LEGRS

Local Energy Governance Rating System

Guideline Pilot

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ICDI國際氣候發展智庫
International Climate Development Institute

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Contents

Introduction

Cities, whose inhabitants account for more than half of the global population, contribute to more than two-thirds of global energy consumption and three-fourths of global carbon emissions. Building on this perspective, international initiatives building on decarbonizing cities and communities have been growing in recent years, such as Cities Race to Zero, Sustainable Development Goals (SDGs), CDP-ICLEI Track (formerly the CDP-ICLEI Unified Reporting System) and more.

However, very few initiatives target energy transition and sustainable energy at the local level. Even fewer frameworks and tools were once available for local governments to develop a comprehensive energy plan. In response to this emerging demands, Industrial Technology Research Institute (ITRI), ICLEI-Local Governments for Sustainability (ICLEI), ICLEI Kaohsiung Capacity Center (ICLEI KCC) and International Climate Development Institute (ICDI) co-developed the Local Energy Governance Rating System (LEGRS) since 2020, which acts as a framework and a tool to support local governments transitioning towards sustainable energy systems.

From 2020 to 2021, LEGRS has been building the guideline through in-depth interviews, reviewing the facilitating model for international sustainable city certification and initiatives, studying local energy transition best practices, and working with international experts for peer review. The initial framework of LEGRS was published in the *2021 Global Smart Solution Report* (GSSR).

The three core goals of LEGRS are as follows:

- **Industrial Development:** leading local governments to invest resources in developing the energy services industry to create job opportunities for green energy and energy efficient industries
- **Energy Transition:** improving energy efficiency, renewable energy and storage for developing a sustainable energy system with safety, reliability and affordability
- **Capacity Building:** strengthening local energy governance capacity to realize energy and climate commitments

LEGRS is not intended to establish an independent international certification system, but to serve as an important toolbox for local governments to link up with international sustainable certification, accelerating local energy transitions, and eventually realizing commitments toward energy and climate goals. LEGRS looks forward to collaborating with a variety of international net zero sustainable city certifications with the aim of assisting local governments in fulfilling sustainable development goals.

Potential Users of the Guideline:

The document is applicable to local governments and local authorities with political jurisdiction.

Framework:

Many global frameworks for low-carbon sustainable cities have been developed in recent decades, including CDP-ICLEI Track, ISO 37120, STAR Community Rating System, and LEED for Cities and Communities. However, there are few policy frameworks specializing in governance capacity and green industry development for local energy transition. From this perspective, LEGRS aims to establish a policy framework of local energy governance based on the spirit of ISO 50001:2018 Energy Management System, that will enable local governments to accelerate their energy transition. Eventually, we expect that the objectives of SDGs will be realized through implementing this guideline.

The Local Energy Governance Rating System consists of six main policy issues:

A. **Local Policy Operation and Transparency**
B. **Energy Infrastructure**
C. **Residential Policy**
D. **Commercial Policy**
E. **Institutional Policy**
F. **Innovation and International Participation**

A. Local Policy Operations and Transparency focuses on “strategic planning,” emphasizing governance capacity building and pushing forward energy transition through establishing objectives and strategies.

B-E: These focus on "tactical initiative," emphasizing how to comprehensively establish and operate programs.

F. Innovative and International Participation is established in consideration of differing levels of centralization and local governance in various countries to encourage central and local governments to collaborate in creating innovative energy transition plans, and to encourage local governments to participate in international Net-Zero Sustainable City initiatives aimed at making commitments toward the goals of energy transition and climate change.

Policy Issues and Scoring:

The guideline is divided into six policy issues. Each policy issue comprises 6 indicators that are divided into "Prerequisites" and "Points," with the exception of **F. Innovative and International Participation.** "Prerequisites" refer to the basis on which local governments build energy governance capacity and develop energy industries. This category focuses on building professional capacity and making energy decisions based on data, and it encourages local governments to start to promote energy transition from such indicators. "Points" are to encourage local governments to realize their energy and climate goals step by step. In addition, the guideline also establishes the following simplified self-rating criteria for policy governance readiness: "**Energy Transition Oriented**," "**Energy Transition Ready**," "**Ongoing Energy Transition**" and "**Advanced Energy Transition**." Each level is as follows:

Energy Transition Oriented

Energy Transition Ready

Ongoing Energy Transition

Advanced Energy Transition

- **Energy Transition Oriented:** local governments fulfill all "Prerequisites" to reach this level.
- **Energy Transition Ready:** local governments fulfill all "Prerequisites," and achieve a score of "50 Points" to reach this level.
- **Ongoing Energy Transition:** local governments fulfill all "Prerequisites," and achieve a score of "80 Points" to reach this level.
- **Advanced Energy Transition:** local governments fulfill all "Prerequisites," achieve a score of "80 Points," and propose at least one innovative program in line with the "F1" requirements.

Principles for Guideline Establishment

The purpose of this guideline is to establish a leading framework for local governments regarding energy policies and measures planning and management. For the sake of connecting international markets, this guideline encourages local governments to adopt international industry standards toward competitive energy governance capability, energy efficiency improvement, renewable energy usage and green energy services industry development. The guideline principles are as below:

- **Application to Local Government Authorities:**

  The guideline prioritizes programs for local governments within their realms of authority due to the nature of decentralized systems, such as residential, commercial and institutional sectors.

- **Response to the Needs and Expectations of Stakeholders:**

  The guideline assists local governments in responding to the needs of stakeholders through developing energy policies and programs. Stakeholders include residents, non-governmental organizations, green energy and green energy efficiency industry associations, and financial institutions.

- **Improving Policy Governance and Industrial Expertise:**

  The guideline leads local governments to collaborate with professional institutions to continue establishing and improving capacity in energy policy governance and industrial expertise.

- **Creating Value for the Energy Services Industry:**

  The guideline assists local governments in encouraging the development of the “energy services” industry to expand employment opportunities, and balancing the “manufacturing” industry development of energy equipment in the past.

- **Link to International Energy Certification and Standards:**

  The guideline is based on Sustainable Development Goals (SDGs) to give local governments a variety of concepts of common language of international standards for integrating with international markets and linking policy performance to international certification.

Local Energy Governance Scorecard

A. Local Policy Operation and Transparency（20 Points）

Indicators	Category	Scores	Aligning with SDGs	Stakeholders
A1 Local Energy Consumption Inventory	Prerequisites	-		Policy Community
A2 Local Energy Policy Objectives and Action Plan	Prerequisites	-		Policy Community
A3 Local Energy Policy Organization Roles, Responsibilities and Authorities	Points	+5		Policy Community
A4 Response to the Needs and Expectations of Stakeholders	Points	+5		Civil Society Organizations
A5 Encouraging the Private Sector to Invest in Energy Efficiency and Renewable Energy	Points	+5		Financial Institutions
A6 Monitoring, Measurement and Evaluation of Energy Policy Progress	Points	+5		Civil Society Organizations

B. Energy Infrastructure（20 Points）

Indicators	Category	Scores	Aligning with SDGs	Stakeholders
B1 Smart Energy Data Collection and Management Program	Prerequisites	-		Public Utilities
B2 Renewable Energy Development and Application Program	Prerequisites	-		Energy Service Companies, Renewable Energy Companies
B3 Energy-efficient Street and Public Lighting Improving Program	Points	+5		Energy Service Companies, Renewable Energy Companies
B4 Water Supply, Drainage and Wastewater Treatment Efficiency Program	Points	+5		Public Construction Companies
B5 Energy Storage and Electric Vehicle Development and Application Program	Points	+5		Energy Storage Equipment Industry
B6 Public Transportation Electrification Program	Points	+5		Public Construction Companies

