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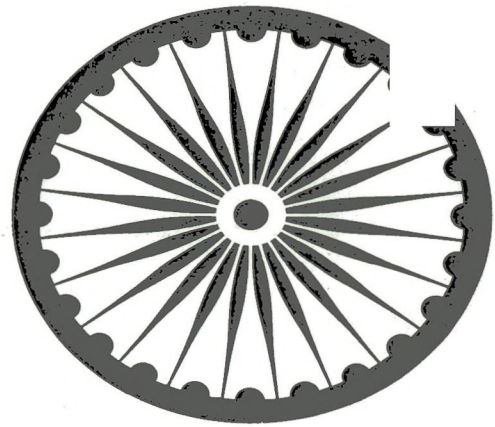


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Ecology, Culture, Ethnicity & Literature:

# CANADA & INDIA




Edited by  
DR. P. SELVAM

Ecology, Culture, Ethnicity & Literature:  
**CANADA & INDIA**

Edited by  
**DR. P. SELVAM**  
(M.A., M.Phil., Ph.D., PGDBA)

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RAJKOT (INDIA)

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## { ENERGY LABELING - AN ALLEGORICAL SYMBOL OF COMMON INTEREST OF INDIANS AND CANADIANS }

*Every citizen of this planet must have an equal share of the planetary atmospheric space. Our people have a right to economic and social development and our vision is to make India's economic development energy-efficient.*

*- Dr. Manmohan Singh.*

### PREAMBLE

Energy-performance improvements in consumer products are an essential element in any portfolio of energy-efficiency policies and climate-change-mitigation programs. Governments should develop balanced programs, both voluntary and regulatory, that removes cost-ineffective, energy-wasting products from the marketplace and stimulates the development of cost-effective, energy-efficient technology. In today's consumer society, the consumables, including household appliances, are bought mainly according to the price and appearance, without much awareness of the impact of the production and use of the product and end - product wastes on the protection of the environment.

Explicit government policies are necessary to achieve cost-effective energy efficiency improvements, which will yield economic and environmental benefits. Energy efficiency improvements can slow the growth in energy consumption, save consumers and countries money and reduce environmental impacts.

Energy is becoming an urgent global policy concern. Experts agree that meeting future energy needs boils down to only two options: increasing supply or decreasing the demand for energy, and the latter implies demand-side management. The issue is also particularly salient due to the problems of climate change, air pollution, and energy security. Energy cost reduction is an important benchmark for economic success.

Whatever kind of fuel people use, whether they burn it directly or indirectly —, buying electricity generated from fossil fuels (coal, oil or gas), people are releasing Carbon dioxide (CO<sub>2</sub>) into the atmosphere. CO<sub>2</sub> is one of the main gases that contribute to global warming, which is now scientifically recognized as a real threat to today's climate. Developed countries bear the major share of historical responsibility for the accumulation of GHGs in the atmosphere, and they still account for 40 percent of global emissions. The economic rise of India is taking place at a time where crucial technological and organizational innovations are expected to materialize. These could help to overcome the energy crisis that is likely to result from dwindling reserves of fossil fuels. The earlier, India starts the search for low-carbon development trajectories, the better not only for global climate but also for her long-term energy security and her economic competitiveness. The international climate regime offers few incentives likely to lure India onto a low-carbon development path. India has ratified the United Nations Framework Convention on Climate Change (UNFCCC), which requires her to implement measures to mitigate climate change. India was the third largest emitter of greenhouse gases by year-end September 25th 2008.

The per capita carbon emission in India is approximately one tonne. Although much lower than developed countries, India's large population size could contribute to a larger volume of emissions globally. It is important to estimate the carbon emissions and develop appropriate mitigation measures to reduce further emissions.

#### ENERGY DEMAND AND SUPPLY SCENARIO IN INDIA AND CANADA

Energy use in the residential sector also grows together with population growth and continues to be determined by demographic and lifestyle trends. The Government is pursuing a policy aimed at expanding people's access to energy, and at the same time, contributing towards international efforts to counter climate change. India currently has a peak demand shortage of around 14% and an energy deficit of 8.4%.

