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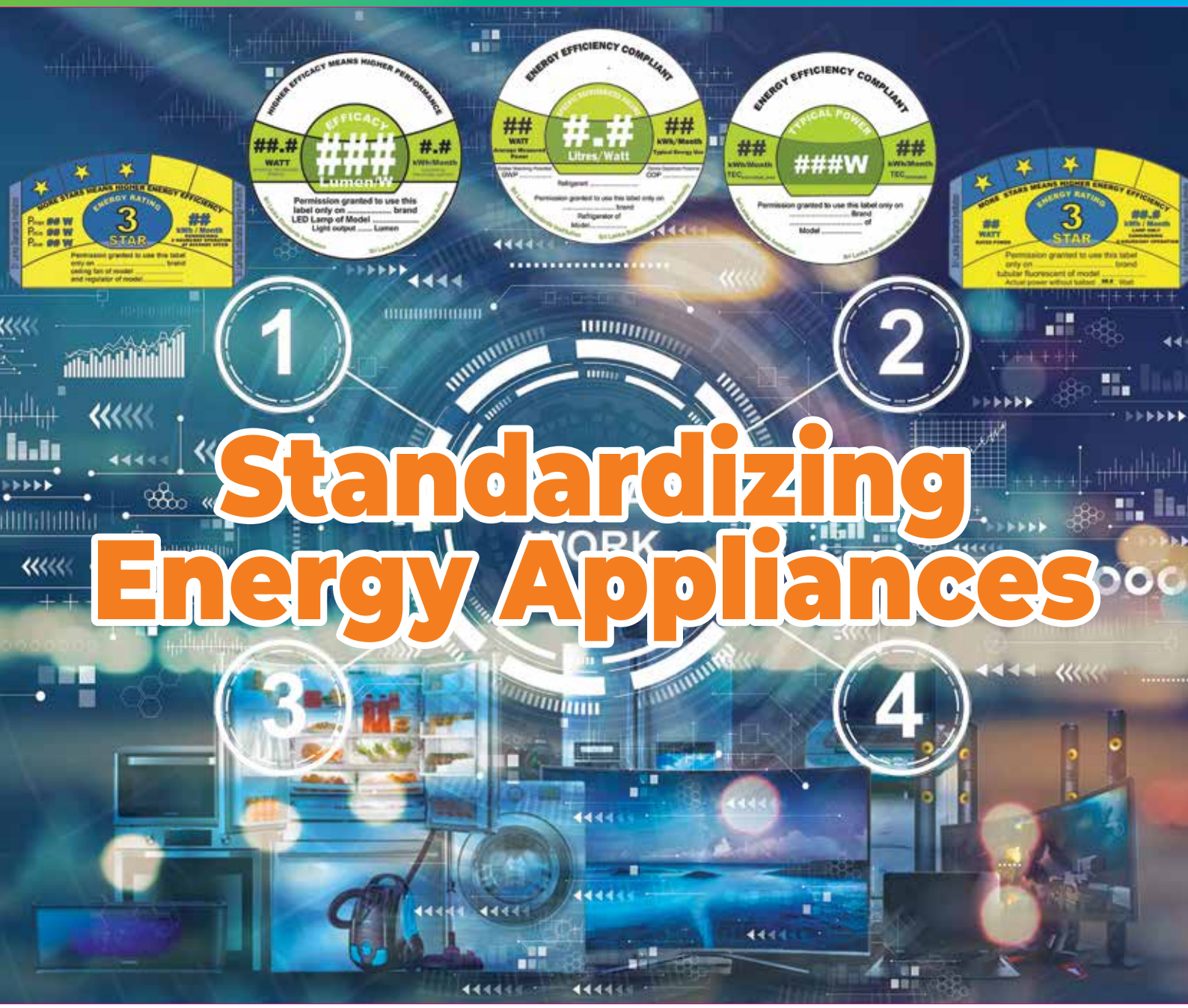
Sanraksha

Quarterly Newsletter

Sri Lanka
Sustainable Energy Authority

March 2026 - 19th Volume - First Edition - ISSN 2021 9521



Standardizing Energy Appliances

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Sanraksha
Quarterly Newsletter

Sri Lanka Sustainable Energy Authority

Guidance

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இலங்கை நிலைபெறுதகு சக்தி அதிகாரசபை
Sri Lanka Sustainable Energy Authority

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Content Summary

Editorial

Energy Appliance Labelling

The global energy crisis, driven by the ongoing war in the Middle East, has heavily impacted economies worldwide. This has severely strained our country, which was already struggling to recover from the economic downturn triggered by the COVID-19 pandemic.

For any nation dependent on imported fossil fuels to meet its power requirements, there are two primary options available to navigate an energy crisis. The first one is encouraging the general population to practice maximum energy conservation and the second is directing national efforts toward producing domestic renewable energy.

Amid the current global crisis, focusing on energy conservation stands out as the faster, more practical, and highly effective immediate measure. To steer a nation's populace toward conservation, two steps can be taken, that is educating the general public on energy-saving habits and creating opportunities for them to purchase and use energy-efficient appliances.

To help Sri Lankan consumers identify the efficiency levels of electrical appliances, the Sri Lanka Sustainable Energy Authority (SLSEA), in collaboration with the Sri Lanka Standards Institution (SLSI), introduced the Energy Performance Labelling system. This framework has already been implemented for Compact Fluorescent Lamps (CFL), Ceiling fans, LED lamps, and refrigerators. Initiatives are currently underway to roll out these labels for water pumps, electric motors, air conditioners, LED modules and electric rice cookers.

Consequently, when purchasing Compact Fluorescent Lamps (CFL), Ceiling fans, LED lamps, and refrigerators, you should check for the presence of the locally introduced energy performance label. When buying other items, verifying whether they carry the energy performance labels of their respective manufacturing countries will significantly support your energy conservation efforts.

The Beginning of Electrical Appliance

Labelling in Sri Lanka

Using energy economically is both a civic duty and a shared responsibility. History has shown us time and again how critical it is to consume power prudently. Today, we are facing a similar situation, driven largely by geopolitical conflicts such as the Iran–United States war. As a result, the conversation surrounding energy conservation has taken center stage globally.

Eliminating wastage in power consumption directly reinforces a nation's Energy Security. In this endeavor, cultivating energy-efficient habits is vital, and introducing energy-efficient appliances serves as a corner-stone strategy for conservation. Sri Lanka has already deployed mechanisms to promote energy efficient electrical appliances, notably through the appliance labelling programme.

Displaying these labels equips consumers with the knowledge required to make informed purchasing choices. It allows them to analyze, contrast, and confidently pick the best product within a specific appliance class. Furthermore, this system discourages poor-quality products while paving the way for a fair market environment for high-efficiency items.

Because the labelling procedure identifies a Minimum Energy Performance standard, legal provisions are now in place to ban local manufacturing or foreign imports that fall short of the minimum energy performance benchmark. Consequently, displaying the energy efficiency labels has been made mandatory.