C. Residential Policy（20 Points）

Indicators	Category	Scores	Aligning with SDGs	Stakeholders
C1 Residential Energy Audit Program	Prerequisites	-		Energy Service Companies, Property Management Agency / Engineering Service Provider
C2 Residential Energy Professional Capacity Building Program	Prerequisites	-		Energy Service Companies, Property Management Agency / Engineering Service Provider
C3 Low Income Energy Efficiency Program	Points	+5		Social Welfare Organizations, Energy Service Companies
C4 Existing Residential Building Energy Efficiency Program	Points	+5		Energy Service Companies, Green Building Consultants
C5 New Residential Building Energy Efficiency Program	Points	+5		Energy Service Companies, Green Building Consultants
C6 Residential Demand Response and Time of Use Rate Program	Points	+5		Energy Service Companies, Public Utilities

D. Commercial Policy（20 Points）

Indicators	Category	Scores	Aligning with SDGs	Stakeholders
D1 Commercial Energy Audit Program	Prerequisites	-		Energy Service Companies, Property Management Agency / Engineering Service Provider
D2 Commercial Energy Professional Capacity Building Program	Prerequisites	-		Energy Service Companies, Property Management Agency / Engineering Service Provider
D3 Commercial Energy Management System Program	Points	+5		Energy Service Companies, Property Management Agency / Engineering Service Provider
D4 Existing Commercial Building Energy Efficiency Program	Points	+5		ISO Certification Bodies, ISO Consultancy
D5 New Commercial Building Energy Efficiency Program	Points	+5		Green Building Consultants, Construction Companies
D6 Commercial Demand Response and Time of Use Rate Program	Points	+5		Energy Service Companies, Public Utilities

E. Institutional Policy（20 Points）

Indicators	Category	Scores	Aligning with SDGs	Stakeholders
E1 Institutional Energy Audit Program	Prerequisites	-		Energy Service Companies, Public Officials (General Affairs)
E2 Energy Capacity Building Program for Public Officials	Prerequisites	-		Energy Service Companies, Public Officials (General Affairs)
E3 Institutional Energy Management System Program	Points	+5		Energy Service Companies, Public Officials (General Affairs)
E4 Existing Institutional Building Energy Efficiency Program	Points	+5		ISO Certification Bodies, ISO Consultancy
E5 New Institutional Building Energy Efficiency Program	Points	+5		Green Building Consultants, Construction Companies
E6 Institutional Demand Response and Time of Use Rate Program	Points	+5		Energy Service Companies, Public Utilities

F. Innovation and International Participation（10 Points）

Indicators	Category	Scores	Aligning with SDGs	Stakeholders
F1 Innovative Energy Governance Measurement	Points	+5		Policy Community
F2 International Energy and Climate Initiatives Participation	Points	+5		Policy Community, International Organizations

Policy Issue A

Local Policy Operation and Transparency

No.	Objectives	Category
A1	**Local Energy Consumption Inventory:** this refers to collecting and managing basic information regarding energy consumption as the basis for crafting energy policies.	**Prerequisites**
A2	**Local Energy Policy Objectives and Action Plan:** this refers to establishing local energy quantified goals in order to build and implement action plans to achieve these goals.	**Prerequisites**
A3	**Local Energy Policy Organization Roles, Responsibilities and Authorities:** this refers to establishing a special agency that implements energy policies and regulations in local governments, and improving interdepartmental collaboration to promote these policies.	**+ 5 Points**
A4	**Response to the Needs and Expectations of Stakeholders:** this refers to identifying the needs and expectations of stakeholders, and understanding the internal and external environment as the basis for making and continuously improving local energy policies and plans.	**+ 5 Points**
A5	**Encouraging the Private Sector to Invest in Energy Efficiency and Renewable Energy:** this refers to establishing a market operation mechanism to encourage non-governmental sectors to invest in energy efficiency and renewable energy technologies and implementation solutions for promoting the green energy industry.	**+ 5 Points**
A6	**Monitoring, Measurement and Evaluation of Energy Policy Progress:** this refers to tracking the progress of energy policies through monitoring, measurement and evaluation for achieving energy policy goals.	**+ 5 Points**

A1

Local Energy Consumption Inventory

■ Prerequisites ☐ Points

Objective

Collecting and managing basic information regarding energy consumption as the basis for crafting energy policies.

Requirements

1. Methods are required based on the international standards and guidelines, including collecting and managing data regarding energy consumption, identifying the source of energy consumption, and analyzing energy consumption in current and past years. In addition, determining significant energy use as well as prioritizing improved opportunities are aimed at estimating future energy consumption trends.
2. The objects within the jurisdiction of central/federal/state governments should be excluded from significant energy use sources.
3. The scope of the energy consumption inventory includes at least residential, commercial, and institutional final energy consumption.

Outcomes and Consequences

1. Plans for data collection on energy consumption should be formally disclosed and regularly updated.
2. Local energy consumption inventory should be formally disclosed and regularly updated.

Reference

1. IEA /OECD (2014) Energy Efficiency Indicators: Fundamentals on Statistics
2. IEA /OECD (2020) Energy end-use data collection methodologies and the emerging role of digital technologies
3. IEA, Energy Efficiency Indicators Template

A2

Local Energy Policy Objectives and Action Plan

■ Prerequisites ☐ Points

Objective

Establishing local energy goals in order to build and implement an action plan to achieve these goals.

Requirements

1. Quantified performance objectives in local energy policies should be established, and local governments should build and implement action plans to achieve these objectives. In addition, the objects within the jurisdiction of central/federal/state governments should be excluded.
2. The implementation content, required resources, competent authority, estimated completion time and methods to verify the quantified energy performance improvement should be included in the action plan.
3. The effectiveness of the objective should be regularly tracked, and when there is a major deviation from the objective, relevant reasons should be clarified and specific actions proposed.
4. The quantified performance indicators of energy policies should be established, and it should include the energy performance indicator. In addition, an energy baseline should be established to demonstrate energy performance improvement.

Outcomes and Consequences

Progress on quantified performance objectives and indicators of energy policies should be formally disclosed and regularly tracked. Additionally, local governments should build action plans to maintain the effectiveness of their objectives.

Reference

1. ICLEI, 100% Renewables Cities and Regions Energy Compact
2. IEA/OECD (2014) Energy Efficiency Indicators: Essentials for Policy Making)
3. ISO 17742:2015 Energy efficiency and savings calculation for countries, regions and cities
4. ISO 50049:2020 Calculation methods for energy efficiency and energy consumption variations at country, region and city levels

A3

Local Energy Policy Organization Roles, Responsibilities and Authorities

☐ Prerequisites ■ Points

Objective

Establishing a special agency that implements energy policies and regulations in local governments, and improving interdepartmental collaboration to promote these policies.

Requirements

1. A special agency to implement central and local energy and climate policies should be established by the top governance body.
2. The top governance body should establish an inter-departmental committee and regularly hold meetings to track and ensure the effectiveness of quantified performance objectives.
3. The top governance body should provide the resources for local energy policies and implementations.
4. The Technical Working Group should be established by the top governance body and regularly hold meetings. Top government officials should organize and respond to the consultation given by the Technical Working Group. The members of the Technical Working Group should include experts from at least five different professional fields: (1) Public Policy; (2) Building and Construction; (3) Public Transportation; (4) Electrical Power Systems; (5) Heating, Refrigeration, and Air-Conditioning; (6) Citizen Engagement; (7) Urban Planning; (8) Education; (9) Data and information; and (10) Sustainable Development.

Outcomes and Consequences

1. The special agency that implements the central and local energy policies should be formally designated and disclosed.
2. The meeting minutes of the local governance committee should be formally disclosed.
3. The details of the consultation and response given by the Technical Working Group should be formally disclosed.

A4

Response to the Needs and Expectations of Stakeholders

☐ Prerequisites ■ Points

Objective

Identifying the needs and expectations of stakeholders, and grasping the internal and external environment as the basis for making and continuously improving local energy policies and plans.