Generation performance during the year 2007-08 is targeted at 710 BU that is growth of 7.0 % over generated target of 663 Bu for the previous year. According to Power Generation in India, in 2007 the installed power generation capacity of India stood at 138,252 MW, while the per capita power consumption stood at 612 Kwh. According to Energy Information Administration - India, the country's annual power production increased from about 190 billion Kwh in 1986 to more than 680 billion Kwh in 2006. The Indian government has set an ambitious target to add approximately 78,000 MW of installed generation capacity by 2012.

India is poorly placed in energy resources. Though 16 per cent of world

populations live in India, only 0.6% of world oil, 0.6% of natural gas and 6% of coal are in India. About 70 per cent of electricity is produced by coal power plants. At the present rate of production it is expected that coal may last for the next 23 years. Proven oil reserves of India are 765 MT for the next 24 years and hydro power potential estimated to be 84 GW at 60 % load factor is only 25 per cent tapped so far. India's energy status is not very promising. At present the country consumes about 100 MT of coal and 32.5 MT of oil annually. According to official estimates the proven Indian reserves of coal are about 40 BT but recoverable reserve is only half of that amount. This is less than the projected demand of 23 BT of coal till the year 2020. The projected demand for hydel power by 2020 is 12 times more than the present installed capacity of nearly 15,000 Mw. The total demand for electricity in India is expected to cross 950,000 MW by 2030. India's oil and gas resources are also not very promising: only 400 MT compared to world oil reserve of 750,000 MT, India's gas reserve is only 100 million cubic metres, as against the world's gas reserves of 63,000 units' meters. It is evident that all energy reserves based on fossil fuel have limited availability and will soon get exhausted.

**United States and Canada are the largest consumers of energy in the world, consuming almost 200 gigajoules per capita-the equivalent of each Canadian and U.S. resident using 5,000 litres (32 barrels) of crude oil per year, or approximately twice the per capita energy consumed in other OECD countries.** In non-OECD countries, energy consumption per capita is, on an average, 23% of that consumed in the OECD countries. From 2004 to 2008, energy consumption remained relatively stable in Canada, with transportation showing the largest increases, 5.7%. The energy sector accounted for 7% of gross domestic product (GDP) in 2008 and directly employed 363,000 people, or 2% of the labour force. High energy prices early in 2008 fuelled Canada's export revenues.

India currently ranks sixth in the world in terms of primary energy demand. In order to achieve its goal of 8 - 10% of GDP growth per annum through 2030, its primary energy supply, at a conservative estimate, will need to grow by 3 to 4 times and electricity supply by 5 to 7 times. Electricity shortages amounted to 8.0% of energy demand, and power shortages to 11.6% of peak demand between April, 2005 and January, 2006. Its power generation should increase to 780,000 MW from a current level of 120,000 MW and annual coal demand would be in excess of 2000 MT from a current level of 350 MT. CO<sub>2</sub> emissions have been computed using the past energy consumption data.

India uses much less commercial energy than industrialized countries; estimates predict a fourfold increase, compared to the early 1990s, in commercial energy consumption in India by 2025. To improve our energy future, India needs to take steps to increase energy supplies sustainably

and reduce energy demand through efficient use. At the national level, there is need to recognize that while India's per capita consumption of energy is low, energy efficiencies are also low. More energy-efficient technology advanced fuel system with near zero emission need to be promoted. Promoting clean technology and reducing demand are likely to also minimize local pollution and even reduce carbon emissions. Minimizing demand for energy globally through conservation and efficiency is the most cost effective means of reducing operational and environmental costs for all individuals. So, practicing the following can be effective options.