As the initial phase of this initiative, energy labelling was successfully launched for Compact Fluorescent Lamps (CFLs). This allowed local buyers to explicitly identify and choose energy-saving lighting, marking a historic milestone in Sri Lanka's broader energy conservation roadmap.

At that time, efficient CFL bulbs were identified via a star-rated label printed on their packaging. A higher number of stars on the label indicated higher energy efficiency. From those initial steps, the programme has been enhanced in stages across multiple phases, resulting in the successful rollout of labels across various types of electrical appliances.

This national initiative is driven forward under the leadership of the Sri Lanka Standards Institution (SLSI) and the Sri Lanka Sustainable Energy Authority (SLSEA).

By Chanaka De Silva & Prabhashini Iddamalgoda

Electric Bulb Labelling

When examining the origin and evolution of electrical appliance labelling in Sri Lanka, the scheme for CFL bulbs holds a uniquely significant place. It is highly important to review exactly how the foundation for CFL bulb labelling was established.

Rising Electricity Demand

Our country's power consumption is divided into three primary sectors: Domestic, Industrial, and Commercial. Nearly 38% of Sri Lanka's total electricity supply is consumed for household activities. Furthermore, peak daily consumption takes place between 6:30 PM and 9:30 PM.

Data reveals that during this specific high-demand window, industrial consumption actually drops, while the surge in demand is predominantly caused by widespread domestic lighting. Naturally, as consumption climbs, power generation must be increased to match it. Energy experts point out that during these peak load hours, the country is often forced to activate high-cost diesel power plants to sustain the grid.

The Arrival of CFL Bulbs

The Sri Lankan public was first introduced to CFL bulbs roughly three decades ago. Many will remember that, back then, household illumination depended almost entirely on traditional incandescent filament lamps. CFL bulbs offered a major technological leap, providing roughly 75% higher energy efficiency compared to incandescent alternatives.

Recognizing this potential, bodies like the then-existing Energy Conservation Fund and the Ceylon Electricity Board (CEB) launched diverse promotional campaigns. As a result, the adoption of CFL lighting grew rapidly across the island. However, this popularity triggered an influx of various commercial brands into the local market. Buyers quickly found it difficult to distinguish which specific models were genuinely efficient and built to standard.

To resolve this issue, the Sri Lanka Standards Institution (SLSI) and the Sri Lanka Sustainable Energy Authority (SLSEA) collaborated to design and release a dedicated efficiency label for CFL lighting.

Labelling

It is helpful to analyze the structural design of the label applied to CFL bulbs at the time, as it offers a fundamental understanding of how electrical appliances and components are rated.

It is equally important to look at what the stars on the CFL packaging signified. In essence, the stars provided a visual tool for comparing the efficiency across different product models. A one-star CFL bulb indicated that the product met a satisfactory benchmark of energy efficiency and was certified as suitable for consumer use. A two-star rating meant the bulb was more efficient than a one-star model.

Thus, consumers were encouraged to look for packages displaying at least one star. If a consumer selected a five-star rated CFL bulb, it meant they were purchasing a product engineered to the highest possible standard of energy efficiency available on the market.

The number of stars allocated to a manufacturer's model was evaluated based on several criteria. The paramount consideration was energy efficiency, measured as luminous efficacy. Beyond that, the power factor was evaluated. The color tone of the lamp, whether it emitted a warm yellow or cool white light was also noted. Nevertheless, energy efficiency remained the decisive factor in calculating the final star rating.

The Legal Framework behind Star Ratings

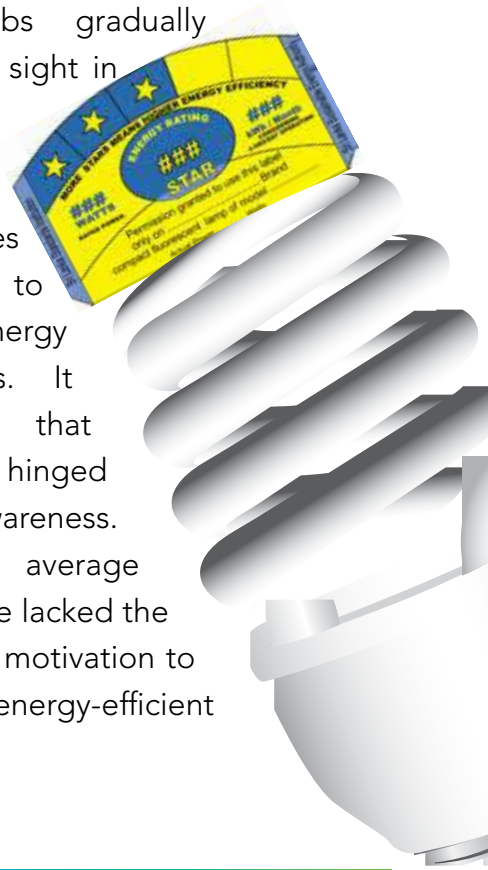
Discussions surrounding the standardization of CFL efficiency began around the year 2002. The technical standards were drafted collectively by the Sri Lanka Standards Institution (SLSI), the Energy Conservation Fund (the predecessor to today's SLSEA), and the Ceylon Electricity Board (CEB).

The mechanism for issuing star labels followed an objective protocol. In 2007, random samples of CFL bulbs were collected directly from commercial retail stores and subjected to laboratory testing to log performance data. By comparing the efficiency levels of the bulbs found in the market, baseline performance metrics (Benchmarks) were systematically established.

Over time, relevant regulatory authorities took continuous steps to upgrade these benchmarks to drive up product quality. It was mutually agreed that as benchmarks evolved, the star ratings previously assigned to specific products could change.

Initially, manufacturers and importers were given the option to participate in the CFL labelling programme on a voluntary basis. Many progressive companies actively sought out certification. If their bulbs successfully met the testing criteria, they were officially awarded the energy efficiency label.

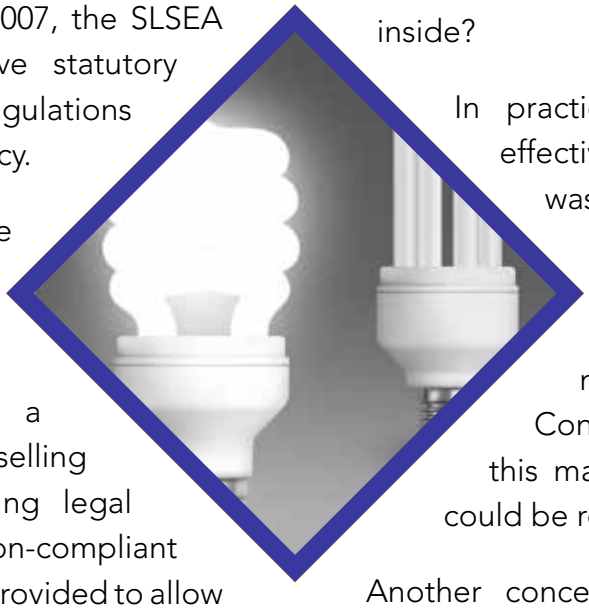
However, a segment of manufacturers and importers chose not to pursue the label initially. Educational programmes were conducted during this period to emphasize the importance of supplying labeled products. Consequently, labeled CFL bulbs gradually became a common sight in retail markets.