Requirements

1. The stakeholders who affect energy policy should be identified, and the following stakeholders should be included: (1) Energy-Related Industry Associations; (2) Energy and Environment-Related Non-Governmental Organizations; (3) Central Government; (4) Building and Construction-Related Associations; (5) Transportation Related Associations; (6) Energy-Related Academic or Research Institutes; (7) Social Welfare Groups; (8) Energy Suppliers; (9) Financial Institutes; (10) other stakeholders affected by the policies.
2. An open communication platform should be established to collect a record of the needs and expectations of stakeholders, and identify the stakeholders affected by energy policy. Local governments should publicly respond to the stakeholders and propose specific actions such as public hearings.

Outcomes and Consequences

1. The details of responses to the needs and expectations from identified stakeholders should be formally disclosed.
2. The actions resulting from responses to the needs and expectations from identified stakeholders should be formally disclosed.

A5

Encouraging the Private Sector to Invest in Energy Efficiency and Renewable Energy

☐ Prerequisites ■ Points

Objective

Establishing a market operation mechanism to encourage non-governmental sectors to invest in energy efficiency and renewable energy technologies, and implementations for promoting the green energy industry.

Requirements

1. A market mechanism for capital operations that assists non-governmental sectors to invest in energy efficiency improvements, renewable energy, energy saving or other technology applications projects which are beneficial to energy transition should be established.
2. Local governments should encourage financial institutions to invest in the green finance market, and assist renewable energy and energy efficient companies to obtain the needed funds.

Outcomes and Consequences

1. Financial policies that encourage capital investments in energy efficiency and renewable energy markets should be formally announced.
2. Policies that encourage financial institutions to invest in the green finance market should be formally announced.

A6

Monitoring, Measurement and Evaluation of Energy Policy Progress

☐ Prerequisites ■ Points

Objective

Tracking the progress of energy policies through monitoring, measurement and evaluation for achieving energy policy goals.

Requirements

1. The specific agency that is responsible for monitoring, measuring and evaluating should be determined.
2. Measurable performance items, methods, frequencies and timelines of the monitors, measurements and evaluations should be determined.
3. The contribution from changes in quantified performance should be assessed.
4. The degree of compliance of the target audience regulated by central and local governments should be assessed.

Outcomes and Consequences

1. The specific agency that implements the monitoring, measurement and evaluation of energy policies should be formally designated and announced.
2. Energy policy progress reports should include updates on monitoring, measurement, and evaluation as well as the degree of compliance of energy regulations between central and local governments.

Reference

1. ISO 17742:2015 Energy efficiency and savings calculation for countries, regions and cities
2. ISO 50049:2020 Calculation methods for energy efficiency and energy consumption variations at country, region and city levels

Policy Issue B

Energy Infrastructure

No.	Objectives	Category
B1	**Smart Energy Data Collection and Management Program:** this refers to assisting energy suppliers in introducing digital technologies for energy data collection, management and analysis to improve smart energy management plans.	**Prerequisites**
B2	**Renewable Energy Development and Application Program:** this refers to establishing local regulations, policies and plans to expand renewable energy development and use, as a way to reduce fossil fuel use within the jurisdiction of local governments.	**Prerequisites**
B3	**Energy-Efficient Street and Public Lighting Improvement Program:** this refers to importing high-efficiency lighting technology and improving public lighting efficiency.	**+ 5 Points**
B4	**Water Supply, Drainage and Wastewater Treatment Efficiency Program:** this refers to importing high-efficiency power pump technologies and improving the energy efficiency of water supply, drainage and wastewater treatment.	**+ 5 Points**
B5	**Energy Storage and Electric Vehicle Development and Application Program:** this refers to establishing local energy development regulations, policies and plans, as well as extending the development and implementation of renewable energy within a jurisdiction for reducing fossil fuel use and curtailing the electrical peak load.	**+ 5 Points**
B6	**Public Transportation Electrification Program:** this refers to establishing local development regulations, policies and plans to improve the development and implementation of electrified public transportation in order to reduce fossil fuel use.	**+ 5 Points**

B1

Smart Energy Data Collection and Management Program

■ Prerequisites ☐ Points

Objective

Assisting energy suppliers in introducing digital technologies for energy data collection, management and analysis to improve smart energy management plans.

Requirements

Local governments should collaborate with energy suppliers on smart energy metering programs; such programs should integrate energy demand side management in order to assist energy users to participate in demand response.

Outcomes and Consequences

Plans for smart energy data collection and management as well as progress reports should be formally disclosed.

B2

Renewable Energy Development and Application Program

■ Prerequisites ☐ Points

Objective

Establishing local regulations, policies and plans to expand renewable energy development, and use this as a way to reduce fossil fuel use within the jurisdiction of local governments.

Requirements

1. Voluntary or mandatory measures to assist energy users in establishing renewable energy facilities should be initiated and implemented to improve renewable energy technologies and development.
2. The renewable energy equipment recognition and audit mechanisms are to be established and adopted by central/federal/state governments to ensure the power quality and safety of renewable energy facilities.
3. The goal of renewable energy should be established and included as part of a qualified performance objective.

Outcomes and Consequences

Plans for improving renewable energy use as well as progress reports should be formally disclosed, and the following information should be included:

1. Established and implemented policies and measures
2. Estimated and actual installed capacity
3. Equipment recognition and audit progress and results should be established and adopted

Reference

ISO/IEC 13273-2 Energy efficiency and renewable energy sources — Common international terminology — Part 2: Renewable energy sources

B3

Energy-efficient Street and Public Lighting Improving Program

☐ Prerequisites ■ Points

Objective

Importing high-efficiency lighting technology and improving public lighting efficiency.

Requirements

1. Numbers, specifications and efficiency of street and public lighting should be collected and managed by local governments.
2. Local governments should establish lighting standards or adopt national, regional or international standards, and goals regarding high-efficiency lighting penetration rates should be established and included as part of a qualified performance objective.

Outcomes and Consequences

Plans for high-efficiency street and public lighting as well as progress reports should be formally disclosed, and the following information should be included:

1. Stock data of street and public lighting
2. High-efficient lighting standard used
3. The expected goal of penetration rates of high-efficiency lighting that local governments plan to achieve
4. Effectiveness of high-efficiency lighting penetration rates goal

Reference

ANSI/IESNA RP-8-14 Roadway Lighting

B4

Water Supply, Drainage and Wastewater Treatment Efficiency Program

☐ Prerequisites ■ Points

Objective

Importing high-efficiency power pump technologies and improving the energy efficiency of water supply, drainage and wastewater treatment.

Requirements

1. Numbers, specifications and efficiency of pumps for water supply, drainage and wastewater treatment should be collected and managed by local governments.
2. Local governments should establish high-efficiency pump standards or adopt national, regional or international standards, and the goals regarding high-efficiency pump penetration rates should be established and included as part of a qualified performance objective.

Outcomes and Consequences

Plans for high-efficiency water supply, drainage and wastewater treatment as well as progress reports should be formally disclosed, and the following information should be included:

1. Stock data of pumps for water supply, drainage and wastewater treatment
2. High-efficiency pump standards used
3. The expected goal of penetration rates of high-efficiency pumps that local governments plan to achieve
4. Effectiveness of high-efficiency pump goals

Reference

Energy Conservation Program: Energy Conservation Standards for Pumps, Department of Energy, USA

B5

Energy Storage and Electric Vehicle Development and Application Program

☐ Prerequisites ■ Points

Objective

Establishing local energy development regulations, policies and plans, as well as extending the development and implementation of renewable energy within a jurisdiction for reducing fossil fuel use and curtailing the electrical peak load.

Requirements

1. Voluntary or mandatory measures to assist energy users in establishing energy storage facilities and electric vehicle charging stations should be established and implemented to improve technology and development in energy storage and electrical vehicle systems.
2. The identification and audit systems of energy storage facilities and electric vehicle charging stations to ensure the quality and safety of the energy supply should be established and adopted.
3. Voluntary and mandatory measures to support energy users participating in electrical load management should be established and implemented, such as demand response and electricity trading.

