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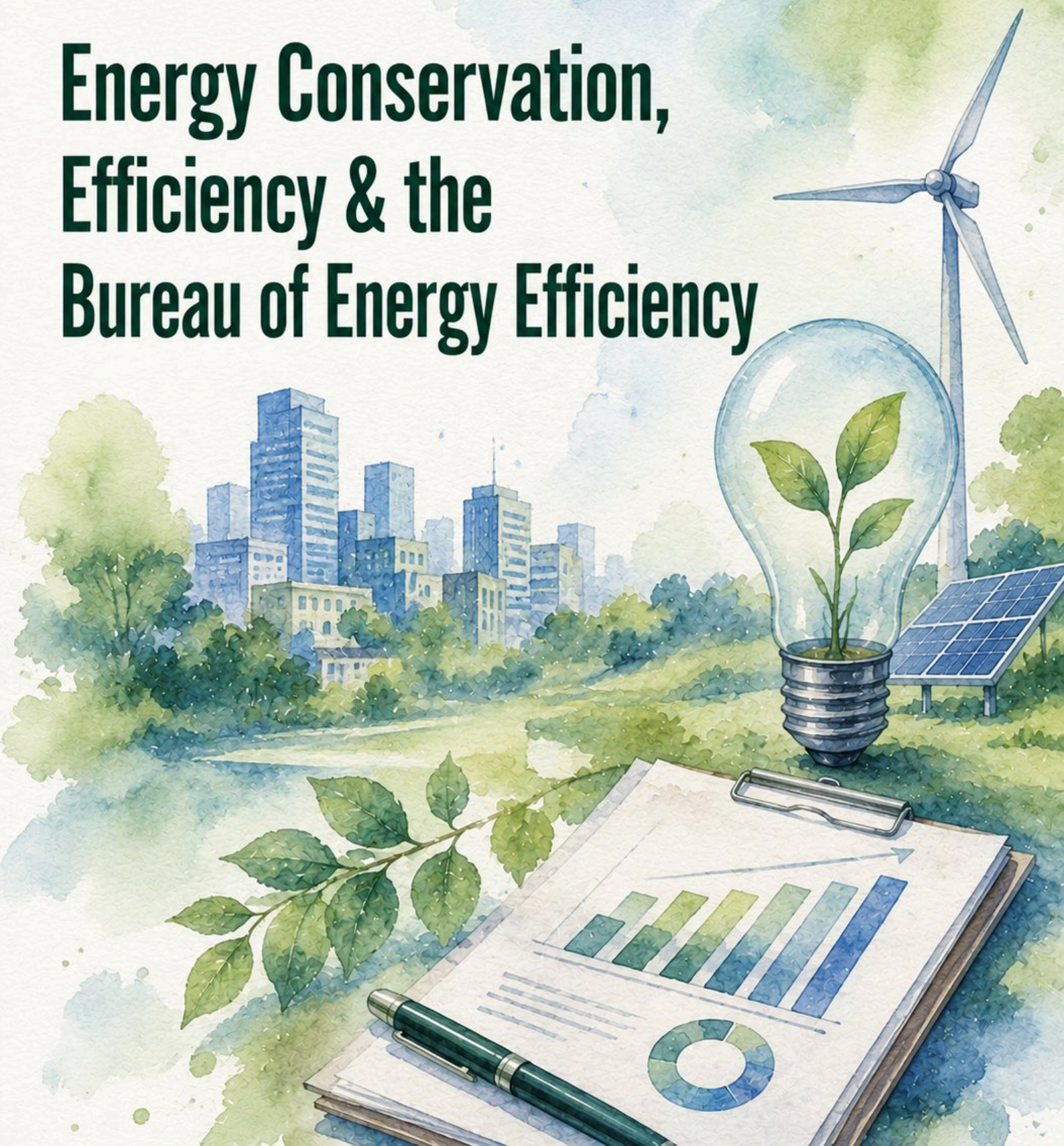
Energy Conservation, Efficiency & the Bureau of Energy Efficiency



BHATT & JOSHI ASSOCIATES — INDIAN POWER SECTOR LEGAL SERIES

Energy Conservation Act & Efficiency Regulation

BEE, PAT Scheme, ECBC, CCTS, and the Clean Energy Transition

Booklet V of VI

Bhatt & Joshi Associates

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CHAPTER ONE

The Energy Conservation Act, 2001: Structure and Evolution

Legislative History, Bureau of Energy Efficiency, and the 2022 Amendment

The Energy Conservation Act, 2001 established India's first comprehensive legal framework for energy efficiency, creating the Bureau of Energy Efficiency and mandating standards and labelling, energy audits, and the designation of energy-intensive industries as Designated Consumers.