- Conserving energy, (like insulating/weather stripping the home)
- Purchasing Energy Star certified (high efficiency) appliances
- Minimizing the energy one needs
- Selecting the cleanest, greenest supplies.
- Burning lesser fossil fuels

#### **GENESIS OF ENERGY LABELING IN INDIA AND CANADA**

Within the broad area of the changes required in the energy systems of both developing and developed countries (India and Canada), UNF has chosen two specific programmatic areas which would have a highly leveraged impact on the future development patterns of the developing world: **energy-efficiency labeling** and standards, and community-based rural electrification using sustainable energy technologies. Thus the issue of environmental protection has brought the consumers, the industry, and the government to a common platform where each has to play its own role.

Recently, a number of countries have initiated programs of voluntary endorsement labeling for energy-efficient products. Introduced in 1992 to recognize energy-efficient computers, the ENERGY STAR endorsement labeling program has grown to identify efficient products in more than 40 categories including household appliances, home electronics (televisions, audio systems, etc.), computers and other office equipment, residential heating and cooling equipment, and lighting.

In the more rapidly industrializing economies of the region it has been observed that the increasing popularity of life in smaller independent households has had a profound impact on energy consumption. Like in other sectors, in which today's investment decisions are determining the future energy needs, the future energy needs and consumption patterns of the urban households are being determined by the numbers and the efficiency of the various electrical and other home and office appliances manufactured and marketed today. Energy using technologies may be categorized into two types in which the first

category receives greater attention as these technologies are mass produced., for instance, lamps, refrigerators, motors, air conditioners, transformers, drives, etc.

Standards and labeling (S&L) program has been identified as one of the key activities for energy efficiency improvements. The S&L program ensures that only energy efficient equipment and appliance would be made available to the consumers. Initially the equipment to be covered under S&L program was household refrigerators, air-conditioners, electric motors, pump sets, electric lamps & fixtures; by using the most widely used signaling devices that indicate that an appliance or a product has achieved some minimum acceptable level of environmental quality.

Reducing electricity consumption decreases carbon emissions from fossil-fuel power plants and Energy-efficiency labels and standards can help a country meet climate-change goals. Participation of Indian and Canadian manufacturers in the program has also enabled them to compete effectively in the global market. The potential benefit of the scheme is substantial, as it could spur consumers to select more energy efficient products, which in turn would reduce the respective national electricity usage. Ratings compel the manufacturers to manufacture more energy efficient products and appliances. ~~Through this provision,~~ the energy efficiency improvement issues in the domestic and agricultural sectors could also be addressed. Efforts to boost India's energy efficiency today will go a long way in reducing climate change tomorrow. Achieving better efficiency must involve a diverse range of stakeholders from the private sector, civil society to Government, and the international community. Therefore, UNDP works with a broad range of stakeholders: partnering with civil society to conduct "green rating" of industries, working with the private sector to improve technology and practices, and supporting the Government and manufacturers to apply "energy rating" labeling.

Canada was one of the first countries in the world to adopt a labeling program for appliances. To ensure that consumers received fair and objective information on the energy consumption of appliances, test standards were developed to establish a level playing field for all manufacturers and to ensure that energy efficiency claims were factual and comparable.

Energy labeling is generally linked with the performance and safety parameters as prescribed in the national standards. Products qualified for the energy labeling are first supposed to meet these requirements, thus linking energy efficiency and high-quality performance.

## INITIATING ENERGY LABELING AND STAR RATING OF APPLIANCES

EnerGuide program, in Canada was first introduced in 1978 as part of the Consumer Packaging and Labeling Act. Regulations required that manufacturers of major electrical household appliances to be sold in Canada must test these appliances for energy consumption, show the monthly energy consumption of each model on a standardized, round EnerGuide label.

In 1992, Parliament passed the Energy Efficiency Act as a key element of Canada's national environmental action plan. Under the Act, minimum energy efficiency standards were established for some types of energy-consuming products, including appliances imported to Canada or traded between provinces/territories

In the Indian context, the country has two national agencies working towards tackling these issues: The BIS (Bureau of Indian Standards) and BEE (Bureau of Energy Efficiency). BIS initiated in 1956 had already brought out the eco labeling scheme for products. India has legislation in the form of THE ENERGY CONSERVATION ACT 2001 to provide for efficient use of energy and its conservation and matters incidental to it. Under the provisions of the Act, Bureau of Energy Efficiency (BEE) has been established with effect from 1st March 2002 by merging erstwhile **Energy Management Centre of Ministry of Power**. The Bureau is **responsible for implementation of policy program and implementation of energy conservation activities**.