Yet, relying solely on supply-side changes was not enough to achieve national energy conservation goals. It became evident that long-term success hinged on consumer awareness. Unfortunately, the average consumer at the time lacked the necessary insight or motivation to specifically look for energy-efficient CFL alternatives.

Educating the General Public

The legislative foundation required to educate, guide, and incentivize the general public to select high-efficiency lighting was established after 2007. In that year, the Energy Conservation Fund was structurally transformed into the Sri Lanka Sustainable Energy Authority (SLSEA). Under its founding Act of 2007, the SLSEA was granted comprehensive statutory powers to enforce strict regulations on appliance energy efficiency.



Following a gazette notification published in July 2009, the SLSEA obtained the authority to make efficiency labels a mandatory requirement for selling CFL bulbs. Before launching legal enforcement against non-compliant entities, a grace period was provided to allow vendors to secure the required certifications.

Full legal enforcement against unlabeled CFL bulbs officially commenced in January 2010. This regulatory shift successfully stabilized the market, ensuring that certified labels became a permanent feature on retail shelves.

Tightening Enforcement

Regulatory checks were also extended to imported lighting. Customs entry points made it mandatory for foreign CFL shipments to comply with these national standards before gaining clearance. Simultaneously, domestic factories were required to secure labels for their products. The regulations dictated that any producer or importer had to achieve at least a one-star rating for their model.

Products failing to secure at least one star were legally barred from the commercial market. The framework allowed authorities to obtain court orders to either destroy sub-standard shipments or deport them back to their country of origin. Furthermore, penal clauses were introduced to punish violators.

Since the star label was printed on the external cardboard box or packaging, a common concern arose: could unscrupulous actors print a high-star label on a box but place a low-quality bulb inside?

In practice, such malpractice was effectively mitigated. Every bulb was required to have its specific Model Number permanently printed on the glass or base, matching the model number on the outer label. Consumers could easily verify this match, and any discrepancies could be reported to authorities.

Another concern was whether an outer box carrying a 4-star or 5-star label might be used to conceal a 3-star product. To counter this, regulatory bodies conducted market surveillance sweeps at least once a year. These audits successfully uncovered instances of mislabelling. Whenever doubts arose regarding a bulb's performance, physical samples were drawn and sent to accredited laboratories for validation. These independent lab reports served as primary evidence for initiating legal proceedings against offenders.

Handling Consumer Complaints

During this period, general consumer grievances regarding CFL bulbs could be filed with the Consumer Affairs Authority (CAA). Complaints specifically regarding energy efficiency metrics could be directed straight to the SLSEA. Despite these measures, public awareness regarding lighting standards remained low.

At the time, the general public frequently raised two primary complaints regarding CFL usage

that is bulbs fuse or "burn out" too quickly and the second is the brightness or light output degrades over time.

To resolve the issue of premature failure, experts recommended enforcing a minimum warranty period. Consequently, a mandatory one-year warranty became a baseline legal requirement for all retail CFL bulbs.

To address the issue of light degradation, the SLSEA introduced stringent testing criteria. If a bulb's light output dropped below 80% of its initial brightness after 2,000 hours of continuous operation, authorities would deny the product an energy efficiency label.

Star Ratings and Energy Conservation

It is worth analyzing how the introduction of star ratings on CFL bulbs impacted Sri Lanka's overall energy conservation goals. The programme successfully drove manufacturers to prioritize high-efficiency models for the consumer market. As public awareness campaigns illuminated the benefits of these choices, consumers increasingly favored star-rated options, lowering household electricity usage.

However, a question arises: is introducing energy-efficient CFL bulbs alone sufficient to optimize a nation's domestic energy footprint?

When regulatory bodies select a specific type of electronic appliance for standardization, their decision rests on several core factors, the appliance must be widely used by a massive segment of the population, the item must have a high baseline per-unit electricity consumption and there must be a wide gap in performance between the highest and lowest quality variants available in the market.

Evaluating lighting against these three parameters confirmed to authorities that prioritizing bulb standards was the right choice. Given that bulbs are used in every household, represent a large percentage of domestic load, and directly affect peak national demand, standardization was highly justified.

When the standards were first introduced, the marketplace featured a chaotic mix of CFL brands. Luminous efficacy varied wildly, with some models performing exceptionally well while others wasted significant power. Recognizing this disparity, the SLSEA took the lead in steering the public toward high-efficiency choices.

Following the success of the CFL initiative, plans were drafted to extend energy efficiency labelling to other electrical products. This expanded pipeline included LED bulbs, linear fluorescent tubes, ballasts, ceiling fans, electric motors, refrigerators, small air conditioners, and computers.

Obstacles Faced

Formulating standards for multiple categories of electrical appliances proved to be a challenging task. The primary hurdle was the lack of domestic laboratory facilities equipped to conduct specialized testing across different appliance categories.

While this infrastructure gap has been partially resolved today, establishing these testing centers requires major capital investment. Furthermore, it was unfeasible to expect local manufacturers or importers to routinely send their products to overseas laboratories due to the prohibitive costs involved.

Despite starting with limited facilities, the introduction and expansion of energy efficiency labels for CFL lighting represents a major triumph for Sri Lanka's energy conservation sector.

Compiled by Manjula Wijeyeratne,
based on an interview with
Eng. Irosha S. Fernando,
Director of the Sri Lanka
Sustainable Energy Authority.

The MEP Label
Issued for LED Bulbs

Technology evolves continuously over time, regularly introducing advanced products to the marketplace. This evolution is clearly evident in the lighting sector. Reflecting this shift, consumer preference moved away from CFL lighting over time, leading to the rapid adoption and widespread popularity of Light Emitting Diode (LED) lamps. This transition created a clear necessity for a dedicated energy efficiency framework for LED lighting.

For LED bulbs, regulators introduced a certification framework known as the Minimum Energy Performance standards. This certification label is commonly referred to as the "MEP Label", an acronym derived from the first letters of "Minimum Energy Performance".

The label is awarded in strict compliance with the SLS 1530 standard, following an evaluation of the bulb's performance metrics. To qualify for the MEP label, an LED bulb must achieve a minimum energy efficacy value of 75. Efficacy denotes the ratio of light output emitted per watt of electrical power consumed, measured in lumens per watt (lm/W).

An MEP label displays several key parameters. Beyond the efficacy score, consumers can check the manufacturer's brand name, model number, rated wattage, measured wattage, and estimated monthly energy consumption (kilowatt-hours per month).

However, meeting the minimum efficacy value of 75 is not the sole requirement to secure an MEP label. According to the SLS 1458 standard, an LED bulb must first fulfill all mandatory Safety Requirements. Additionally, the bulb must meet the criteria outlined in the SLS 1530 standard for MEP certification, which includes a close assessment of marked versus actual power consumption.