1.1 Legislative History and Policy Context

The Energy Conservation Act, 2001 (ECA) was enacted against the backdrop of India's growing energy import dependence, the economic inefficiency of the country's energy-intensive industrial base, and international commitments on climate change that required a demonstrable commitment to reducing the energy intensity of economic activity. The Act was developed through a consultative process that engaged industrial stakeholders, energy experts, and state governments, resulting in a framework that balanced mandatory requirements for large energy consumers with market-based incentives for efficiency improvement. The ECA established the Bureau of Energy Efficiency (BEE) under the Ministry of Power as the institutional vehicle for implementing the energy efficiency programme, providing it with statutory authority, a designated funding mechanism (the Energy Conservation Corpus Fund), and a mandate to develop and enforce energy efficiency standards across multiple sectors.

The Energy Conservation (Amendment) Act, 2022, enacted after two decades of experience with the original framework, significantly expanded the ECA's scope and ambition. The 2022 Amendment added the Carbon Credit Trading Scheme (CCTS) as an entirely new component of India's energy governance framework, making the ECA the primary statutory vehicle for domestic carbon pricing. It also strengthened the energy conservation requirements for the building sector through the mandatory application of the Energy Conservation Building Code (ECBC) to all large commercial buildings, expanded the Standards and Labelling programme to new categories of equipment and appliances, and introduced provisions for the use of non-fossil fuel sources in energy-intensive industries under a mandatory obligation framework. The 2022 Amendment represents a significant evolution of the ECA from an energy efficiency law focused on industrial consumption reduction to a comprehensive clean energy transition law covering carbon markets, building codes, and clean energy obligations.

1.2 Bureau of Energy Efficiency: Mandate and Functions

The Bureau of Energy Efficiency (BEE), established under Section 3 of the Energy Conservation Act, 2001 as a statutory body under the Ministry of Power, is responsible for the development and administration of India's energy efficiency regulatory programme. BEE's functions include: the development and notification of energy consumption standards for Designated Consumers (large energy-intensive industrial and commercial establishments) and energy performance standards for equipment and appliances; the administration of the Standards and Labelling (S&L) programme for electrical and other energy-using equipment; the development and implementation of the Perform, Achieve and Trade (PAT) scheme for industrial energy efficiency improvement; the administration of the Energy Conservation Building Code (ECBC) for commercial and residential buildings; the development of accreditation and certification systems for energy auditors and energy managers; and (from 2022) the administration of the Carbon Credit Trading Scheme.

BEE operates through a network of State Designated Agencies (SDAs) in each state, which are responsible for implementing the ECA's provisions within the state, including the identification and registration of Designated Consumers, the enforcement of energy audit and energy manager appointment requirements, and the coordination of state-level energy efficiency programmes. The SDAs are typically located within state energy or power departments and receive financial and technical support from BEE for the implementation of national energy efficiency programmes.

1.3 Designated Consumers: Definition and Obligations

The concept of "Designated Consumers" (DCs) is the cornerstone of the ECA's mandatory energy management framework. Section 14 of the Act enables the Central Government to notify categories of energy-intensive industries and commercial establishments as Designated Consumers, imposing on them mandatory obligations for energy audit, energy management, and the achievement of specific energy consumption targets. The Schedule to the ECA lists the industries notifiable as DCs, including thermal power plants, fertiliser plants, aluminium, iron and steel, cement, pulp and paper, textiles, chemicals, petrochemicals, and chlor-alkali plants, as well as commercial establishments including airports, railways, transport sector, and large buildings.

Designated Consumers are obligated under the Act to: appoint or designate an Energy Manager from a list of certified energy managers maintained by BEE; conduct energy audits at specified intervals through an accredited Energy Auditor and submit the audit report to the SDA and to BEE; implement the energy savings recommended in the energy audit within the timeframe specified by BEE; achieve the specific energy consumption (SEC) targets specified in the PAT notifications applicable to their

industry; and report their energy consumption data to BEE and the SDA annually. Non-compliance with DC obligations can result in the imposition of penalties specified in the ECA, though the enforcement of these penalties has been inconsistent and limited in practice, which is one of the chronic weaknesses of the ECA implementation framework.