Energy labeling program is being introduced for the first time in the Indian market. The Indian Bureau of Energy Efficiency's long-planned labeling program was initially launched on voluntary basis for two appliances, namely, Frost Free Refrigerators and Tubular Fluorescent lamps. Subsequently, more appliances have been included in a phased manner and the scheme made mandatory. The ratings grade models on their energy efficiency, starting from one star, implying low energy efficiency, to a five star grade for the most energy efficient model. Energy labels are announced to become mandatory for many electricity-consuming appliances in 2007, including pumps, motors, air conditioners and televisions. The Energy Label would provide consumers with the information that they need, to compare different models of appliances before deciding on the purchase. Consumers who share concern for the energy and environment can then exercise their choice in making the purchase.

In Canada, the current rectangular label for appliances and room air conditioners was introduced in 1995. It provides the estimated annual energy consumption rating for each appliance. Starting in 1984, Natural Resources Canada has calculated the average annual energy

consumption of major electrical appliances. Since that time, refrigerators, refrigerator-freezers, freezers, dishwashers, clothes washers and clothes dryers have all shown dramatic drops in annual energy consumption, say reports. EnerGuide is the official Government of Canada mark associated with the labeling and rating of the energy consumption or energy efficiency of not only household appliances and room air conditioners, but also heating and ventilation equipment - such as oil, gas and propane furnaces, air sourced heat pumps, central air conditioners and gas fireplaces - as well as houses and vehicles.

India has been cooperating with other countries in the region to support and harmonize energy efficiency standards and labeling for equipment and appliances. She would continue to support this initiative for increasing trade and improving regional energy security too. It is obvious that the success of energy labeling program depends on active consumer participation and an understanding of the terms.

- **Energy Efficiency:** Physicist Amory Lovins, popularized the notion of a "soft path" on energy, with a strong focus on energy efficiency. Among other things, Lovins popularized the notion of negawatts -- the idea of meeting energy needs by increasing efficiency instead of increasing energy production. Energy conservation is achieved when growth of energy consumption is reduced, measured in physical terms. Whereas energy efficiency is achieved when **energy intensity in a specific product, process or area of production is reduced without affecting output,** consumption or comfort levels. Through energy efficiency, energy imports will be reduced, which helps in conserving limited resources and lead to improved energy security. Opportunities like this can be found in all sectors of the economy: industrial, transportation and residential.

- **Efficient Energy Use:** sometimes simply called energy efficiency, is using less energy to provide the same level of energy service, say, energy use is achieved primarily by means of a more efficient technology or process rather than by changes in individual behavior, is increased when an energy conversion device, such as a household appliance, automobile engine, or steam turbine, undergoes a technical change that enables it to provide the same service (lighting, heating, motor drive) while using

### Benefits of Energy Efficiency

**Industry:** Reduced energy bills, increased competitiveness, increased productivity, improved quality, increased profits

**Nation:** Reduced energy imports, avoided costs can be used for poverty reduction, conservation of limited resources, improved energy security

less energy. Thus, energy efficiency involves all aspects of energy production, distribution, and end-use.

- *Eco labeling and Star Rating of Appliances:* The effect of well-designed energy efficiency labels and standards is to reduce unnecessary electricity and fuel consumption by household and office equipment, e.g., refrigerators, air conditioners, and electronic equipment. Reducing electricity use reduces fuel combustion in electric power plants. Cost-effective reduction in overall fuel combustion has several beneficial consequences. Introduction of progressive efficiency criteria first in consumer information programs (including appliance labeling categories) and then in voluntary rating and recognition programs such as ENERGY STAR is already under way and is welcome among consumer.