The physically measured wattage of an LED bulb is permitted to deviate by no more than 10%, either plus or minus from its declared, rated wattage. For example, if an LED bulb is marked as 10 Watts, its tested power consumption must fall between 9 Watts and 11 Watts to pass. Furthermore, the actual light output must not drop below 90% of the claimed brightness marked on the box.

Other evaluated criteria include the power factor, a mandatory operational lifespan of at least 10,000 hours, and the Color Rendering Index (denoted as CRI). CRI is an index that measures how accurately a light source reveals the true colors of an object when compared to a natural light source. For standard incandescent filament bulbs, this value sits at approximately 97%. According to the standard, the specified value (luminous efficacy) for an LED

lamp must be 80% or higher.

When this certification was initially introduced for LED lamps, it was not mandatory; it was a voluntary certification that manufacturers could opt into. However, later on, it was made a strictly mandatory requirement.

In a previous article, we explained the Star Label system awarded to CFL bulbs. At the beginning of this article, we discussed the MEPS (Minimum Energy Performance Standard) labelling for LED lamps. Based on this information, two types of labels are mentioned. It is important to understand the difference between these two label categories. The Star Label (or Star Certification) is considered a more advanced method of measuring energy efficiency. It introduces multiple levels of energy efficiency. If the number of stars on the label is higher, it means the product has a higher energy efficiency level. A product with a lower star rating also has the potential to upgrade to a higher star rating over time. The MEPS Certification (Minimum Energy Performance Standard) involves defining a single, minimum energy efficiency threshold and granting certification to products that manage to meet or reach that baseline.

It should be noted that the second phase of MEPS certification is transitioning into a Star Certification. The relevant programme for LED lamps is currently being formulated.

Despite these regulations, we frequently see LED lamps without the MEPS label being sold in the market. It is an open secret that piles of these unlabelled LED lamps are sold, particularly on roadsides and pavements.

Consumers purchasing LED lamps from such places do not look for a MEP label, nor do they question its absence. As a result, a situation has arisen where low-efficiency LED lamps inevitably end up in the hands of consumers. This raises a critical question: Is the ultimate goal of energy conservation which we hope to achieve by introducing energy-efficient appliances and electrical accessories, actually being fulfilled?

The reason these unlabelled LED lamps continue to be sold continuously in the market is the lack of market surveillance to identify them and take legal action. The Sri Lanka Sustainable Energy Authority (SLSEA) currently lacks the required staff capacity and other resources to conduct these market raids independently.

To address this, the SLSEA has held discussions with the Consumer Affairs Authority (CAA). Arrangements are now being put in place to conduct these market surveillance activities and raids with the assistance of the CAA's investigative officers.

The necessary legal frameworks have already been drafted and forwarded to the Legal Draftsman's Department. The Consumer Affairs Authority is scheduled to issue the relevant Gazette notification in the near future, making the MEP label legally mandatory for LED lamps.

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Energy Efficiency Labelling for **Ceiling Fans**

When environmental temperatures soar, the first instinct for almost everyone is to turn on an electric fan. Because of this, it is fair to say that a significant portion of a household's electricity bill is spent purely on cooling. This is precisely why introducing an energy efficiency label for electric fans is so vital.

Currently, the energy efficiency Star Label has been introduced specifically for ceiling fans with a sweep diameter of 56 inches (1400 mm). Since nearly 95% of the electric fans used in Sri Lanka are 56-inch ceiling fans, priority was given to implementing the energy efficiency label for this category.

Under the SLS 1600 standard, the Sri Lanka Standards Institution (SLSI) and the Sri Lanka Sustainable Energy Authority (SLSEA) have recently taken measures to make this labelling mandatory for ceiling fans.

Several operational parameters are taken into consideration when awarding the energy label to a ceiling fan. They are Air Delivery or the volume of airflow discharged by the fan per minute, Wattage or the electrical power consumed by the fan, Power Factor and Regulator Consistency, the variance in airflow between two adjacent speed settings on the fan regulator.

To determine the core energy efficiency, technical evaluators calculate the volume of air delivered per minute per single watt of electricity consumed. This metric is referred to as the "Vice Value".

A standard energy label issued for ceiling fan contains a wealth of useful data for consumers such as brand name of the manufacturer, model numbers of both the fan and its speed regulator, the actual wattage verified during testing, the Star rating and power consumption (wattage) at maximum, minimum, and average speed limits.

Although the labelling programme for ceiling fans has been established, unlabelled ceiling fans can

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Future Steps in Energy Labelling
for Electrical Appliances and Accessories

We continue to use a large number of electrical appliances and accessories in our daily lives for which energy efficiency certifications have not yet been introduced. Air conditioners, computers, rice cookers, and gas cookers are chief among them. Because some of these appliances are used in almost every home today, they can be identified as commonly used electrical items.

Engineer (Mrs.) Irosha S. Fernando, Director of the Sri Lanka Sustainable Energy Authority (SLSEA), states that a programme is currently underway to develop the standards of these appliances and introduce the energy performance label.

Air Conditioners and Refrigerators

Air conditioners and refrigerators are two types of high-power-consuming electrical appliances used for cooling purposes. Refrigerator certification was initially carried out under the SLS 1230 standard, under which the MEPS (Minimum Energy Performance Standard) label was introduced. A new label featuring Star Ratings for refrigerator energy efficiency is scheduled to be launched within this year. Testing for refrigerators is conducted at a laboratory established within the NERD (National Engineering Research and Development) Center.

The certification framework for air conditioners has also been finalized. Under this, plans are in place to issue energy efficiency certificates for both inverter and non-inverter type air conditioners. The necessary testing laboratory for air conditioners has been set up at the LECO premises in Ja-Ela. This laboratory was constructed with financial assistance from the Republic of South Korea. Suppliers who distribute air conditioners to the market have already been informed about the labelling programme, enabling them to get their air conditioner models tested.

Computers

Computers of various models are widely used today. Some may question whether the energy efficiency of computers really impacts overall energy conservation. However, introducing energy-efficient computers is highly important. Desktops, laptops, notepad

Currently, the computer MEPS label is voluntary, meaning it is not yet legally mandatory for all suppliers. For instance, E-Wis computers, a local manufacturer have already obtained this label voluntarily. However, plans are underway to make this energy label mandatory for all computers within the next two years.

computers, tablets, notebooks, servers, and workstations are very commonly used today.

A MEPS-type label has been introduced for these devices under the SLS 1580 standard. For computers, two specific values are obtained during testing: TEC - Estimated Max and TEC - Estimated. TEC stands for Typical Energy Consumption. TEC - Estimated Max is a calculated value determined based on the computer's technical specifications. TEC - Estimated value is obtained through actual physical testing.

These values are recorded by operating the computer across various operational modes, including off mode, idle mode, short idle mode, and sleep mode.

Currently, the computer MEPS label is voluntary, meaning it is not yet legally mandatory for all suppliers. For instance, E-Wis computers, a local manufacturer have already obtained this label voluntarily. However, plans are underway to make this energy label mandatory for all computers within the next two years.