1.4 Standards and Labelling Programme

The Standards and Labelling (S&L) programme administered by BEE under Section 14(a) of the ECA is designed to improve the energy efficiency of energy-using equipment and appliances by: setting Minimum Energy Performance Standards (MEPS) that prohibit the manufacture, import, and sale of equipment below a specified efficiency threshold; and specifying Energy Performance Labels that provide consumers with information about the relative energy efficiency of different products in a category (typically a star-rating system from 1 to 5 stars, with higher stars indicating better efficiency). The combination of MEPS (which eliminates the least efficient products from the market) and labelling (which provides comparative information to guide consumer choice towards more efficient options) is the standard international approach to market transformation for energy-using products.

BEE has progressively expanded the S&L programme from the initial focus on room air conditioners, refrigerators, and fluorescent lamps to over 30 product categories including: LED lamps and luminaires, distribution transformers, agricultural pump sets, industrial motors, ceiling fans, colour televisions, washing machines, computers, servers, and microwave ovens. The programme has achieved significant energy savings by raising the average energy efficiency of covered products through competitive dynamics: manufacturers compete on energy efficiency star ratings as a product differentiation attribute (particularly for products where energy cost is a significant factor in the consumer's purchase decision, such as air conditioners and refrigerators), driving continuous improvement in efficiency beyond the mandated minimum standards.

CHAPTER TWO

PAT Scheme: Industrial Energy Efficiency at Scale

Perform Achieve and Trade, Energy Saving Certificates, and Industrial Transformation

The Perform, Achieve and Trade (PAT) scheme is India's flagship market-based instrument for industrial energy efficiency improvement, creating tradeable Energy Saving Certificates (ESCerts) that enable energy-intensive industries to meet their efficiency targets through a combination of internal improvement and market trading.

2.1 PAT Scheme Design and Mechanism

The PAT scheme, launched in 2012 under the ECA framework, sets specific energy consumption (SEC) reduction targets for individual Designated Consumer plants in eight energy-intensive sectors: thermal power plants, aluminium, iron & steel, cement, chlor-alkali, fertilisers, pulp & paper, and textile (spinning mills). Each DC is assigned a normalised SEC baseline (the energy consumed per unit of production, adjusted for product mix) for the base year, and a target SEC for the end of the PAT compliance cycle (typically three years). DCs that achieve a lower SEC than their target earn Energy Saving Certificates (ESCerts) representing the energy savings achieved beyond the target; DCs that fail to achieve their target must purchase ESCerts from over-achievers to demonstrate compliance, paying the market price for ESCerts on the Power Exchanges.

The ESCert mechanism creates a cap-and-trade structure for industrial energy efficiency: the aggregate of all DC targets specifies the total energy savings required from the covered sector, and the market for ESCerts provides a cost-effective mechanism for distributing the compliance burden among DCs. DCs for whom energy efficiency improvements are relatively cheap can over-comply and earn ESCerts for sale, while DCs facing higher compliance costs can meet their obligations by purchasing ESCerts, achieving the aggregate target at lower total cost than if each DC were required to achieve its target independently. The ESCert price discovered through exchange trading provides a market signal about the marginal cost of industrial energy efficiency improvement, informing investment decisions and policy design.

2.2 PAT Scheme: Results and Achievements

The PAT scheme has completed several cycles since its launch in 2012, with each cycle expanding coverage to new sectors and DCs. PAT Cycle I (2012–2015) covered 478 DCs in eight sectors and achieved energy savings of approximately 8.67 million tonnes of oil equivalent (MTOE), exceeding the scheme's target of 6.86 MTOE. PAT Cycle II (2016–2019) expanded to 621 DCs in eight sectors, with a target of 8.869 MTOE; the actual achievements showed that the scheme was progressively improving in its coverage and compliance rates as institutional capacity strengthened and DCs developed better energy management systems.

The ESCert market, hosted on IEX and PXIL, has generally been characterised by: limited liquidity (relatively few ESCerts being traded, since most DCs prefer to demonstrate compliance through direct ESCert earning rather than purchasing from the market); price volatility (with ESCert prices varying significantly between trading sessions); and limited price discovery (since the thin market does not provide reliable signals about the marginal cost of energy efficiency improvement across the DC population). The design of the ESCert market has been recognised as requiring improvements to enhance liquidity and price discovery, and

CERC and BEE have been working on reforms to the ESCert trading framework as part of the broader Carbon Credit Trading Scheme development under the 2022 Amendment.

