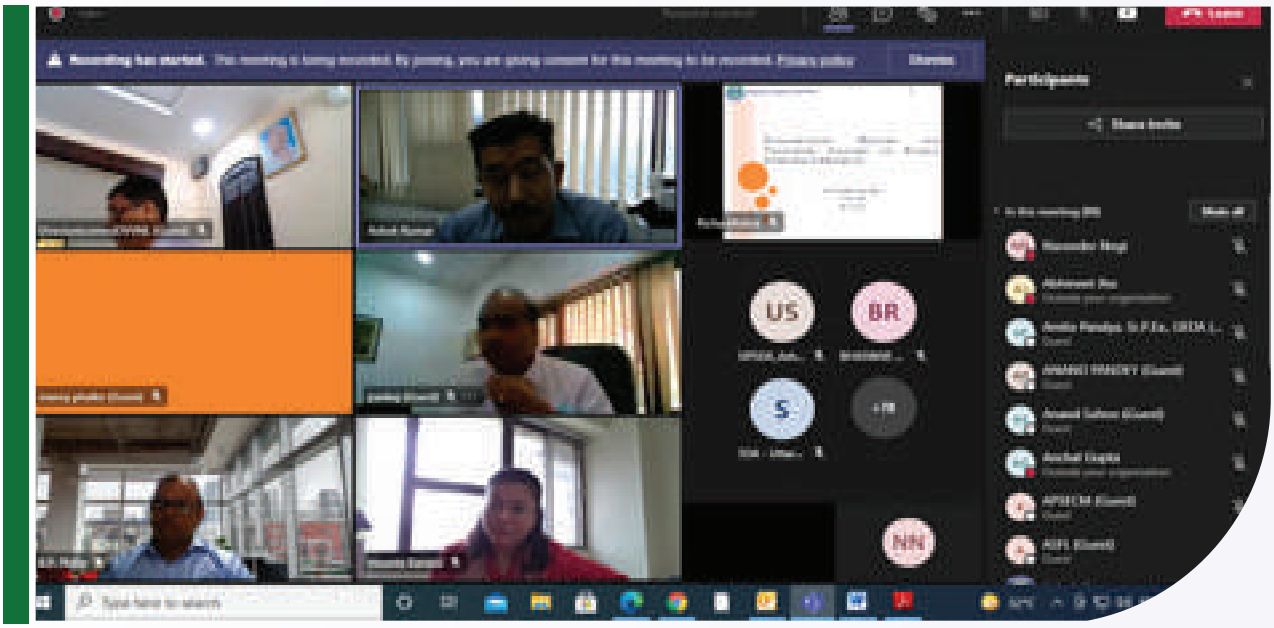
GRADING OF ENERGY EFFICIENCY PROJECTS

To unlock the economic and environmental advantages of energy efficiency, a huge increase in finance is necessary, with estimates projecting a need to mobilize investment over Rs. 1 lakh crore per annum till 2030. In order to create the market for energy efficiency it is imperative to ease the financing of energy efficiency projects through various fiscal instruments.

In September 2021, BEE has launched a pilot programme for uptake of financing energy efficiency projects by providing graded EE projects to Financial Institutions (FIs) under the Energy Efficiency Financing Platform (EEFP). Under this programme BEE shall reimburse grading cost of maximum Rs. 2.90 lakh per project for 100 EE projects that shall be graded by empanelled grading agencies and financed by empanelled FIs. In September 2021, BEE signed Memorandum of Association (MoA) with IREDA to empanel it under this programme

This pilot project is for duration of one year. BEE has empanelled three grading agencies – CRISIL Ltd; ICRA Analytics Ltd; and, CARE Advisory Research and Training Ltd. BEE has also empanelled two financial institutions i.e., IREDA and YES Bank. Eligible borrowers are – SMEs, Large industries, OEMs, ESCOs, Central/ State government offices. To take benefit of this reimbursement of grading cost for energy efficiency projects, borrowers are requested to contact empanelled FIs and grading agencies.

On 27th September, 2021, BEE organized a virtual meeting on Grading of EE Projects in the presence of the empanelled Financial Institutions, Grading Agencies and representatives from MSME Industries, Large Industries etc. to disseminate the detailed information regarding this pilot project and to create the awareness among the concerned stakeholders to grab the maximum benefit out of this project.