Outcomes and Consequences

Plans for energy storage and electric vehicles charging stations as well as progress reports should be formally disclosed, and the following information should be included:

1. Established and implemented policies and measures
2. Estimated and actual numbers of installed capacity and charging stations
3. Equipment recognition and audit progress and results should be established and adopted

Reference

1. IEC 62933-5-2 Electrical energy storage (EES) systems - Part 5-2: Safety requirements for grid-integrated EES systems - Electrochemical-based systems
2. IEEE 1547 Standard for Interconnection and Interoperability of Distributed Energy Resources with Associated Electric Power Systems Interfaces
3. UL 9540 Energy Storage Systems and Equipment
4. UL 1741 Inverters, Converters, Controllers and Interconnection System Equipment for Use with Distributed Energy Resources

B6

Public Transportation Electrification Program

☐ Prerequisites ■ Points

Objective

Establishing local development regulations, policies and plans to improve the development and implementation of public transport electrification to reduce fossil fuel use.

Requirements

1. Number of public transport modes within the jurisdiction and its energy consumption by energy source should be collected and managed.
2. Voluntary or mandatory measures to assist public transportation operators in electrifying public transportation, as well as goals regarding penetration rate of electric vehicles should be established.

Outcomes and Consequences

Plans for electrifying public transport as well as progress reports should be formally disclosed, and the following information should be included:

1. Stock data of public transport within the jurisdiction
2. Public transport energy consumption sources by energy source
3. Established and implemented policies and measures
4. The expected penetration rate goal of electrifying public transport

Policy Issue C

Residential Policy

No.	Objectives	Category
C1	**Residential Energy Audit Program:** this refers to establishing a residential energy audit program to provide building owners with more accurate energy information to invest in energy efficiency and renewable energy, as well as improving the green energy industry and employment opportunities.	**Prerequisites**
C2	**Residential Energy Professional Capacity Building Program:** this refers to establishing residential energy professional capacity building for improving the base capacity and employment opportunities of the green construction industry.	**Prerequisites**
C3	**Low Income Energy Efficiency Program:** this refers to assisting low-income families and vulnerable groups in lowering energy expenditures and improving quality of life.	**+ 5 Points**
C4	**Existing Residential Building Energy Efficiency Program:** this refers to establishing an existing residential building energy efficiency plan to encourage residential owners to invest in energy efficiency to improve the employment opportunities of the green construction industry.	**+ 5 Points**
C5	**New Residential Building Energy Efficiency Program:** this refers to establishing a new residential building energy efficiency plan to encourage residential builders to invest in energy efficiency to improve the employment opportunities of the green construction industry.	**+ 5 Points**
C6	**Residential Demand Response and Time of Use Rates Program:** this refers to encouraging residential users to participate in Demand Response and Time of Use to achieve the goal of mitigating peak power load.	**+ 5 Points**

C1

Residential Energy Audit Program

■ Prerequisites ☐ Points

Objective

Establishing a residential energy audit program to provide building owners with more accurate energy information to invest in energy efficiency and renewable energy, as well as improving the green energy industry and employment opportunities.

Requirements

1. The stock data regarding residential buildings based on administration statistics should be collected and managed.
2. Residential building audit standards or guidelines for the energy audit program should be established or adopted based on existing standards. The standards or guidelines should assist the building owner, building manager or building occupier in analyzing energy consumption by energy source, identifying significant energy consumption, and identifying energy efficiency measures (EEM).
3. Professional requirements should be established or adopted from the central government or other international professional qualifications for professionals for implementing residential energy audit programs.

Outcomes and Consequences

Plans for the residential energy audit program as well as progress reports should be formally disclosed, and the following information should be included:

1. Stock data regarding residential buildings within the jurisdiction
2. Estimated and actual investigated numbers of buildings
3. Building energy audit standards established or adopted, such as ISO 50002:2014; ASHRAE 211 or other equivalency standards
4. Energy professional certification established or adopted, such as ASHRAE BEAP (Building Energy Assessment Professional Certification); AEE CEM (Certified Energy Manager) or other equivalency standards

Reference

1. ISO 50002:2014 Energy audits- Requirements with guidance for use
2. ANSI/ASHRAE/ACCA Standard 211-2018

C2

Residential Energy Professional Capacity Building Program

■ Prerequisites ☐ Points

Objective

Establishing residential energy professional capacity building for improving the base capacity and employment opportunities in the green construction industry.

Requirements

Residential energy professional capacity building programs should be established and implemented, and the regulations for "applicant qualifications," "course plan and content," "professional certification" and "incentive rewards" should be included in the program.

The training courses related to building energy issues should be established and implemented, the courses should include at least three themes: (1) Heating, Refrigeration, and Air-conditioning; (2) Lighting; (3) Water Heating; (4) Electrical Power Systems and Motors; (5) Measurement and Verification (M&V); (6) Demand Response; (7) Energy Rate; (8) Energy Technology Cost and Benefit Analysis; (9) Renewable Energy; (10) Green Buildings.

Outcomes and Consequences

Plans for professional capacity building in the residential energy industry as well as progress reports should be formally disclosed, and the following information should be included:

1. The number and list of trained residential energy professionals or people in training
2. Professional qualification recognition and retraining mechanisms

Reference

1. AEE Certified Energy Auditor (CEA) / Certified Energy Manager (CEM)
2. ASHRAE, Building Energy Assessment Professional (BEAP) Certification

C3

Low Income Energy Efficiency Program

☐ Prerequisites ■ Points

Objective

Assisting low-income families and vulnerable groups to lower energy expenditures and improve quality of life.

Requirements

1. The improvement program for energy-disadvantaged groups should be established and implemented, and the "applicant qualifications," "applicant resources" and "improvement items" should be included. The program aims to assist low-income families and disadvantaged groups in reducing energy expenditure while improving quality of life.
2. The program should provide resources to assist low-income families and disadvantaged groups in residential energy improvement, and prioritize improvement opportunities based on the resources of the plan.
3. If public financial resources are involved in such energy improvement work, a mechanism of Evaluation, Measurement and Verification should be established, and data related to energy should be provided to demonstrate energy performance improvements.

Outcomes and Consequences

Energy equity improvement plans for low-income groups as well as progress reports should be formally disclosed, and the following information should be included:

1. Estimated and actual affected number of households
2. The energy efficiency standards for facilities and productions adopted (if the improvement item involves facility work)
3. An energy evaluation, measurement and verification plan

Reference

1. ANSI/ASHRAE/IES Standard 90.1-2019
2. ANSI/ASHRAE/IES Standard 90.2-2018
3. IPMVP (International Performance Measurement and Verification Protocol)

C4

Existing Residential Building Energy Efficiency Program

☐ Prerequisites ■ Points

Objective

Establishing an existing residential building energy efficiency plan to encourage residential owners to invest in energy efficiency to improve the employment opportunities of the green construction industry.

Requirements

1. Voluntary or mandatory measures to assist existing buildings in improving energy efficiency for reducing residential energy expenditures and improving the quality of life should be established.
2. Mechanisms of Evaluation, Measurement and Verification should be established and implemented, and energy and climate data should be provided for demonstrating energy performance improvement.
3. If building energy simulations are to be used for energy performance evaluation, local climate data should be adopted wherever possible.
4. If public financial resources are involved in such energy improvement work, professional qualifications should be required of the installer.

Outcomes and Consequences

Plans for improving residential energy efficiency as well as progress reports should be formally disclosed, and the following information should be included:

1. Estimated and actual affected stock data regarding residential buildings or households
2. Established and implemented policies and measures
3. Energy efficiency standards for buildings, facilities, equipment and production (if the investment item is involved in the facility work), such as ANSI/ASHRAE/IES 90.1, or other green building standards or minimum energy performance standards
4. An energy evaluation, measurement and verification plan

Reference

1. ANSI/ASHRAE/IES Standard 90.1-2019
2. ANSI/ASHRAE/IES Standard 90.2-2018
3. IPMVP (International Performance Measurement and Verification Protocol)

C5

New Residential Building Energy Efficiency Program

☐ Prerequisites ■ Points

Objective

Establishing a new residential building energy efficiency plan to encourage residential builders to invest in energy efficiency to improve employment opportunities in the green building industry.