Rice Cookers

Director Eng. (Mrs.) Irosha S. Fernando states that an energy label will also be introduced shortly for electric rice cookers. Various models of rice cookers currently available in the market have already undergone testing, and their performance standards have been finalized and submitted for official approval. The specialized testing laboratory required for rice cookers is expected to be fully constructed by the end of this year, alongside the official launch of the rice cooker energy efficiency label.

Beyond rice cookers, other cooking appliances are heavily used in kitchens, primarily gas stoves and induction cookers. Plans are in place to introduce energy efficiency labels for both of these categories. Furthermore, the development of standards required to introduce energy labels for electric kettles and immersion heaters (water heaters) is currently underway.

At present, both exceptionally high-quality and very low-quality gas cookers are flooded in the marketplace, making it difficult for consumers to select an energy-efficient model. The energy performance standard for gas cookers have already been drafted, and the benchmarks required to award Star Ratings for gas cookers will be established within this year.

Water Pumps

Many households rely on water pumps to draw water from wells for residential and other daily needs. Arrangements have been organized to introduce energy efficiency labelling for these water pumps as well. Currently, manufacturers can obtain this label on a voluntary basis.

Washing Machines and LED Panel Lights

Washing machines are another common household appliance found in almost every home today, and steps are being taken to introduce an energy efficiency label for them.

Additionally, LED panel lights are now a widely used lighting category. The standard for LED panel lights was officially published in October 2023. While the opportunity is open for manufacturers to obtain this label voluntarily, records show that no manufacturer or supplier has come forward to do so yet. This situation has arisen primarily because the general public is unaware that an energy efficiency label exists for LED panel lights. If consumers become aware of this label and start demanding it when making a purchase, manufacturers and suppliers will be driven to obtain it. Because voluntary adoption has stalled due to a lack of consumer demand, steps will be taken very quickly to make the energy label mandatory for LED panel lights.

Future Steps

Under the ongoing national energy labelling programme, there are future plans to introduce labels for electric irons and television sets.

Furthermore, Director Eng. Irosha S. Fernando highlighted that steps are being taken to upgrade existing MEPS labels into Star-rated labels and to introduce a completely redesigned, uniform label format for all appliances in the future.

Once launched, this new certification label will be clearly visible on the packaging of every certified appliance model. Crucially, the new label will feature a QR code. By scanning this QR code, consumers will be able to instantly access detailed information about the product's energy performance and compare it with competing products in the market before making a purchase.

Further, the Director of the Sri Lanka Sustainable Energy Authority, Engineer Irosha S. Fernando, stated that the Appliance Energy Labelling Programme is implemented under the coordination of Assistant Director, Engineer Chanaka De Silva, at the Sri Lanka Sustainable Energy Authority. She further noted that, with Engineer Chanaka De Silva's exceptional dedication and commitment to the programme, it is expected to be further strengthened and developed into a more robust and nationally significant programme in the years ahead.

Compiled by Manjula Wijerathne,
based on an interview with the
Director of the Sri Lanka
Sustainable Energy Authority,
Engineer Irosha S. Fernando.

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Energy Management via the ISO 50001 Standard

Why is the ISO 50001 Standard Important to an Organization?

It is a common sight in Sri Lanka for many organizations, especially export-oriented manufacturing enterprises to obtain certifications like ISO 50001 and ISO 14001. However, a vast majority of people lack a deep understanding of what ISO 50001 actually entails, often viewing it merely as a certificate to display on a wall. In reality, if your organization adopts the ISO 50001 standard, it unlocks a massive range of tangible benefits.

What is the ISO 50001 Standard?

ISO 50001 is the international standard dedicated to Energy Management Systems. It establishes a systematic framework designed to continuously optimize energy performance through a structured process of planning, implementing, checking, and reviewing. This process is fundamentally built upon the famous Deming Cycle.

Key Benefits of ISO 50001

It enables an organization to manage its energy consumption systematically rather than haphazardly. It provides a scientifically sound methodology to accurately prove and quantify exactly how much energy you have saved over the course of a year. If your organization plans to adopt other international standards in the future, implementing ISO 50001 serves as an excellent foundational training ground for your staff.

How to Establish an Energy Management System under This Standard

An organization must begin by thoroughly analyzing its institutional environment. First, identify the internal and external factors that directly influence energy management. Understanding the prevailing legal framework is critical here and for instance, certain large-scale industries are legally mandated by Sri Lankan law to report their energy data. Furthermore, the ultimate success of energy management relies heavily on the daily habits and cooperation of the employees. Because you must continuously monitor these human and regulatory elements as you move forward, a comprehensive preliminary study is vital. Following this evaluation, the organization must draft a formal Energy Policy, appoint a designated Energy Manager, form a supporting energy committee, and allocate the necessary resources to them.

The Role of Top Management

The long-term sustainability of an Energy Management System relies entirely on the commitment of upper management. ISO 50001

explicitly dictates that leadership must take direct responsibility for, formulating and endorsing the Energy Policy, setting clear institutional energy targets and objectives, establishing an active Energy Management Committee, educating employees on the critical importance of energy conservation and providing adequate capital, equipment, and human resources required for energy interventions.

What are the Core Components of Energy Planning

According to the ISO 50001 framework, Energy Planning is the most crucial phase. The process unfolds through following systematic steps such as identify significant energy uses, determine which operations consume the highest amount of energy. For example, if your organization is a commercial office complex, air conditioning will likely be your primary SEU. Gather Technical Baseline Data to pinpoint these high-consumption areas. You must log technical data such as equipment voltage, power ratings, and daily operational hours. This data reveals exactly which machinery requires the most urgent energy-saving interventions. Next, identify specific energy conservation opportunities and technologies tailored for each SEU. Convert these opportunities into an institutional action plan. This plan must run parallel to specific targets outlining exactly how much energy must be saved across different sectors. Formulate a plan to gather ongoing energy metrics using calibrated sub-meters and measuring instruments. This plan must explicitly state the names of the personnel responsible for data collection and define the precise time intervals for logging the data.

Energy Baseline (ENB) and Energy Performance Indicators (ENPI)

These two data-driven concepts are vital for comparing an organization's current energy consumption against its historical data to verify true performance improvements. These concepts are important for comparing an organization's energy consumption of the current year against the previous year. As the Energy Performance Indicator, a suitable unit can be used depending on the nature of the organization. For example, for tea factories, it is an indicator suited to the amount of electricity units required to produce a kilogramme of tea. Let us assume that 1.2 units of electricity were consumed for one kilogramme of tea last year. Taking that as the Energy Baseline, energy plans should be prepared to achieve a lower value than that in the current year. These are highly important concepts in energy planning and are utilized for calculating energy savings.

After planning...

Energy management does not end with planning. To obtain results, it is essential to implement the prepared plan. When implementing the organizational action plan, it should be executed by paying attention to the following points:

Procurement: Efficient equipment must be purchased during procurement.

Constructing new processes, buildings, etc. for the organization: These must be planned from the very beginning to be energy-efficient, because making changes at a later stage is extremely difficult.