In the meeting, BEE emphasised that this pilot project is expected to take care of the challenges faced by FIs while appraising energy efficient technologies / projects for financing. The representatives from CRISIL, CARE Advisory Research and Training Limited, and ICRA Analytics Ltd., delivered their presentation to elaborate on what will be their approach while carrying out the grading exercise on EE Projects. During the meeting, BEE clarified queries raised by participants regarding the benefits as well as mechanism of this programme.

Hence, BEE is spreading awareness about this pilot project to accelerate investment in energy efficient technologies and projects.

IMPACT OF REFRIGERANTS ON ENERGY EFFICIENCY OF VAPOUR COMPRESSION REFRIGERATION SYSTEMS FOR THE DOMESTIC AND COMMERCIAL SECTOR

India's national climate action plans, under the Paris Agreement to reduce the emission intensity of the economy by 33 to 35% by 2030 from 2005 levels. With the phase-out of ozone-depleting substances (ODS) such as chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs) under the Montreal Protocol on Substances that Deplete the Ozone Layer, the use of Hydrofluorocarbons (HFCs) as main replacements has been increasing. HFCs have become the fastest-growing source of greenhouse gas emissions globally. In October 2016, the world's nations adopted the Kigali Amendment to the Montreal Protocol, a historic accord committing economies worldwide to significantly reduce consumption and production of HFCs. The reduction of HFCs globally has been identified as one of the most important actions that can contribute to avoiding 0.5°C warming by 2100

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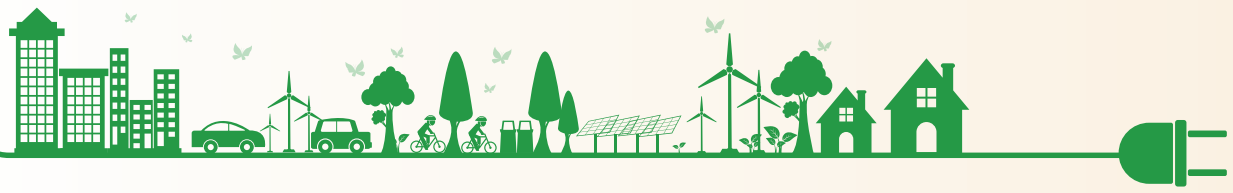
As per the HCFC Phase-out schedule in developing countries (Montreal Phase out schedule), it was intended to reduce national consumption by 10 percent by 2015, 35 percent by 2020, 67.5 percent by 2025, and 97.5 percent by 2030, with consumption after 2030 restricted to the servicing of refrigeration and air-conditioning equipment. By 2040, HCFC production and consumption for refrigerant uses must cease.

Also, HFCs are being phased out due to their high Global Warming Potential (GWP), and with the recent negotiations regarding the HFC phase-down amendment of the Montreal Protocol, alternatives to HFCs are more important. Natural refrigerants' GWP is near zero, non-patented and highly energy-efficient; thus, adopting them will reduce costs and maximize energy and emissions savings.

The phase out of HCFCs and HFCs could be a potential win-win situation for the consumer, industry, and the environment, if done rightly. Both of these not only have high GWP but also offers relatively poor energy efficiency. Indian industry would be better off by skipping HCFC completely and choosing energy efficient, low-GWP alternatives already in practice in most of the developed nations. The usage of natural hydrocarbon refrigerants, such as Propane (R290) and Isobutane (R600a), Carbon Dioxide (R744) and Ammonia (R717) may be encouraged.



REFRIGERANTS	TYPE	GWP (100 YEAR, AR 2007)
R410A – R32/R125 – 50:50	HFC	2088
R22 – Chloro Difloro Methane	HCFC	1810
R134A – Chloro Difloro Methane	HFC	1430
R32 – Methylene Flouride	HFC	675
R290 - Propane	HC, 'Natural'	3.3
R1270 – Propylene	HC, 'Natural	1.8
R744 – Carbon Dioxide	'Natural'	1
R717 – Ammonia	'Natural'	0

Refrigerants' Global Warming Potential (GWP)