Requirements

1. Voluntary or mandatory measures to assist new buildings in improving energy efficiency to reduce residential energy expenditures and improving quality of life should be established.
2. Mechanisms of Evaluation, Measurement and Verification should be established and implemented, and energy and climate data should be provided in order to demonstrate energy performance improvement.
3. If building energy simulations are to be used for energy performance evaluation, local climate data should be adopted wherever possible in a principled way.
4. If public financial resources are involved in the energy improvement work, professional qualifications should be required of the installer.

Outcomes and Consequences

Plans for residential energy efficiency performance as well as progress reports should be formally disclosed, and the following information should be included:

1. Estimated and actual affected stocks of residential buildings
2. Established and implemented policies and measures
3. Energy efficiency standards for building, facilities, equipment and production (if the investment item is involved in the facility work), such as green building standards or minimum energy performance standards
4. An energy evaluation, measurement and verification plan

Reference

1. ANSI/ASHRAE/IES Standard 90.1-2019
2. ANSI/ASHRAE/IES Standard 90.2-2018
3. IPMVP (International Performance Measurement and Verification Protocol)

C6

Residential Demand Response and Time of Use Rates Program

☐ Prerequisites ■ Points

Objective

Encouraging residential users to participate in Demand Response and Time of Use Rate Programs proposed by energy suppliers to achieve the goal of reducing peak power load.

Requirements

The improvement plan, in collaboration with energy suppliers, should be established and implemented to encourage residential users to participate in the Demand Response and Time of Use Rate Program. This will produce multiple benefits such as relieving peak power strain, reducing cross subsidies, and balancing the power system.

Outcomes and Consequences

Plans for encouraging residential users' participation in the Demand Response and Time of Use Rate Program as well as progress reports should be formally disclosed.

Policy Issue D

Commercial Policy

No.	Objectives	Category
D1	**Commercial Energy Audit Program:** this refers to establishing a commercial energy audit program to provide building owners with more accurate energy information to invest in energy efficiency and renewable energy, as well as improving the green energy industry and employment opportunities.	**Prerequisites**
D2	**Commercial Energy Professional Capacity Building Program:** this refers to establishing commercial energy professional capacity building for improving the base capacity and employment opportunities in the green building industry.	**Prerequisites**
D3	**Commercial Energy Management System Program:** this refers to establishing a commercial energy management system to realize energy management of buildings.	**+ 5 Points**
D4	**Existing Commercial Building Energy Efficiency Program:** this refers to establishing an existing commercial building energy efficiency plan to encourage commercial owners to invest in energy efficiency in order to improve employment opportunities in the green construction industry.	**+ 5 Points**
D5	**New Commercial Building Energy Efficiency Program:** this refers to establishing a new commercial building energy efficiency plan to encourage commercial builders to invest in energy efficiency in order to improve employment opportunities in the green construction industry.	**+ 5 Points**
D6	**Commercial Demand Response and Time of Use Rate Program:** it refers to encouraging commercial users to participate in Demand Response and Time of Use programs proposed by energy suppliers to mitigate peak power load.	**+ 5 Points**

D1

Commercial Energy Audit Program

■ Prerequisites ☐ Points

Objective

Establishing a commercial energy audit program to provide building owners with more accurate energy information to invest in energy efficiency and renewable energy, as well as improving the green energy industry and employment opportunities.

Requirements

1. The program should collect and manage the stock data regarding commercial buildings based on administrative statistics.
2. The commercial building audit standards or guidelines for the energy audit program should be established or adopted based on existing standards. The standards or guidelines should assist the building owner, building manager or building occupier in analyzing energy consumption by source, identifying significant energy consumption, and identifying energy efficiency measures (EEM).
3. Professional requirements should be established or adopted from the central government or from other international professional qualifications for implementing commercial energy audit programs.

Outcomes and Consequences

Plans for the commercial energy audit program as well as progress reports should be formally disclosed, and the following information should be included:

1. Stock data regarding commercial buildings within the jurisdiction
2. Estimated and actual investigated numbers of buildings
3. Building energy audit standards established or adopted, such as ISO 50002:2014; ASHRAE 211 or other equivalency standards
4. Energy professional certification established or adopted, such as ASHRAE BEAP (Building Energy Assessment Professional Certification); AEE CEM (Certified Energy Manager) or other equivalency standards

Reference

1. ISO 50002:2014 Energy audits- Requirements with guidance for use
2. ANSI/ASHRAE/ACCA Standard 211-2018

D2

Commercial Energy Professional Capacity Building Program

■ Prerequisites ☐ Points

Objective

Establishing commercial energy professional capacity building to improve base capacity and employment opportunities in the green building industry.

Requirements

1. Institutional energy professional capacity building programs should be established and implemented, and the regulations for "applicant qualifications," "course plan and content," "professional certification" and "incentive rewards" should be included in the program.
2. The training courses related to building energy issues should be established and implemented, and the courses should include at least three themes: (1) Heating, Refrigeration, and Air-conditioning; (2) Lighting; (3) Water Heating; (4) Electrical Power Systems and Motors; (5) Measurement and Verification (M&V); (6) Demand Response; (7) Energy Rate; (8) Energy Technology Cost and Benefit Analysis; (9) Renewable Energy; (10) Green Buildings.

Outcomes and Consequences

Plans for professional capacity building in the commercial energy industry as well as progress reports should be formally disclosed, and the following information should be included:

1. The number and list of trained commercial energy professionals or people in training
2. Professional qualification recognition and retraining mechanisms

Reference

1. AEE Certified Energy Auditor/Certified Energy Manager
2. ASHRAE, Building Energy Assessment Professional Certification

D3

Commercial Energy Management System Program

☐ Prerequisites ■ Points

Objective

Establishing a commercial energy management system to realize energy management of buildings.

Requirements

Voluntary or mandatory measures to assist commercial building owners or managers in adopting ISO 50001 or energy management systems for assisting in the creation of energy management systems, and reducing the energy and carbon footprint according to metrics established by other countries, regions and international standards.

Outcomes and Consequences

Plans for establishing energy management systems for commercial buildings as well as progress reports should be formally disclosed, and the following information should be included:

1. Estimated and actual affected stock data regarding commercial buildings
2. Established and implemented policies and measures

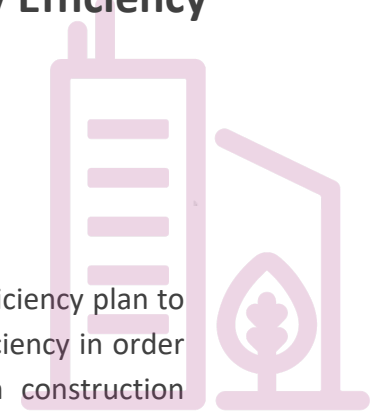
Reference

ISO 50001:2018 Energy management systems — Requirements with guidance for use

D4

Existing Commercial Building Energy Efficiency Program

☐ Prerequisites ■ Points



Objective

Establishing an existing commercial building energy efficiency plan to encourage commercial owners to invest in energy efficiency in order to improve employment opportunities in the green construction industry.

Requirements

1. Voluntary or mandatory measures to assist new buildings in improving energy efficiency to reduce commercial energy expenditure and improve enterprise competitiveness should be established. Mechanisms of Evaluation, Measurement and Verification should be established and implemented, and energy and climate data should be provided to demonstrate energy performance improvement.
2. If building energy simulations are to be used for energy performance evaluation, local climate data should be adopted in principle.
3. If public financial resources are involved in the energy improvement work, professional qualifications should be required of the installer.