Maintaining operational parameters within the specified range: This means operating the organization's energy use and energy-consuming equipment within their specified parameters. Keeping the temperature of air conditioners at 26°C can be shown as a simple example.

When implementing the organization's action plan, it is important to continuously train the relevant individuals, continuously create awareness among

If your organization is a commercial office complex, air conditioning will likely be your primary SEU. Gather Technical Baseline Data to pinpoint these high-consumption areas. You must log technical data such as equipment voltage, power ratings, and daily operational hours. This data reveals exactly which machinery requires the most urgent energy-saving interventions.

the organization's employees, and obtain their ideas. Methodologies must be prepared for this as well. Similarly, it is also important to adequately document the information relevant to the energy management system.

Checking and Evaluating Performance

To ensure that the implemented energy system is performing as intended, the standard utilizes a dual-checking mechanism such as cross-referencing current energy data against the established Energy Baseline to mathematically prove exactly how much energy and money have been saved. Also, regular internal audits must be conducted to guarantee that the management system is operating smoothly and in compliance with the standard. Any operational gaps or non-conformities identified during these audits must be corrected immediately.

Modifications for the Energy Management System

This is the fourth step of the Deming Cycle. The objective here is to achieve continuous improvement for the system by implementing short-term and long-term remedies for the deficiencies identified through the aforementioned internal audits, and by revising provisions for energy policies, targets, and objectives through management reviews conducted at least twice a year.

How Can an Organization Obtain ISO 50001?

An organization can obtain official compliance certification through the Sri Lanka Standards Institution (SLSI) or other accredited private international certification bodies operating within the country. It is important to remember that even if your organization does not wish to go through the formal, paid process of official certification, simply setting up your internal energy system according to the principles outlined in the ISO 50001 standard will still allow you to reap all the massive financial and energy-saving benefits listed above.

Engineer Prasanna Maldeniya,
Director (Systems and Planning),
Sri Lanka Sustainable Energy Authority.

Energy Efficiency Labelling for **Ceiling Fans**

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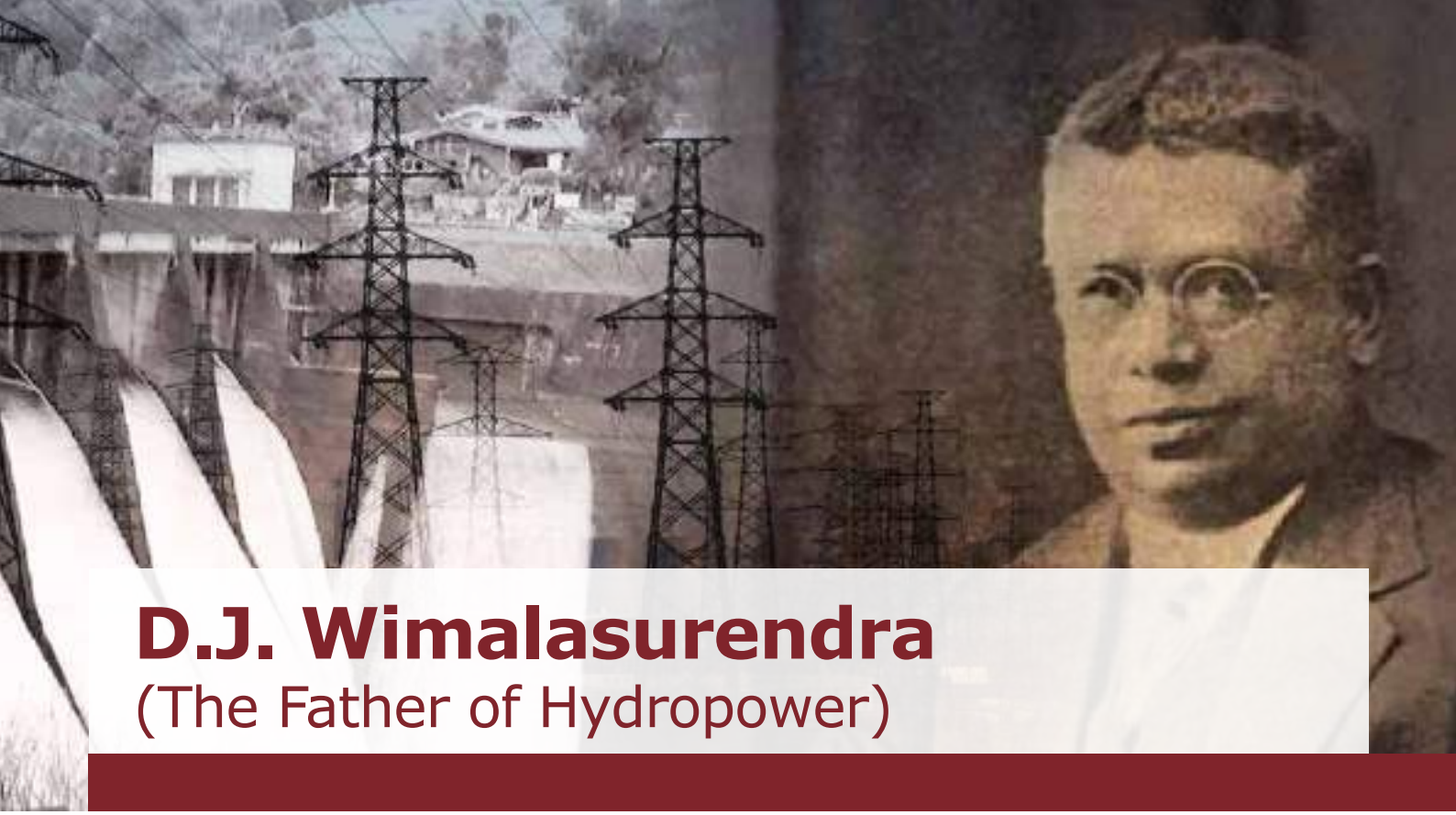
still be found in the marketplace. The groundwork is currently being laid to identify these unlabelled products through market surveillance and to take legal action against their manufacturers.

The necessary draft legislation has already been prepared and forwarded to the Legal Draftsman's Department. The Consumer Affairs Authority (CAA) is expected to issue a relevant Gazette notification in the near future, making the energy efficiency label strictly mandatory for ceiling fans.

As emphasized before, the energy efficiency label is currently active only for the specified model of ceiling fans. However, various other models are widely used, such as table fans, pedestal (standing) fans, and wall-mounted fans.

The energy performance standard for pedestal, wall and table fans has already been formulated. To test these models officially, a dedicated laboratory must be constructed. This specialized laboratory is scheduled to be completed within this year and will be established at the Sri Lanka Standards Institution (SLSI). Once these testing facilities are fully operational, the SLSEA will begin issuing energy efficiency certifications for pedestal, wall and table fan. The framework required to start issuing these certifications is expected to be finalized by the middle of next year.

Compiled by Manjula Wijerathne,
based on an interview with the
Director of the Sri Lanka
Sustainable Energy Authority,
Engineer Irosha S. Fernando.