2.3 Energy Auditors and Managers: Accreditation Framework

The accreditation of Energy Auditors and the certification of Energy Managers under the ECA framework provides the human resource infrastructure for the energy efficiency programme. BEE administers the National Examination for Energy Auditors and Energy Managers, which assesses candidates' knowledge of energy auditing techniques, energy management principles, sector-specific energy use patterns, and the regulatory framework of the ECA. Successful candidates are registered with BEE and their credentials are maintained in the National Register of Energy Auditors/Managers, which DCs must consult when appointing their energy management personnel.

The quality of energy audits is a critical determinant of the PAT scheme's effectiveness: if energy audits are poorly conducted (failing to identify all energy savings opportunities or providing inaccurate energy consumption measurements), the SEC baselines and targets may be incorrectly set, undermining the integrity of the compliance system. BEE has worked to improve energy audit quality through: the development of detailed sector-specific energy audit manuals; the accreditation of Energy Audit firms (as distinct from individual Energy Auditors); and the independent verification of DC-reported energy consumption data through cross-checking against fuel consumption, production records, and utility bills.

CHAPTER THREE

Energy Conservation Building Code

ECBC 2017, Eco-Niwas Samhita, and Building Sector Efficiency

3.1 ECBC 2017: Mandatory Standards for Commercial Buildings

The Energy Conservation Building Code (ECBC), originally issued by BEE in 2007 and comprehensively revised in 2017, establishes mandatory energy performance standards for new commercial buildings in India with a connected load of 100 kW or above. The ECBC specifies minimum performance requirements for: building envelope (insulation values, window-to-wall ratio, solar heat gain coefficient of glazing); HVAC systems (minimum seasonal energy efficiency ratios for air conditioners, insulation requirements for ducts and pipes); lighting (maximum connected lighting power density for different space types); electrical systems (power factor requirements, metering for energy management); and renewable energy (minimum provision of solar water heating or PV for eligible buildings). Buildings that comply with all ECBC requirements are classified as "ECBC Compliant"; buildings achieving higher levels of energy performance can earn ECBC+ or Super ECBC designations, with associated incentives in some states.

The 2022 Amendment to the ECA strengthened the ECBC's legal status by making compliance with the code mandatory for all large commercial buildings notified by the Central Government, overriding any inconsistent state building regulations. States are required to adopt and enforce the ECBC through their building bye-laws and permit processes, ensuring that ECBC compliance is verified before a new commercial building is granted an occupancy certificate. The mandatory enforcement of ECBC compliance by state urban local bodies is the primary mechanism through which the building sector's energy efficiency standards are implemented in practice, and the effectiveness of this enforcement varies considerably across states depending on the capacity and commitment of the local governance structures responsible for building regulation.

3.2 Eco-Niwas Samhita: Residential Building Standards

The Eco-Niwas Samhita (ENS), issued by BEE in 2018 and revised in 2021 and 2023, establishes energy efficiency standards specifically for the residential building sector, complementing the commercial building standards of the ECBC. The ENS recognises the different design parameters and user behaviour characteristics of the residential sector compared to the commercial sector, specifying requirements that are appropriate for the typical residential building typologies found across India's diverse climatic zones.

The ENS covers residential buildings with eight or more dwelling units (multi-family residential buildings), specifying minimum requirements for: building envelope performance (including wall and roof insulation, window-to-wall ratio, and shading design); glazing performance; electrical lighting efficiency; and equipment (particularly for appliances and HVAC systems where the ENS can specify minimum performance standards consistent with the S&L programme). The ENS's approach to building energy performance is based on a prescriptive path (specifying minimum requirements for each element) and a performance path (allowing flexibility in the design of individual elements provided the overall energy performance of the building meets a specified target), providing architects and developers with the flexibility to optimise their building designs while ensuring that the overall

energy performance meets the mandated standard.