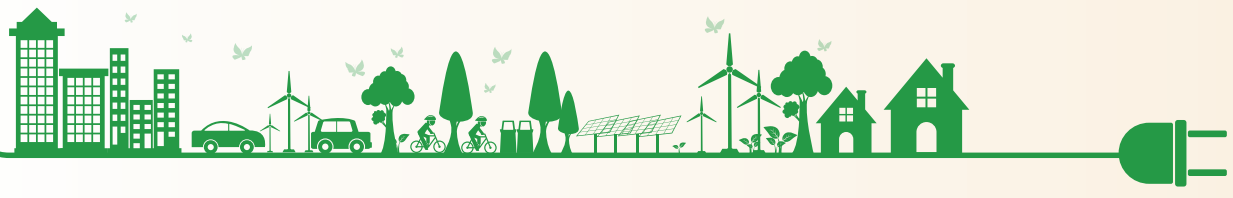
BENEFITS OF HYDROCARBON-BASED REFRIGERANTS

1. Regulatory Compliance

Natural refrigerants, such as hydrocarbons, are not subject to any legislative and/or regulatory requirements under the global HFC phase-down, including the Kigali Amendment to the Montreal Protocol and the EU F-Gas Regulation. The restrictions on fluorinated refrigerants have become stricter across the world.

2. Energy Efficiency

While natural refrigerants significantly reduce direct emissions, they are proven to be more energy efficient, thereby simultaneously reducing indirect emissions. For instance, R290 (propane) plug-in refrigeration units have been reported to deliver up to 30% higher energy efficiency than their HFC counterparts. The better thermodynamic and transport properties of such hydrocarbons can be accredited for being energy efficient. Also, the component modifications such as improved compressor or heat exchanger design, as well as installation of variable speed drives contributes to the overall energy efficient system.



Further, R-90 is a good fit for air conditioners in India because of its warm and humid climatic conditions with ambient temperatures in most of the parts frequently exceeding 40°C during the months between April to September. People are increasingly turning to air conditioning systems during summers. The AC units of 1 to 1.5 Tonnes forms majority of AC sales in India. When compared to various HFCs, R290 is far more efficient in the high ambient temperature. Switching to R290 can help a majority of Consumers save money in the long run, while being significantly more energy efficient and environment friendly.

3. Low Impact on the Environment

Owing to the minimal global warming potential (GWP), no ozone depleting potential (ODP) and non-toxic hydrocarbons, such natural refrigerants leave minimal impact on the environment.

4. Least Technology Barriers for Manufacturers

As a naturally occurring chemicals in Natural Refrigerators, manufacturers have the potential to adopt it at a low cost and further develop this technology. Doing so could reduce the market price of air conditioners using natural refrigerants and at the same time help strengthen the servicing network for hydrocarbon ACs. The manufacturers may be encouraged to adopt such refrigerants used for star labelled products.

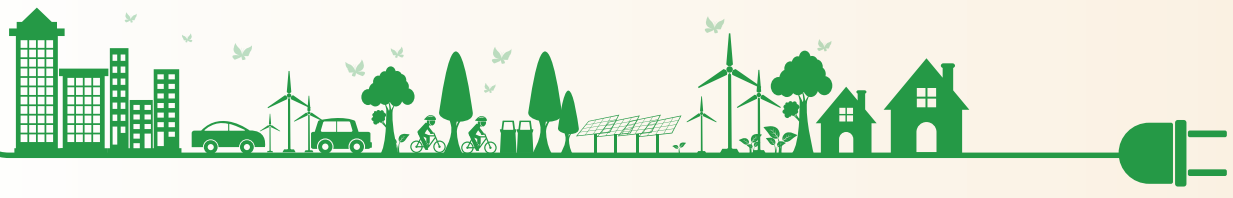
SECTOR	REFRIGERANT ALTERNATIVES
RESIDENTIAL SECTOR	R290
COMMERCIAL SECTOR	CO2, R600A, AMMONIA

REFERENCES:

UNEP KIGALI COOLING EFFICIENCY PROGRAMME

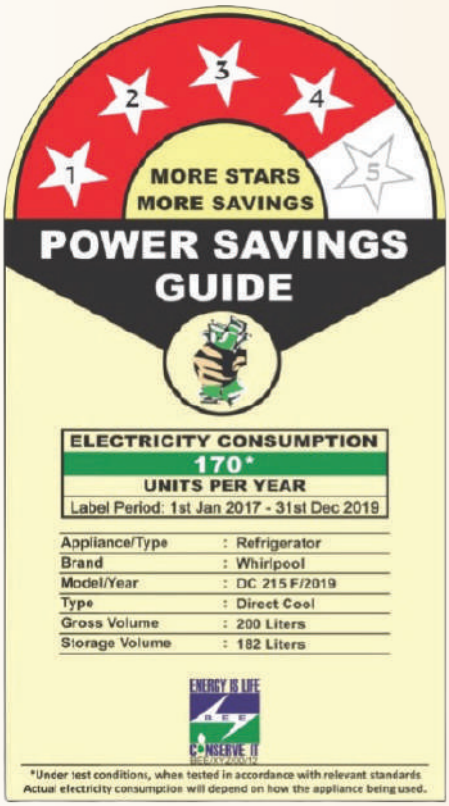
GHG protocol website (www.ghgprotocol.org)

The Natural Resources Defense Council (www.nrdc.org)



CHECK TESTING ACTIVITY UNDER STANDARDS & LABELLING (S&L) PROGRAM OF BUREAU OF ENERGY EFFICIENCY

Under the S&L program, Bureau has the mandate to ensure that a strong monitoring, verification and enforcement (MV&E) mechanism is in place to protect the interest of the consumer and the society. Under Monitoring and Verification, BEE conducts Check testing of the appliances to assess whether the claims made for the energy performance of individual model by the permittee are accurate under the conditions stipulated in the relevant product regulation/ schedule through actual laboratory tests. Check testing is conducted to check whether the performance of the appliance registered with BEE is as described by the label approved by BEE. BEE has recently released an advertisement in the leading national and regional newspapers informing consumers about the failure of a Whirlpool Direct Cool Refrigerator in second check testing conducted by BEE in third party laboratory.



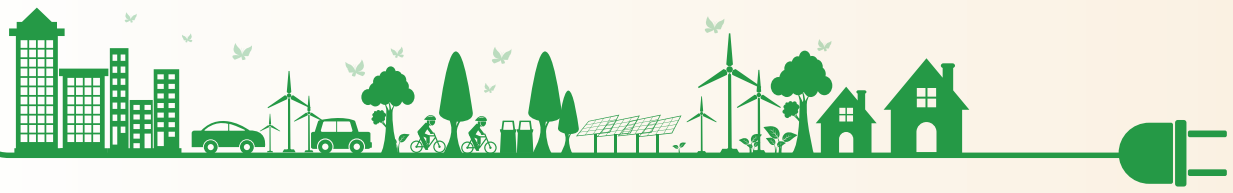
EVALUATION OF LIGHTING EFFICIENCY POLICY AND MARKET TRANSFORMATION IN INDIA

Electric lights are used by millions across India. The lighting market has increased exponentially over the years due to rapid population growth, more dwelling units, concept of smart lighting, and electrification at remote places. In Fiscal Year 2018-19, India manufactured about 1.4 billion lamps and tube-lights. The lighting segment consumes approximately 18% of total electricity use in the residential sector, resulting in 40 million tons of greenhouse gases (GHG) emissions.

Energy efficient lighting is one of the most cost effective measures to address the impacts of growing electricity demand from the sector. Recognizing this, India adopted an energy efficiency policy for Tubular Fluorescent Lamps (TFL) in 2006. A decade later, an efficiency policy for LED bulbs was also announced to cover another new category of lamps as LEDs gaining a mainstream lighting market across industrial, commercial and residential installations. Since its adoption, 1.2 billion TFLs and 0.8 billion LED lamps have been star labeled, thereby developing the market towards more energy-efficient lighting. India has experienced one of the most remarkable success in market transformation for lighting as a result of efficiency policies and mass procurement exercises such as UJALA scheme. Over the last 15 years, lighting efficiency policies have resulted in cumulative electricity savings of 18 Terawatt-hours and reduced GHG emissions by 15 million tons.

Sources:

1. BEE database for approved models of LED bulbs and Tubular Fluorescent Lamps
2. Reference of UJALA scheme
3. ELCOMA's Lighting data for the FY 2018-19



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