Outcomes and Consequences

Plans for improving commercial energy efficiency as well as progress reports should be formally disclosed, and the following information should be included:

1. Estimated and actual affected stock data regarding commercial buildings
2. Established and implemented policies and measures
3. Energy efficiency standards for building, facilities, equipment and production (if the investment item is involved in the facility work), such as ANSI/ASHRAE/IES 90.1, or other green building standards or minimum energy performance standards
4. An energy evaluation, measurement and verification plan

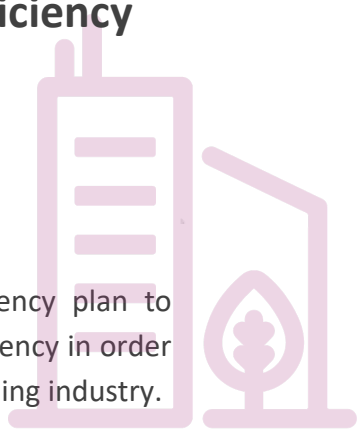
Reference

1. ANSI/ASHRAE/IES Standard 90.1-2019
2. ANSI/ASHRAE/IES Standard 100
3. IPMVP (International Performance Measurement and Verification Protocol)

D5

New Commercial Building Energy Efficiency Program

☐ Prerequisites ■ Points



Objective

Establishing a new commercial building energy efficiency plan to encourage commercial builders to invest in energy efficiency in order to improve employment opportunities in the green building industry.

Requirements

1. Voluntary or mandatory measures to assist new buildings in improving energy efficiency to reduce commercial energy expenditures and improve enterprise competitiveness should be established.
2. Mechanisms of Evaluation, Measurement and Verification should be established and implemented, and energy and climate data should be provided to demonstrate energy performance improvement.
3. If building energy simulations are to be used for energy performance evaluation, local climate data should be adopted in principle.
4. If public financial resources are involved in the energy improvement work, professional qualifications related to energy efficiency facilities and equipment should be required of the installer.

Outcomes and Consequences

Plans for commercial energy efficiency performance as well as progress reports should be formally disclosed, and the following information should be included:

1. Estimated and actual affected stock data regarding commercial buildings
2. Established and implemented policies and measures
3. Energy efficiency standards for building, facilities, equipment and production (if the investment item is involved in the facility work), such as green building standards or minimum energy performance standards
4. An energy evaluation, measurement and verification plan

Reference

1. ANSI/ASHRAE/IES Standard 90.1-2019
2. IPMVP (International Performance Measurement and Verification Protocol)

D6

Commercial Demand Response and Time of Use Rates Program

☐ Prerequisites ■ Points

Objective

Encouraging commercial users to participate in Demand Response and Time of Use programs proposed by energy suppliers to mitigate peak power load.

Requirements

The improvement plan to encourage commercial users to participate in the Demand Response and Time of Use program should be established and implemented in collaboration with energy suppliers to achieve multiple benefits such as relieving peak power strain, reducing cross subsidies, and balancing the power system.

Outcomes and Consequences

Plans for encouraging commercial user participation in the Demand Response and Time of Use program as well as the progress reports should be formally disclosed.

Policy Issue E

Institutional Policy

No.	Objectives	Category
E1	**Institutional Energy Audit Program:** this refers to establishing the institutional energy audit program for providing more accurate energy information to assist building managers in proposing plans regarding energy efficiency and renewable energy, as well as improving the green energy industry and employment opportunities.	**Prerequisites**
E2	**Energy Capacity Building Program for Public Officials:** this refers to establishing institutional energy management professional capacity building for improving base capacity and employment opportunities in the green building industry.	**Prerequisites**
E3	**Institutional Energy Management Systems Program:** this refers to establishing an institutional energy management system to realize the building's energy management.	**+ 5 Points**
E4	**Existing Institutional Building Energy Efficiency Program:** this refers to developing an institutional existing building energy efficiency plan to encourage institutional builders to invest in energy efficiency in order to improve employment opportunities in the green building industry.	**+ 5 Points**
E5	**New Institutional Building Energy Efficiency Program:** this refers to developing an institutional new building energy efficiency plan to encourage institutional builders to invest in energy efficiency in order to improve employment opportunities in the green building industry.	**+ 5 Points**
E6	**Institutional Demand Response and Time of Use Rate Program:** this refers to encouraging institutional users to participate in the Demand Response and Time of Use program proposed by energy suppliers to achieve the goal of mitigating peak power load.	**+ 5 Points**

E1

Institutional Energy Audit Program

■ Prerequisites ☐ Points

Objective

Establishing the institutional energy audit program for providing more accurate energy information to assist building managers in proposing plans regarding energy efficiency and renewable energy, as well as improving the green energy industry and employment opportunities.

Requirements

1. Existing data regarding institutional buildings should be collected and managed based on administrative statistics.
2. The institutional building audit standards or guidelines for the energy audit program should be established or adopted based on existing standards. The standards or guidelines should assist the Building Manager in analyzing energy consumption by source, identifying significant energy consumption, and identifying energy efficiency measures (EEM).
3. Professional requirements should be established or adopted from central governments or other international professional qualification standards when implementing institutional energy audit programs.

Outcomes and Consequences

Plans for the institutional energy audit program as well as progress reports should be formally disclosed, and the following information should be included:

1. Stock data regarding institutional buildings within the jurisdiction
2. Estimated and actual investigated number of institutional buildings
3. Building energy audit standards established or adopted, such as ISO 50002:2014; ASHRAE 211 or other equivalency standards
4. Energy professional certifications established or adopted, such as ASHRAE BEAP (Building Energy Assessment Professional Certification); AEE CEM (Certified Energy Manager) or other equivalency standards

Reference

1. ISO 50002:2014 Energy audits- Requirements with guidance for use
2. ANSI/ASHRAE/ACCA Standard 211-2018

E2

Energy Capacity Building Program for Public Officials

■ Prerequisites ☐ Points

Objective

Establishing institutional energy management professional capacity building for improving base capacity and employment opportunities in the green building industry.

Requirements

1. Institutional energy professional capacity building programs should be established and implemented, and the regulations for "applicant qualifications," "course plan and content," "professional certification" and "incentive rewards" should be included.
2. Training courses related to building energy issues should be established and implemented, and the courses should include at least three themes: (1) Heating, Refrigeration, and Air-conditioning; (2) Lighting; (3) Water Heating; (4) Electrical Power Systems and Motors; (5) Measurement and Verification (M&V); (6) Demand Response; (7) Energy Rate; (8) Energy Technology Cost and Benefit Analysis; (9) Renewable Energy; (10) Green Buildings.

Outcomes and Consequences

Plans for professional capacity building in the institutional energy industry as well as progress reports should be formally disclosed, and the following information should be included:

1. The number and list of trained institutional energy professionals or people in training within the jurisdiction
2. Professional qualification recognition and retraining mechanisms

Reference

1. AEE Certified Energy Auditor/Certified Energy Manager
2. ASHRAE, Building Energy Assessment Professional Certification

E3

Institutional Energy Management System Program

☐ Prerequisites ■ Points

Objective

Establishing an institutional energy management system to realize the building's energy management.

Requirements

Voluntary or mandatory measures should be established to assist institutional building owners or managers in adopting ISO 50001 or energy management systems in order to assist in the creation of energy management systems as well as reducing energy and carbon footprint under standards established by other countries, regions and international organizations.

Outcomes and Consequences

Plans for improving institutional energy management systems as well as progress reports should be formally disclosed, and the following information should be included:

1. Estimated and actual affected stock data regarding institutional buildings
2. Established and implemented policies and measures

Reference

ISO 50001:2018 Energy management systems — Requirements with guidance for use

E4

Existing Institutional Building Energy Efficiency Program

☐ Prerequisites ■ Points

Objective

Developing an institutional existing building energy efficiency plan to encourage institutional builders to invest in energy efficiency for improving employment opportunities in the green building industry.