- *Eco-Design* is a system approach to the design of a product encompassing not only economic, functional, and esthetic aspect but protection of health (human, animal and floral), environment, and society during the whole life-cycle of the product. The green certifications, otherwise known as eco-labels, do verify that a product meets specific standards. They offer a third-party validation, a way to determine a product's green qualifications. Because any green certification or label ~~is voluntary, green product~~ certifications are showcases for ~~manufacturers genuinely interested~~ in being taken seriously by facility executives who want to purchase products with verified green.

- *Energy-Efficiency Standards* are procedures and regulations that prescribe the energy performance of manufactured products, sometimes prohibiting the sale of products that are less energy efficient than the minimum standard, often called Minimum Energy Performance Standards (MEPS), also called just "Standards" or "efficiency standards" in some countries. They are the specified minimum energy efficiency levels products must meet before they can be legally sold. These mandatory standards are set at levels that balance the technical possibility with economic viability and competitive forces within a particular market. MEPS are usually not static but are revised over time to reflect improving levels of energy efficiency. MEPS rely on test procedures or "Test Standards", which are used to determine appliance performance, energy consumption and hence energy efficiency.

- *Energy-efficiency Labels* are informative labels affixed to manufactured products to describe the product's energy performance (usually in the form of energy use, efficiency, or energy cost). These labels give consumers the data necessary to make informed purchases. There are two types of labels: endorsement labels and comparative labels. Conceptually, energy-efficiency labels and standards can be applied to any product that

consumes energy, directly or indirectly, as it provides its services. The national benefits of labels and standards applied to the most prevalent and energy-intensive appliances, such as household refrigerators, air conditioners, water heaters and electronic equipment, are, initially, generally substantially higher than the cost of implementing the labels and standards programs and producing the efficient products.

- *Eco-Label* must provide proof that their products or services meet the ecological criteria technical standards linked with environmental protection requirements - that are the result of scientific studies. Some cover the entire manufacturing processes (life cycle analysis/integrated product policy) and others some aspect such as the origin of raw materials. The objective of eco labeling is to provide an incentive for manufacturers and importers to reduce adverse environmental impact of products, to reward genuine initiatives by companies to reduce adverse environmental impact of their products, to assist consumers to become environmentally responsible in their daily lives by providing information to take account of environmental factors in their purchase decisions and to encourage citizens to purchase products which have less harmful environmental impacts. Ultimately it aims to improve the quality of the environment and to encourage sustainable management of resources.

*An energy (consumption) labeling programme for appliances was launched in 2006, by BEE and comparative Star based labeling has been introduced for fluorescent tube lights, air conditioners, and refrigerators. The labels provide information, about the energy consumption of an appliance catering to intelligent decision making. Almost all fluorescent tube lights sold in India, and about two thirds of the refrigerators and air conditioners, are now covered by the labeling program. Similarly BIS had also introduced ISI labeling and eco labeling for some household products. The pioneering institutions striving for the stated cause are BIS and BEE.*

Bureau of Indian Standards (BIS): The Indian Standards Institution (ISI) was, therefore, set up in 1947. However, in 1986 the government recognized the need for strengthening this National Standards Body due to fast changing socio-economic scenario and according it a statutory status. Thus came the Bureau of Indian Standards Act (BIS) 1986 and on 1 April 1987, newly formed BIS took over.

#### STANDARDISATION AND CERTIFICATION

The Bureau of Indian Standards (BIS) resolves to be the leader in all matters concerning Standardization, Certification and Quality. It specifies standard specification as given below:

IS: 15687 (Part 1): 2006 - Single Capped Fluorescent Lamps

IS: 15750 (06) - Household Frost-free Refrigerating appliances (Refrigerators cooled by internal forced air circulation).

The standard prescribes requirements which are in line with ISO 15502: 2005.