D.J. Wimalasurendra
(The Father of Hydropower)

"The miraculous man who turned water into electricity" has been an affectionate, enduring title on the lips of the people for many decades. This monumental figure, embodying our nation's greatest merits is D.J. Wimalasurendra. For our good fortune, nature bestowed him upon us as an inheritance to lead the way in securing a higher standard of living for the citizens of this small island, famously titled the Pearl of the Indian Ocean and a Paradise.

Devapura Jayasena Wimalasurendra was born to his parents, Muhandiram Don Juan Wimalasurendra and Dona Christina Jayasinghe, on September 17, 1874, at Muhandiram Watta in Galwadugoda, Galle, in the Southern Province. In 1881, he entered Ananda College, a leading school in the island. Exceptionally brilliant in his educational pursuits, he earned honour as the most outstanding student of the school in the seventh grade. He became the first Anandian to pass an examination conducted by the University of London, and also passed the Cambridge Senior Examination and the London Matriculation Examination with flying colours.

In 1893, he entered the Government Technical College in Maradana, Colombo, and obtained a Diploma in Civil Engineering, after which he was appointed as an Assistant Engineer at a government factory in Kolonnawa. During this period, he traveled to India and secured membership in the Institution of Civil Engineers, London. Later, in 1898, he was appointed as a Senior Engineer in the Public Works Department (PWD).

As a key contributor to the extension project of the Bandarawela-Badulla railway line, his design of the Demodara loop-tunnel railway line stood out as a reflection of his masterful technical knowledge. Meanwhile, following his appointment as the District Engineer of Galle, the development of the Galle Harbour and the Hiriwadura Water Supply Scheme emerged as fruits of his sharp intellect during that period. Later, in the year 1901, he joined the service in the Nuwara Eliya area. By this time, Wimalasurendra was a young engineer of about 27 years of age. It was during this phase that he initiated the technical mission to give birth to the then-unborn child known as the Laxapana Hydropower Project.

The colonial rulers utilized Wimalasurendra's technical expertise to explore for gold and other mineral deposits they believed existed in this land. An African Boer prisoner, who was held as a British prisoner of war at the time, was assigned to assist him. While trekking through the dense jungle, the two engineers accidentally stumbled upon the Laxapana-Aberdeen waterfalls. As Wimalasurendra

gazed upon it, he began visualizing a mental image of a small turbine spinning at the base of the water stream and lighting up electric bulbs. The thought arose within him that a bulb with the light of one hundred thousand lamps could be given life from this silver-hued water. However, the white rulers ridiculed and dismissed this as a foolish idea.

In the year 1918, he submitted a scientific research paper titled "Economics of Power Utilization in Ceylon" to the Institution of Engineers, demonstrating the economic advantages of utilizing hydropower over electricity generated from fossil fuels. The thematic slogan of lighting a "lakh of lamps"(100,000 lamps) (Lakshaya) later evolved into Laxapana, becoming a national treasure of ours. Consequently, this Laxapana Hydropower Scheme was approved by the Legislative Council in the year 1924. However, when executing the project, the white rulers handed over its responsibilities to their own people, which disheartened Wimalasurendra and prompted him to go abroad once again.

While abroad, he joined the world-renowned Faraday House in London, obtained his Electrical Engineering Diploma (MIEE), and was appointed as the President of its membership. Nevertheless, due to the incompetence of the foreigners who had taken over the Laxapana project, its construction work was suspended in April 1927. Appointed as the Chief Engineer of the Public Works Department in 1928, Wimalasurendra became the pioneer in establishing the Kolonnawa Power Station. The Sinhala national newspaper published on March 12, 1929, reported that a well-known engineer named Pitkeathly stated it was Wimalasurendra who paved the way to save a massive amount of money spent on oil and coal by utilizing flowing water instead.

After 30 years of illustrious, exemplary, and challenging service, Wimalasurendra retired with dignity from the public service at the age of 55. Later, in 1931, he was elected as the Member for Ratnapura in the State Council. The construction work of the Laxapana Hydropower Station, which had been halted in 1927, was restarted in the year 1938, by which time Wimalasurendra was approaching his twilight years at the age of 64.

Having engaged in an unparalleled mission for 79 years to illuminate his motherland, the "Father of Hydropower" passed away from the nation on August 10, 1953. Following his demise, the then Minister of Irrigation and Power, C.P. de Silva, proposed naming the Norton Bridge Power Station in his honour. Although the approval of the Prime Minister Dudley Senanayake was obtained, the fulfillment of that national duty was delayed due to various reasons. Later, under the United Front government, upon the recommendation made by the Minister of Power and Irrigation, Maithripala Senanayake, to the Prime Minister, Mrs. Sirimavo Bandaranaike, the Norton Power Station was officially named after Wimalasurendra in 1964. Furthermore, the 100 MW Laxapana Hydropower Station was opened in 1974 to coincide with the centenary of Wimalasurendra's birth anniversary.

The highest tribute we can pay to this great man is to take steps to utilize the vision he possessed regarding electrical power for human development in our country as much as possible. Introducing electric trains and a trolleybus service by electrifying the country's railway service was one of the dreams he envisioned. Changing the local education system and orienting it toward a path that develops technical knowledge was another one of his aspirations.

Today, our duty and responsibility is to carry forward the programme of developing the country through domestic resources, a goal that Wimalasurendra was unable to fully realize during his lifetime.

By Amashi Madhushani

Companies You Must Approach for Your Electricity Needs

For over five decades, the Ceylon Electricity Board (CEB), established under the Ceylon Electricity Board Act No. 17 of 1969 worked toward the progression of the country's power sector, providing electricity to 98% of the Sri Lankan population and transforming the nation into one with a high-quality power system among Asian countries.

However, with the aim of further developing the power sector and improving its efficiency, the Ceylon Electricity Act No. 36 of 2026 was introduced. Under this Act, the operations of the Ceylon Electricity Board were transferred to new companies.

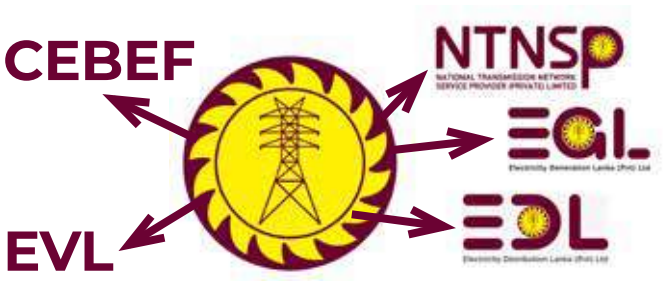
These companies are 100% state-owned and operate as entities fully accountable to the General Treasury. Their new operations officially commenced on March 09, 2026.

1. Electricity Generation Lanka (Pvt) Ltd. (EGL)

All electricity generation power stations established in the country have come under this company. Accordingly, this company holds the responsibility of generating the electricity required to meet the country's power demand.