CHAPTER FOUR

Carbon Credit Trading Scheme: India's Domestic Carbon Market

CCTS Framework, Carbon Credit Certificates, and Interface with Electricity Sector

4.1 Carbon Credit Trading Scheme: Legal Architecture

The Carbon Credit Trading Scheme (CCTS), introduced by the Energy Conservation (Amendment) Act, 2022, represents India's most significant policy innovation in energy and climate governance since the original ECA. The CCTS creates a domestic carbon market in which "carbon credit certificates" (CCCs) representing verified reductions in greenhouse gas (GHG) emissions are issued to eligible entities and can be traded on designated trading platforms. The CCTS is designed as an intensity-based trading scheme (in which the compliance obligation is expressed as an emission intensity target per unit of output, rather than an absolute cap on total emissions), consistent with India's NDC commitment of reducing the emissions intensity of GDP rather than imposing absolute emission caps in the near term.

The legal framework of the CCTS under the amended ECA provides for: the designation of "obligated entities" (large emitting entities in specified sectors, notified by the Central Government) whose GHG emissions are subject to the scheme; the specification of sector-specific "baselines" (the emission intensity level against which each obligated entity's performance is measured); the issuance of CCCs to entities whose actual emission intensity is below the baseline (with each CCC representing one tonne of CO2-equivalent reduction below the baseline); the specification of "compliance requirements" under which entities whose emission intensity exceeds the baseline must acquire sufficient CCCs to cover the excess; and the trading of CCCs on designated platforms (initially the Power Exchanges) at market-discovered prices.

4.2 CCTS and the Electricity Sector

The electricity sector — specifically, coal-based and gas-based thermal power generation — is one of the most significant sectors covered by the CCTS, given that electricity generation accounts for approximately 40 per cent of India's GHG emissions. Thermal generating companies whose emission intensity (expressed as tonnes of CO2 per MWh of electricity generated) is below the specified sector baseline will earn CCCs, providing an additional revenue stream that supplements their regulated electricity tariff income. Thermal generating companies above the baseline will be obligated to purchase CCCs to achieve compliance, increasing their effective operating costs and potentially reducing their economic competitiveness in the electricity market merit order.

The interface between the CCTS and the electricity tariff regulatory framework is a developing area of legal complexity. The fundamental question is: how should the CCTS-related revenues (from CCC sales) and costs (from CCC purchases) of thermal generating companies be treated in CERC's and the SERCs' tariff proceedings? If CCC revenues are treated as a windfall that the generator retains in full, they effectively augment the generator's return on equity above the regulatory target, potentially justifying a reduction in the regulated tariff. If CCC purchase costs are treated as a pass-through to consumers (as a legitimate operating cost), they increase the electricity tariff, undermining the CCTS's incentive for emission reduction at the generator level.

CERC has not yet issued definitive guidance on this question, and it is likely to be addressed through regulatory consultations and ultimately through formal tariff regulations as the CCTS becomes operational.

4.3 Renewable Energy and Carbon Credits

Renewable energy generators — who produce electricity without direct GHG emissions — can earn carbon credits in the CCTS in proportion to the fossil fuel generation they displace through the "avoided emissions" methodology. Under this methodology, the carbon credit value of renewable generation is determined as the product of: the quantity of electricity generated from the renewable source (in MWh); and the emission intensity of the electricity generation that would have occurred in the absence of the renewable generation (the "baseline emission factor," expressed in tonnes of CO2 per MWh, determined by BEE based on the average emission intensity of the electricity grid). The resulting avoided emission quantity, expressed in tonnes of CO2-equivalent, entitles the renewable generator to earn an equivalent number of CCCs.

The integration of renewable energy CCCs with the existing REC mechanism is a regulatory challenge that BEE, CERC, and the Ministry of Power must address to ensure that renewable energy generators do not "double count" the environmental attribute of their generation by claiming both RECs (for RPO compliance purposes) and CCCs (for CCTS purposes). The general principle in carbon market design is that each unit of environmental benefit can only be claimed once; the regulatory framework for the CCTS and the REC mechanism must therefore specify clear rules for preventing double counting, including provisions for the retirement of RECs when CCCs are claimed for the same generation, or vice versa.

CHAPTER FIVE

Energy Efficiency Finance and Demand-Side Management

ECF, ESCO Framework, DSM Regulations, and International Cooperation

5.1 Energy Conservation Corpus Fund

The Energy Conservation Corpus Fund (ECF), established under Section 10 of the ECA and constituted under the Energy Conservation (Amendment) Act, 2010, provides the financial resources for BEE's energy efficiency programmes. The ECF is funded through: cess on coal production (a levy on coal mined in India, a portion of which is dedicated to the ECF); budgetary grants from the Ministry of Power; contributions from multilateral institutions and bilateral donors; and proceeds from the sale of carbon credits earned through energy efficiency activities administered by BEE. The ECF finances: the development and implementation of the S&L programme; the PAT scheme infrastructure (including the ESCert registry and trading platform); the ECBC development and capacity building; BEE's R&D and demonstration activities for emerging energy-efficient technologies; and the development of the CCTS framework.