All products manufactured shall meet the requirements of following Indian Standards of BIS pertaining to quality, safety and performance		
1.	Tubular Fluorescent Lamps	IS 2418(Pt-1):1977
2.	Ceiling fans including regulators	IS 374:1979
3.	Refrigerators	IS 1476:1979
4.	Colour Televisions	IS 10662:1992
5.	Black & White Televisions	IS 4547:1992

***Bureau of Energy Efficiency (BEE):***

BEE was set up in March 2002 under the provision of Energy Conservation Act of 2001 to provide legal framework for the Government's energy efficiency initiatives in the country. The Bureau's mission is to develop policies and strategies with a thrust on self **regulation and market principles with the primary objective of reducing energy intensity of the Indian economy.**

Appliance efficiency standards save far more than could be saved by any other efficiency policy at low costs to consumers and society. Energy labels are also a critical element of an energy efficiency policy strategy as they provide the otherwise missing information on equipment energy use that is needed to allow demand and supply side options to compete in a level marketplace. The Bureau of Energy Efficiency, Ministry of Power has developed a scheme for energy efficiency labeling of equipment.

Ministry of power and BEE in India are committed to bring change in the manner consumers and manufacturers view appliances and equipment. Ratings will compel the manufacturers to manufacture more energy efficient products and appliances. This provision addresses the energy efficiency improvement issues in the domestic and agricultural sectors.

BEE has already launched energy labeling for refrigerators, tubular fluorescent lamps and air conditioners. The schedule of products to be targeted next include: compact fluorescent lamps, general purpose electric motors, ceiling fans, ballasts for fluorescent lamps to be followed by geysers, gas stoves, etc. The Government is also a big consumer of energy and purchases the energy consuming equipments and appliances in large numbers. Ministry of Power has recommended the Central and

State Government agencies to include a minimum level energy label ratings, say 3 or 4 Stars, in their purchase specifications for those products for which energy labeling scheme has been introduced.

Table 1: Household Appliances and Energy Labeling

APPLIANCES	TYPE OF LABELING COMMISSIONED
Air Conditioner	Energy consumption, Star Rating & Energy Efficiency Ratio (EER) - BEE
Refrigerator	Energy consumption and Star Rating - BEE
Fluorescent Lights	Energy consumption and Star Rating - BEE
Ceiling fans	Energy consumption - BEE
Gas Stoves	Thermal efficiency of stoves and gas consumption (Green label) - BIS
Televisions	Sound watts and Energy consumption - yet to be implemented
Pumps	Energy consumption - yet to be implemented

Minimum Efficiency Performance Standards have been prescribed by BEE and the appliances are rated on the basis of energy efficiency indicated by suitable number of stars on the name plate label. The number of stars can vary from 1 to 5. Higher stars indicate higher energy efficiency and more energy bill savings for the customer's products. Energy Efficiency Ratio, EER, the cooling capacity versus the power consumed was mainly considered for air-conditioners.

Table 2: Brands Testified for Energy Efficiency

APPLIANCES	BRANDS TESTIFIED	TOTAL
Air conditioners	Samsung, LG, Onida, Godrej, Voltas	5
Refrigerators	Samsung, LG, Godrej, Videocon, Whirlpool	5
Fluorescent Lights	Philips, Crompton Greaves, Havells	4
Ceiling fans	Crompton Greaves, Havells, Orient, Bajaj, Khaitan, Usha	6
Gas Stoves	Prestige, Butterfly	2

#### CANADIAN ENERGY STAR

Natural Resources Canada's (NRCan's) Office of Energy Efficiency (OEE) promotes the international ENERGY STAR symbol in Canada and monitors its use. Major manufacturers and retailers of energy-efficient

products, utilities, energy retailers, and interest groups from Australia to Europe recognized the benefits of ENERGY STAR to consumers and have joined in promoting the symbol.

ENERGY STAR is the international symbol of premium energy efficiency. Products that display the ENERGY STAR symbol have been tested according to prescribed procedures and have been found to meet or exceed higher energy efficiency levels without compromising performance.