Requirements

1. Mandatory measures should be established and implemented to assist existing institutional buildings in improving energy efficiency by reducing the financial burden of local government operations.
2. Mechanisms of Evaluation, Measurement and Verification should be established and implemented, and energy and climate data should be provided to demonstrate energy performance improvement.
3. If building energy simulations are to be used for energy performance evaluation, local climate data should be adopted whenever possible.
4. If public financial resources are involved in the energy improvement work, professional qualifications related to energy efficiency facilities and equipment should be required of the installer.

Outcomes and Consequences

Plans for improving energy efficiency of institutional existing buildings as well as progress reports should be formally disclosed, and the following information should be included:

1. Estimated and actual affected stock data regarding institutional buildings
2. Established and implemented mandatory policies and measures
3. If building energy simulations are to be used for energy performance evaluation, local climate data should be adopted whenever possible
4. Professional qualifications related to energy efficiency facilities and equipment should be required of the installer

Reference

1. ANSI/ASHRAE/IES Standard 90.1-2019
2. IPMVP (International Performance Measurement and Verification Protocol)

E5

New Institutional Building Energy Efficiency Program

☐ Prerequisites ■ Points

Objective

Developing an institutional building energy efficiency plan to encourage institutional builders to invest in energy efficiency to improve employment opportunities in the green building industry.

Requirements

1. Mandatory measures to assist existing buildings in improving energy efficiency by reducing the financial burden of local government operations should be established.
2. Mechanisms of Evaluation, Measurement and Verification should be established and implemented, and energy and climate data should be provided to demonstrate energy performance improvement.
3. If building energy simulations are to be used for energy performance evaluation, local climate data should be adopted whenever possible.
4. If public financial resources are involved in the energy improvement work, professional qualifications related to energy efficiency facilities and equipment should be required of the installer.

Outcomes and Consequences

Plans for improving energy efficiency of new institutional buildings as well as progress reports should be formally disclosed, and the following information should be included:

1. Estimated and actual affected stock data regarding institutional buildings
2. Established and implemented mandatory policies and measures
3. Energy efficiency standards for building, facilities, equipment and production (if the investment item is involved in the facility work), such as ANSI/ASHRAE/IES 90.1, or other green building standards or minimum energy performance standards
4. An energy evaluation, measurement and verification plan

Reference

1. ANSI/ASHRAE/IES Standard 90.1-2019
2. IPMVP (International Performance Measurement and Verification Protocol)

E6

Institutional Demand Response and Time of Use Rates Program

☐ Prerequisites ■ Points

Objective

Encouraging institutional users to participate in Demand Response and Time of Use programs proposed by energy suppliers to achieve the goal of peak power load mitigation.

Requirements

The improvement plan to encourage institutional users to participate in the Demand Response and Time of Use program should be established and implemented in collaboration with energy suppliers to achieve multiple benefits such as relieving peak power strain, reducing cross subsidies, and balancing power systems.

Outcomes and Consequences

Plans for encouraging institutional users to participate in the Demand Response and Time of Use program as well as progress reports should be disclosed.

Policy Issue F

Innovation and International Participation

No.	Objectives	Category
F1	**Innovative Energy Governance Measurement:** this refers to encouraging local governments to propose innovative energy governance.	**+ 5 Points**
F2	**International Energy and Climate Initiatives Participation:** this refers to encouraging local governments to participate in international energy and climate initiatives to promote cross-border exchange regarding energy policies.	**+ 5 Points**

F1

Innovative Energy Governance Measurement

☐ Prerequisites ■ Points

Objective

Encouraging local governments to propose innovative energy governance.

Requirements

1. Proposing and establishing innovative measurements regarding the different geographies and backgrounds that are not included in the guidelines: these measurements have a significant impact on improving energy efficiency and expanding renewable energy use.
2. Innovative measures include engineering technologies and management institutions: these measures should be proven to be directly beneficial to achieving local energy consumption and greenhouse gas reduction through quantified performance objectives.

Outcomes and Consequences

Plans for participating in local energy governance innovative measurements as well as progress reports should be formally disclosed, and the following should be included:

1. Estimated and actual number of affected buildings, households and population
2. An energy evaluation, measurement and verification plan

F2

International Energy and Climate Initiatives Participation

☐ Prerequisites ■ Points

Objective

Encouraging local governments to participate in international energy and climate initiatives to promote cross-border exchange regarding energy policies.

Requirements

Local governments should participate in city, community and local energy and climate policy initiatives proposed by international organizations, and these initiatives should have direct benefits for improving energy efficiency and developing renewable energy policies.

Outcomes and Consequences

Plans for participation in initiatives by international energy and climate organizations should be formally disclosed.

Reference

1. ISO 37120:2018, Sustainable cities and communities — Indicators for city services and quality of life
2. CDP-ICLEI Track
3. LEED for Cities and Communities
4. Global Covenant of Mayors for Climate & Energy (GCOM)

Glossary

Toward the goal of connecting the international green industrial market, this guideline quotes several glossary terms from the following international standards as below:

- ISO/IEC 13273-1 Energy efficiency and renewable energy sources — Common international terminology — Part 1: Energy efficiency
- ISO/IEC 13273-2 Energy efficiency and renewable energy sources — Common international terminology — Part 2: Renewable energy sources
- ISO 17742 Energy efficiency and savings calculation for countries, regions and cities
- ISO 50001:2018 Energy management systems — Requirements with guidance for use
- ISO 50049:2020 Calculation methods for energy efficiency and energy consumption variations at country, region and city levels
- ANSI/ASHRAE/ACCA Standard 211-2018 Standard for Commercial Building Energy Audits
- IEC 62933-1:2018 Electrical energy storage (EES) systems - Part 1: Vocabulary
- ISO 6469-3:2021(en) Electrically propelled road vehicles — Safety specifications — Part 3: Electrical safety

Terms	Definition	Resource
	Terms related to local governance	
Act, Code or Regulation	an act, code or regulation made by the government for specific objectives to serve as the basis for making and implementing public policy (A3, A6, B2, B5, B6)	LEGRS Guideline
Administrative Statistical Data	data which is based on official or survey statistics by central and local governments (C1, D1, E1)	LEGRS Guideline
Mandatory Measure	a measure proposed by the local government for end users in accordance with local regulations and orders (laws) that contributes to energy performance improvements and energy management (B2, B5, B6, C4, C5, D3, D4, D5, E3, E4, E5)	LEGRS Guideline
Policy	the intentions and direction of an organization, as formally expressed by its top governing body (All)	ISO 50001:2018

Terms	Definition	Resource
Terms related to local governance		
Program or Scheme	activities taken by governments which are based on legal acts, code and regulations (All)	LEGRS Guideline
Special Agency or Organization	an institution that implements energy regulations and policies in local government (A3, A6)	LEGRS Guideline
Stakeholders / Interested party	a person or group of people who directs and controls an organization at the highest level (A4)	ISO 50001:2018
Top Governance	a person or group of people who directs and controls an organization at the highest level (A3)	ISO 50001:2018
Voluntary Measure	a non-mandatory measure proposed by the local government for end users that contributes to energy performance improvements and energy management. Examples include direct investment, financial incentives, voluntary declaration by the public sector, and voluntary commitment by the private sector (B2, B5, B6, C4, C5, D3, D4, D5)	LEGRS Guideline

Terms	Definition	Resource
Terms related to stakeholder		
Commercial Building	buildings used for commercial activities (D1-D5)	LEGRS Guideline
Energy End User	individual or a group of individuals or organization with responsibility for operating an energy using system. According to different end-uses, it is subdivided into residential, commercial, institutional, industrial, and transport energy users (B1, B2, B5)	ISO/IEC 13273-1:2015
Energy Supplier	seller that offers energy to the end user (A1, B1, C6, D6, E6)	LEGRS Guideline
Installer	qualified person who can install the energy facilities and equipment. According to governmental rules and orders, as well as other international rules and requirements, different energy facilities and equipment should be installed by different qualified professionals, for example, air-conditioning equipment should be stalled by the air-conditioning equipment installation personnel; electrical equipment should be stalled by the electrical equipment installation personnel (C4, C5, D4, D5, E4, E5)	LEGRS Guideline