2. Electricity Distribution Lanka (Pvt) Ltd. (EDL)

Except for LECO (Lanka Electricity Company), all distribution systems operate under this company. Accordingly, the four distribution divisions (Divisions 1, 2, 3, and 4) that previously operated under the Ceylon Electricity Board will continue to operate in the same manner within this institution. This company bears the responsibility of fulfilling consumer needs, ranging from providing new electricity connections to handling power outages, disconnections, and reconnections. Therefore, as an electricity consumer, the company you will have to interact with most closely in the future is EDL.



3. National Transmission Network Service Provider (Pvt) Ltd. (NTNSP)

In the process of transmitting electricity from the power stations to the consumer's home, this company is entrusted with the responsibility of transmitting electricity up to the relevant transformer.

4. Ceylon Electricity Board Employee Fund (Pvt) Ltd. (CEBEF)

This company holds the responsibility of managing the Employee Provident Fund (EPF) and pension funds of the employees of the Ceylon Electricity Board as well as the new companies.

5. Energy Ventures Lanka (Pvt) Ltd. (EVL)

The management of assets belonging to the company, along with other necessary duties, is carried out under this entity.

It should be noted that when fulfilling your electricity needs in connection with these companies, the addresses and telephone numbers you were aware of when dealing with the Ceylon Electricity Board will remain exactly the same.

Chaminda Liyanage

National Energy Education Media Project - Planning Session

The planning session for the National Energy Education Media Project, which is planned to be implemented in the year 2026 jointly by the Sri Lanka Sustainable Energy Authority, the National Institute of Education (NIE), and the Science Branch of the Ministry of Education, was held on February 18 and 19, 2026, at the Water Supply Board Center of Excellence in Ratmalana.

The objectives of this media programme are to create awareness among the public, and especially the school community, regarding future energy trends; to develop an interest in energy projects and prepare the mindset of students for innovation; and to popularize activity-based energy learning processes expected through current educational reforms.

This planning session was held under the chairmanship of Professor Wijendra Bandara, Chairman of the Sustainable Energy Authority, and Mrs. Gothami Gannoruwa, Director General (Planning) of the Ministry of Energy.

Dr. Aruna Lokuliyana, Senior Lecturer at the University of Kelaniya; Engineer Harsha Wickramasinghe, Former Director General of the Sustainable Energy Authority; Dr. M.L.S. Piyatissa, Senior Lecturer at the National Institute of Education; and Mrs. Padmini Dissanayake, Deputy Director of Education at the Ministry of Education, along with Provincial Directors of Education, participated as resource persons for this session.

A Guidance Programme on Sustainable Energy-Based Planning

A guidance programme on sustainable energy-based house planning for the officers of the North Central Provincial Council was successfully held on February 27, 2026, at the Provincial Council Auditorium, under the leadership of the Sri Lanka Sustainable Energy Authority.

Organized upon the request of the Deputy Chief Secretary of the North Central Provincial Council, the financial and resource contribution for this programme was provided by the Sri Lanka Sustainable Energy Authority.

During this programme, awareness was created on topics such as the efficient use of natural light in housing and building design, enhancing energy efficiency, and the application of green building concepts.

A total of 96 officers, including the Deputy Chief Secretary (Training) of the North Central Provincial Council, Mr. R.M.K.R.B. Ratnayake, participated in this event, which can be considered an important

opportunity for creating awareness on managing future energy consumption more efficiently and sustainably.

Resource contribution for this program was provided by officials from the Sri Lanka Sustainable Energy Authority, including Engineer/Director Irosh Fernando, Director/ Engineer Prasanna Maldeniya, Deputy Director/ Engineer Gayathri Jayapala, Deputy Director/Engineer Jude Sakaraj, and Junior Manager Dayan Karunaratne.

▸ By **Nimalka Samarakoon**

Sri Lanka National Energy Efficiency Awards - 2026

The National Energy Efficiency Awards 2026 was held on February 24, 2026, under the patronage of the Honorable Prime Minister, Dr. Harini Amarasuriya, and with the participation of the Honorable Minister of Energy, Engineer Kumar Jayakody, and the Honorable Deputy Minister, Arkam Ilyas.

At this National Energy Efficiency Awards ceremony, which was presented across three main sectors - Manufacturing, Services (Hotels, Commercial Buildings, Government Buildings), and Health, Mr. A.H.J. Jeevaka Samarasekara (World Trade Center Colombo, Overseas Realty Ceylon PLC) was awarded as the Best Energy Manager.

Manufacturing Sector	**(Medium Scale):**	**MAS Fabrics (Pvt) Ltd, Thulhiriya**
Manufacturing Sector	**(Small Scale):**	**E.B. Creasy & Company PLC (BIC and DENTA Factory)**
Commercial Buildings Sector	**(Large Scale):**	**World Trade Center (WTC), Overseas Realty Ceylon PLC**

Awards for Best Energy Service Companies:

Energy Improvement Category:	**Forbes Marshall Lanka (Pvt) Ltd**
Energy Auditing Category:	**National Cleaner Production Centre**

The Gold Awards for outstanding energy efficiency in respective fields were presented by the Honorable Prime Minister, Dr. Harini Amarasuriya.

The Silver Awards in the respective sectors were won by the following organizations,

Manufacturing Sector	**(Large Scale): Naturrub Exports International**
Manufacturing Sector	**(Large Scale): Trishel Fabric (Pvt) Ltd.**
Manufacturing Sector	**(Large Scale): MAS Active (Pvt) Ltd, Linea Intimo**
Manufacturing Sector	**(Medium Scale): Hydramani Mercury Apparel (Pvt) Ltd.**
Hotel Sector	**(Medium Scale): Jetwing Yala**

Awards for Best Energy Service Companies:

Energy Improvement Category:	**Eco 33 (Pvt) Ltd**
Technology Supply Category:	**Maxtherm Lanka (Pvt) Ltd**

Their awards were presented by the Honorable Minister of Energy, Engineer Kumar Jayakody and by the Honorable Deputy Minister of Power, Engineer Arkam Ilyas.

Manufacturing Sector	**(Large Scale):**	**Hirdaramani Industries (Pvt) Ltd**
Manufacturing Sector	**(Large Scale):**	**Ansell Textile Lanka (Pvt) Ltd**
Manufacturing Sector	**(Large Scale):**	**Siam City Cement Lanka Limited**
Manufacturing Sector	**(Large Scale):**	**Midas Safety Lanka (Pvt) Ltd**
Manufacturing Sector	**(Small Scale):**	**Finlays Colombo Limited**
Manufacturing Sector	**(Small Scale):**	**Incub Solution (Pvt) Ltd**
Hotel Sector	**(Small Scale):**	**Ayurvie Weligama**

Awards for Best Energy Service Companies:

Energy Auditing Category:	**Co-Energy (Pvt) Ltd**
Technology Supply Category:	**Professional Met Consultancy Services (Pvt) Ltd**

They received the Bronze Awards.

In addition to these, certificates were awarded to 23 institutions that demonstrated commitment to energy efficiency in their respective fields. These certificates were presented by the Secretary to the Ministry of Energy, Professor Udayanga Hemapala, and the Chairman of the Sri Lanka Sustainable Energy Authority, Professor Wijendra Bandara.

By **Kalanika Hewage**