NRCan's OEE administer ENERGY STAR in Canada. In addition to enrolling participants in the program (if they are not already enrolled in the United States), the OEE promotes and monitors the use of the ENERGY STAR symbol across Canada



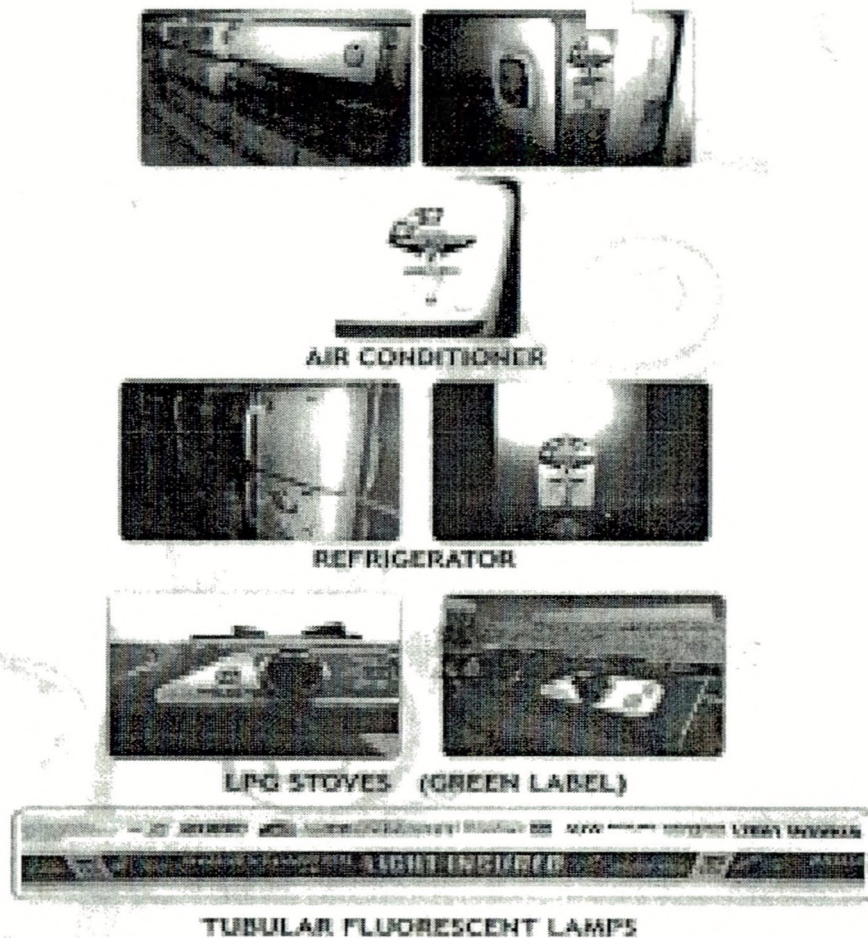


Plate.1. Energy labels of Canada

*Energy Efficiency Labels on Appliances in India*

Canadian institutions have gone a step further and have brought out a power adapter too that can identify even the type of adapter, a energy star qualified product again, for plugging in the appliances.

New power adapter symbol that identifies products using an ENERGY STAR qualified adapter

These ENERGY STAR symbol already appears on many products sold in Canada, including major household appliances, consumer electronics,

computers and other types of office equipment and heating and cooling systems. Many Canadian consumers are familiar with the ENERGY STAR symbol, having seen it on numerous products, their packaging, in product literature and advertising. To enrol as an ENERGY STAR Participant, companies must demonstrate that at least one of their products meet ENERGY STAR's strict technical specifications. In Canada there are many products that have the Energy Star Label.



#### ENERGY STAR QUALIFIED PRODUCT CATEGORIES

In Canada, ENERGY STAR includes the following product categories (others will be added over time):

**Major Appliances:** Refrigerators, freezers, dishwashers, clothes washers, water coolers, dehumidifiers

**Residential heating and cooling equipment:** Gas, propane or oil furnaces, oil or gas boilers, air-source heat pumps, ground-source heat pumps, central air-conditioners, room air conditioners, ventilating fans, ceiling fans.