5.2 Energy Service Companies: Legal and Commercial Framework

Energy Service Companies (ESCOs) are specialised entities that implement energy efficiency improvement projects in buildings, industrial plants, and public infrastructure under Energy Performance Contracts (EPCs) in which the ESCO's remuneration is tied to the verified energy savings achieved. The ESCO framework provides a commercial mechanism for financing energy efficiency investments without requiring the energy consumer (building owner, industrial company, municipality) to invest its own capital: the ESCO invests in the efficiency improvement and recovers its investment and profit from the energy cost savings that result. This "off-balance-sheet" financing model is particularly valuable for energy consumers with limited access to capital or with a preference for fixed operating costs over variable energy costs.

BEE has worked to develop the ESCO market in India through: the development of standard ESCO contract templates; the accreditation of ESCOs (providing a quality assurance framework for ESCO services); the development of energy efficiency financing mechanisms including guarantee schemes, partial credit guarantees, and concessional lines of credit from development banks; and the promotion of ESCO projects in the public sector (government buildings, municipal infrastructure, public hospitals and schools) through BEE-facilitated programmes. The ESCO market in India has grown from a very small base in the early 2000s to a multi-thousand-crore-rupee industry by the 2020s, though it remains smaller relative to the scale of India's energy efficiency opportunity than in comparable emerging economies.

5.3 Demand-Side Management: SERC Framework

Demand-Side Management (DSM) programmes administered by distribution utilities — including energy audit assistance for consumers, rebates for the purchase of energy-efficient appliances, time-of-use tariff programmes, and direct load control programmes — are an important complement to the supply-side interventions of BEE's programmes. CERC and the SERCs have

issued DSM Regulations specifying the framework within which distribution utilities are required to develop and implement DSM programmes, including the obligation to submit DSM Plans for Commission approval and to achieve specified energy savings targets through their DSM activities.

The regulatory treatment of DSM programme costs in the distribution utility's ARR is an important issue for SERC regulation: DSM programmes involve upfront costs (rebates to consumers, programme administration, measurement and verification) that must be recovered from all consumers through the regulated tariff, even though the benefits of DSM (reduced peak demand and energy consumption) accrue primarily to the consumers who participate in the programme. SERCs have addressed this cost recovery question by treating prudently incurred DSM programme costs as allowable operating expenses recoverable through the ARR, subject to the Commission's scrutiny of the programme's design, implementation quality, and verified energy savings achievements.

CHAPTER SIX

Energy Efficiency and the Energy Transition

ECA-Electricity Act Interface, CBAM Implications, Net Zero, and the Reform Agenda

6.1 Interface between ECA and the Electricity Act, 2003

The Energy Conservation Act, 2001 and the Electricity Act, 2003 operate as complementary legislative frameworks for India's energy sector governance, each addressing distinct but overlapping dimensions of the energy efficiency and energy transition agenda. The primary interface between the two Acts occurs at: the level of the electricity generation sector (where ECA's PAT scheme and the proposed CCTS interact with CERC's tariff regulatory framework); the level of electricity distribution (where BEE's DSM regulations interact with SERC's distribution tariff framework); the level of electricity consumption (where ECA's S&L programme for electrical appliances and ECBC for buildings interact with the consumer categories and metering framework of the EA 2003 distribution licence conditions); and the level of renewable energy (where ECA's carbon credit provisions for renewable energy generation interact with CERC's RPO and REC framework).

The institutional interface between BEE (responsible for ECA implementation) and CERC/SERCs (responsible for EA 2003 implementation) requires active coordination to ensure that the two legislative frameworks operate in a complementary and consistent manner. Key coordination requirements include: the alignment of the PAT scheme's SEC targets with CERC's normative heat rate parameters for thermal generating stations (to ensure that the two regulatory incentives for thermal plant efficiency improvement are consistent); the integration of the DSM programme framework with the distribution tariff ARR framework (to ensure that DSM costs are properly reflected in the distribution utility's regulated costs); and the development of a consistent framework for the treatment of renewable energy CCCs and RECs (to prevent double counting and to ensure that the carbon market and the RPO compliance market provide complementary rather than conflicting incentives for renewable energy deployment).