Terms	Definition	Resource
Terms related to stakeholder		
Institutional and School Building	buildings owned or used by the government for the public interest (E1-E5)	LEGRS Guideline
Public Transportation	transportation used for public transit, including buses, metro/subway, city buses and vessels (A3、B6)	LEGRS Guideline
Qualified Energy Professional	qualified professional who can identify and propose the opportunities for energy use system improvements. Please refer to the definition of "qualified energy auditor" in ASHRAE 211 (C1, D1, E1)	ANSI/ASHRAE/ACCA Standard 211-2018
Residential Building	buildings used for non-commercial activities (C1-C5)	LEGRS Guideline

Terms	Definition	Resource
Terms related to performance		
Audit	procedures established by the notary agency to conduct the second round of review under the standards related to specific products and services for ensuring quality (B2, B5)	LEGRS Guideline
Certification	activities that have been audited and recognized to meet specific professional requirements by a notary agency for specific professionals or organizations (C1, D1, E1)	LEGRS Guideline
Diffusion Indicator	the rate of specific energy techniques that are applied to the market. Example: the rate of high efficiency lighting technology used in street and public lighting (B3, B4, B6)	ISO 17742:2015
Energy Baseline	quantitative reference(s) providing a basis for comparison of energy performance **Note 1 to entry:** An energy baseline usually reflects a specified period of time. **Note 2 to entry:** An energy baseline can be adjusted using variables affecting energy use and/or consumption such as production level, degree days (outdoor temperature), etc. **Note 3 to entry:** With respect to energy performance, the definition for this International Standard only concerns energy efficiency. (A2)	ISO 17742:2015

Terms	Definition	Resource
Terms related to performance		
Energy Performance	measurable result(s) related to energy efficiency, energy use and energy consumption (C4、C5、D4、D5、E4、E5)	ISO 50001:2018
Energy Performance Indicator	measure or unit of energy performance, as defined by local governments (A2)	ISO 50001:2018
Evaluation	a review procedure that covers an entire policy and plan, including the effectiveness of implementing procedures, cost benefits, and objectives (A6, C3, C4, C5, D4, D5, E4, E5, F1)	LEGRS Guideline
Measurement	activities relating to collecting, monitoring and analyzing data related to the energy sector, and recording the performance of needed energy and the cost of planned policies and programs. Normally, such activities would take place during the planning or implementation phase of such policies and programs (A6, C2, C3, C4, C5, D2, D4, D5, E2, E4, E5, F1)	LEGRS Guideline
Monitor	a method for determining the norms, procedures and activities of a government's policy governance (A6)	LEGRS Guideline
Quantified Performance Indicator	a measurement unit established by local governments for energy and climate policies. Measurable performance indicators shall appropriately reflect the contributions made toward measurable performance objectives. Note: qualified performance indicator could be a renewable energy performance indicator, the capacity of renewable energy installations, or proportion of electrification of transport, etc. (A2, A6)	LEGRS Guideline
Quantified Performance Objective	qualified performance objectives established by the government for improving energy and climate policies (A2, A3, F1)	LEGRS Guideline
Recognition	procedures that have passed through the review process by the relevant agencies. The review process shall follow the standards established by notary agencies (B2, B5)	LEGRS Guideline

Terms	Definition	Resource
Terms related to performance		
Standard	rules, guidelines or character files related to the specific products and services proposed by notary agencies (A1, B3, B4, C1, C3, C4, C5, D1, D3, D4, D5, E1, E3, E4, E5)	LEGRS Guideline
Verification	data collected through the measurement process to confirm the contributions of policies and programs to the energy performance after implementation (A2, C2, C3, C4, C5, D2, D4, D5, E2, E4, E5, F1)	LEGRS Guideline

Terms	Definition	Resource
Terms related to requirement		
Can	Indicates a possibility or a capability (All)	ISO 50001:2018
Effectiveness	the extent to which planned activities are realized and planned results achieved (A2, A3)	ISO 50001:2018
Effectiveness	the extent to which planned activities are realized and planned results achieved (A2, A3, B3, B4)	ISO 50001:2018
May	Indicates a permission (All)	ISO 50001:2018
Shall	indicated a requirement (All)	ISO 50001:2018
Should	Indicates a recommendation (A4-A5)	ISO 50001:2018

Terms	Definition	Resource
Terms related to requirement		
Building Energy Modeling/ Building Energy Simulation	a physical-based software simulation of a specific building. It is used to evaluate the costs and benefits of importing energy efficiency measures for new and existing buildings (C4, C5, D4, D5, E4, E5)	LEGRS Guideline
Electrical Energy Storage (ESS)	installation able to absorb electrical energy, to store it for a certain amount of time and to release electrical energy during which energy conversion processes may be included (B6)	IEC 62933-1:2018
Electric Vehicle	electrically propelled vehicle with one or more electric drive(s) for vehicle propulsion	ISO 6469-3:2021

Terms	Definition	Resource
	Terms related to requirement	
Energy Audit/ Energy Diagnosis/ Energy Assessment	systematic analysis of energy use and energy consumption within a defined energy audit scope, in order to identify, quantify and report on the opportunities for improved energy performance (C1, D1, E1) **Note 1 to entry:** "Energy audit" is the normal expression in English, Energy Assessment expresses the same concept in other languages.	ISO 50002:2014
Energy Consumption	the quantity of energy applied. (All)	ISO 17742:2015
Energy Consumption by Source	types of energy-consuming products, such as coal, natural gas, petroleum, electricity, renewable energy, and heat. (A1, B6)	LEGRS Guideline
Energy Consumption Inventory	energy consumption-related statistical information that is based on the energy source and use established within a specific area. Sources of energy include coal, natural gas, petroleum, electricity, renewable energy, and heat. Energy users include the domestic, commercial, institutional, agricultural, industrial, and non-energy sectors (A1)	LEGRS Guideline
Energy Efficiency	ratio or other quantitative relationship between an output of performance, service, goods, commodities or energy and an input of energy (A5, B3, B4, C1, C3, C4, C5, D1, D4, D5, E1, E4, E5)	ISO 50049:2020
Energy Efficiency Measures (EEM) / Energy Conservation Measures (ECM)	actions taken to maintain and enforce security, comfort and performance through the reduction of energy use by building operations and equipment. Energy Efficiency Measures is also known as Energy Conservation Measures (ECM) (C1, D1, E1)	ANSI/ASHRAE/ACCA Standard 211-2018
Final Energy Consumption	energy consumption attributed to the end user, including the domestic, commercial, institutional, agricultural, industrial, and non-energy sectors (A1)	LEGRS Guideline
Energy Management System	a management system to establish an energy policy, objectives, energy targets, action plans and process(es) to achieve objectives and energy targets (D3, E3)	ISO 50001:2018

Terms	Definition	Resource
Terms related to requirement		
Energy Performance Improvement	energy efficiency improvements through technique, design and behavior changes (A2, C3, C4, C5, D4, D5, E4, E5)	LEGRS Guideline
Energy Renovation	renovation work related to helping end users to improve energy efficiency, including building renovations, air-conditioning, lighting, and power equipment (C3, C4, C5, D4, D5, E4, E5)	LEGRS Guideline
Minimum Energy Performance Standard (MEPS)	policy tools used by the government to establish minimum energy performance requirements for ensuring energy efficiency in energy-use production, equipment and construction in the market (C4, C5, D4, D5, E4, E5)	LEGRS Guideline
Significant Energy Use (SEU)	use items that significantly affect energy consumption of specific regions and organizations (A1, C1, D1, E1)	LEGRS Guideline

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