**Office Equipment:** Computers (desktop), laptops, displays (monitors), external power supplies, end-use products with an ENERGY STAR qualified adapter, imaging equipment (digital duplicators, fax machines, copiers, scanners, mailing machines, multi-function devices, printers, and all-in-ones), computer servers.

**Consumer Electronics:** Televisions, audio and video equipment, digital-to-analog converter boxes, external power supplies, and end-use products with an ENERGY STAR qualified adapter, set-top boxes, cable, satellite and Internet Protocol television service providers and telephony (answering machines, cordless telephones).

**Lighting products:** Residential light fixtures, compact fluorescent lamps, decorative light strings

**Commercial products:** Commercial cooking equipment, commercial dishwashers, commercial solid door refrigerators and freezers;

**Windows and doors:** Windows, sliding glass doors, skylights and entry

doors, sidelights and transoms

*New homes: ENERGY STAR for New Homes*

Electricity is playing an increasingly important role in one's personal lives and in the economy that feeds him. It is the most widely available energy source and the only one able to run a full range of household appliances. But it is the most greenhouse intensive. Nevertheless, the common interest of Indians and Canadians through energy labeling is trying to tackle the issue on positive lines.

In India, on an average, there is an annual saving of about Rs.2800/- in the use of a 5 star refrigerator versus a 1 star refrigerator and about Rs. 3500/- saving in the use of 5 star Air conditioner versus a 1 star air conditioner. That means savings to individual consumers of about 700 units (kWh) of electricity use on most efficient refrigerators and 750 units (kWh) on use of most efficient air conditioners. Since refrigerators and air conditioners constitute more than 50% of the domestic electricity consumption, can significantly bring down India's national electricity consumption and energy crisis. All the products with ENERGY STAR in Canada have been declared to consume less energy (50%) and to record energy efficiency to the tune of 20-50% and to have exceeded the prescribed Canadian energy efficiency standards.

Because the global demand puts more weightage on electricity service, avoidance of increased damage to the environment by using electricity efficiently and obtaining electricity from the cleanest sources available must be practiced. To curtail these ill effects it is necessary to practice "energy conservation". It has been proved now, that both the countries are at it in full vigour. Instead of talking about the issue as of national / global significance, it has to be viewed as an individual's concern. For this,

**Let Modern Society Pledge to Be**

**ENERGY EFFICIENT POWER HOUSES FOR ENERGY  
CONSERVATION.**

## REFERENCES

Indian Planning Commission, 2005, Report of the working group on Energy Policy, Government of India, New Delhi.

Nigel.S,(1999). Energy Management, Commonwealth Publishers in association with Indian Journal of Ecology and Environment, New Delhi, Pp 1, 5-8

Rao.S, (2004), Energy technology, Khanna Publishers, Delhi, Pp. 25-37

Datye1997, Livestock and Environment Conservation, Yojana,37 (22), P.9.

Richerzhagan,M and Scolz,2006, Energy for Economic Development, Yojana,33 (17), Pp. 7-9.

Sudhakar,2001, Electricity Consumption Pattern In Urban Area, Assam Journal of NEC, Vol.16, No.3 and 4, P.42

### Websites

<http://www.choice.com.an>

[http://www1.eere.energy.gov/industry/techmology/commercial\\_successes.html](http://www1.eere.energy.gov/industry/techmology/commercial_successes.html)

[www.an-inconvenient-truth.com](http://www.an-inconvenient-truth.com)

[www.bee-nic.in](http://www.bee-nic.in)

[www.carbonfund.org](http://www.carbonfund.org)

[www.clasponline.org](http://www.clasponline.org)

[www.consumervoice.com](http://www.consumervoice.com)

[www.direct.gov.uk](http://www.direct.gov.uk)

[www.ela.doc.gov](http://www.ela.doc.gov)

[www.environmentallysound.com](http://www.environmentallysound.com)

[www.eren.doc.gov](http://www.eren.doc.gov)

[www.wikipedia.com.2008](http://www.wikipedia.com.2008)

[www.wikipedia.com](http://www.wikipedia.com)