6.2 Carbon Border Adjustment Mechanism and India

The European Union's Carbon Border Adjustment Mechanism (CBAM), which imposes an import levy on specified goods (steel, aluminium, cement, fertilisers, electricity, and hydrogen) proportional to their embodied GHG emissions, creates significant indirect incentives for India's energy-intensive industries to reduce their emission intensity. Indian exporters of covered products to the EU market will face CBAM charges from 2026 (when the CBAM's transitional phase ends and full charges begin to apply) unless they can demonstrate that the GHG emissions associated with their production have been priced through a carbon pricing mechanism in India that is at least equivalent to the EU's Emissions Trading System (ETS) price.

India's CCTS, if implemented at a price level comparable to the EU ETS, could potentially qualify as an equivalent carbon pricing mechanism for CBAM purposes, exempting Indian exporters from additional CBAM charges to the extent covered by the Indian carbon price. This creates a strong international trade incentive for India to implement the CCTS rigorously and at a significant price level, supplementing the domestic environmental and energy efficiency objectives of the scheme. The Ministry of Finance and the Ministry of Commerce are engaged with the CBAM implications for India's export industries, and the design of the

CCTS is being informed by the need to establish equivalence with international carbon pricing mechanisms.

6.3 Energy Efficiency and Net Zero 2070

India's commitment to achieving net zero greenhouse gas emissions by 2070 makes energy efficiency a critical component of the long-term climate strategy, complementing the transition from fossil fuels to renewable energy. The energy efficiency improvements achievable through the ECA's programmes — including the PAT scheme, S&L, ECBC, and the emerging CCTS — reduce the total quantity of energy that India's economy needs, proportionally reducing the renewable energy capacity required to achieve a given level of energy security and emission reduction. Every unit of energy saved through efficiency is a unit that does not need to be generated, transmitted, or distributed, reducing the capital investment required for the energy transition and the land required for generation infrastructure.

The BEE has estimated that the existing and planned energy efficiency programmes could contribute annual energy savings of approximately 200 MTOE per year by 2031–32, representing approximately 15 per cent of projected primary energy consumption. Achieving this savings potential requires: strengthening the enforcement of DC obligations under the PAT scheme; expanding the coverage of the S&L programme to additional product categories and tightening the minimum efficiency standards for existing categories; achieving near-universal enforcement of ECBC for new commercial buildings and ENS for large residential buildings; and operationalising the CCTS at a price level that creates effective market incentives for GHG emission reduction across all covered sectors. The regulatory framework of the ECA, strengthened by the 2022 Amendment, provides the legal architecture for this energy efficiency agenda, but its effectiveness depends critically on the administrative capacity and political commitment to implement and enforce the framework consistently across all states and all covered sectors.

6.4 Energy Conservation and Regulatory Innovation

The Energy Conservation Act's regulatory framework is at an inflection point, transitioning from a primarily command-and-control approach (mandatory DC obligations, MEPS, building codes) to a more market-oriented approach (PAT scheme, CCTS, ESCert and CCC trading). This transition requires parallel development of: the institutional capacity to design, implement, and enforce market-based regulatory instruments; the market infrastructure (exchanges, registries, monitoring and verification systems) needed for efficient trading; and the legal framework for the new instruments, including enforcement provisions, dispute resolution mechanisms, and coordination with other regulatory frameworks. The 2022 Amendment provides the statutory foundation for this transition, but the regulatory work required to operationalise the CCTS, integrate the ESCert and CCC markets, and develop the detailed rules for the new instruments is still underway.

> **Booklet V Key Takeaways:** The Energy Conservation Act, 2001, as amended in 2022, provides India’s comprehensive legal framework for energy efficiency regulation and domestic carbon pricing. The Bureau of Energy Efficiency administers the Standards and Labelling programme, PAT scheme, Energy Conservation Building Code, and Carbon Credit Trading Scheme. The CCTS creates India’s first domestic carbon market, with significant implications for electricity sector tariff regulation and for India’s ability to demonstrate carbon price equivalence under the EU’s CBAM. Practitioners advising energy-intensive industries, building developers, equipment manufacturers, and electricity sector entities must understand the ECA framework and its complex interfaces with the Electricity Act, 2003, the environmental regulatory framework, and international trade law.