PERÚ | Ministerio de Energía y Minas

Directorate General for Energy Efficiency

Ministry of Energy and Mines

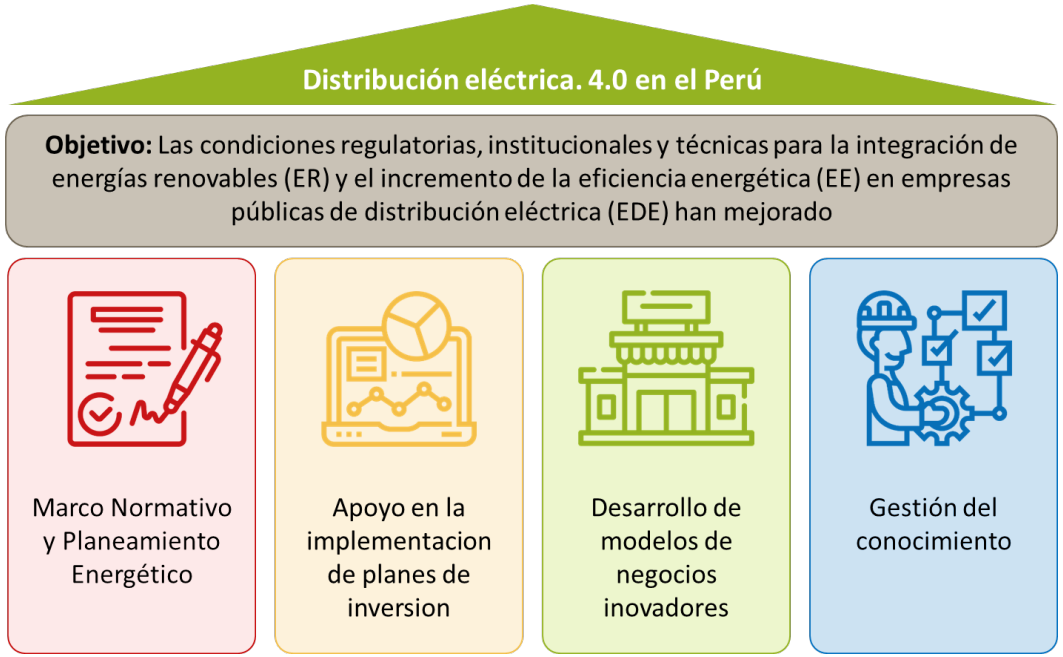

ENERGY EFFICIENCY

Current agreements (1/2)

PERÚ Ministerio de Energía y Minas

AGREEMENT WITH GIZ TO IMPLEMENT PROJECT DISTRIBUTION 4.0

- Purpose: implementation of the "Electricity Distribution 4.0" project, in order to improve the regulatory, institutional and technical guidelines of public electricity distribution companies to improve the integration of renewable energies and energy efficiency measures.



Tipo:	Cooperación Técnica no reembolsable
Contraparte política:	Ministerio de Energía y Minas
Contraparte ejecución:	MINEM, OSINERGMIN, FONAFE, EDEs seleccionadas
Ámbito de acción:	Ciudades
Contribución del Gobierno de Alemania:	4.000.000 EUR
Duración:	3 años (01/2020– 12/2024)

- ❑ The cycle of seven Webinars that has been developed within the framework of the project involving EDEs will end on Thursday 16.
- ❑ The consulting service is being developed to prepare the Plan for the Efficient Use of Energy by 2040.
- ❑ The Training Program "Transformation towards Smart Electric Grids in Electricity Distribution Companies" is developed, aimed at personnel in the electricity sector, especially EDEs

Current agreements(2/2)

PERÚ Ministerio de Energía y Minas

AGREEMENT WITH THE KOREA ENERGY AGENCY (KEA)

- Objective: to provide a framework to promote and develop cooperation between the Parties on energy efficiency, renewable energy, electric vehicles, technological innovation and climate change, through the implementation of related programs and / or projects and / or activities.

- Recently, through Ministerial Resolution N ° 306-2021-MINEM / DM, the donation of 16 LED lamps for Public Lighting was accepted that will be placed in the MINEM facilities.

AGREEMENT WITH BYD

➢BYD gives free use to MINEM of a BYD brand electric vehicle for a period of one year.

➢The electric vehicle will promote the benefits of using electric mobility and its charging infrastructure in a public entity, allowing its subsequent replicability.

AGREEMENT WITH ENELX

➢ENELX has donated a charging infrastructure for electric vehicles to MINEM.

➢The charging infrastructure for electric vehicles in a public entity will allow its subsequent replicability.

Energy efficiency (1/7)

ELECTRICAL ENERGY SUPPLY AND CHARGING INFRASTRUCTURE FOR ELECTRIC MOBILITY

Purpose: To approve provisions on the electric power supply and charging infrastructure for electric mobility, in order to make efficient use of energy.

Advances:

- Through Supreme Decree N022-2020-EM, provisions for the charging and supply infrastructure for electric mobility were approved

BATTERY CHARGING SERVICE (COMMERCIAL)

- Developed in public access spaces
- Osinergmin supervises and the municipalities supervise, compliance with technical and security conditions
- Operators take steps to ensure interoperability
- Owner of the charging infrastructure, guarantees that documents and plans are prepared and signed by a registered Electrician or Mechanic Electrician.
- The commercial conditions through which the CB service is developed; are modified by the Minem, by means of D.S. previous study by Osinergmin
- Supply acquired from the free or regulated market
- Commercial activity carried out under competitive conditions

PRIVATE BATTERY CHARGING (NON-COMMERCIAL)

- It is not commercial in nature, developed in private access spaces
- Owner of the charging infrastructure, guarantees that documents and plans are prepared and signed by a registered Electrician or Mechanic Electrician.

- For own consumption or within the facilities of the supply holder
- Obligation of the owner of the charging infrastructure to maintain its facilities for battery charging in optimal conditions.
- Given the existence of danger to the safety of people, the supply is cut
- Compliance with technical and safety standards

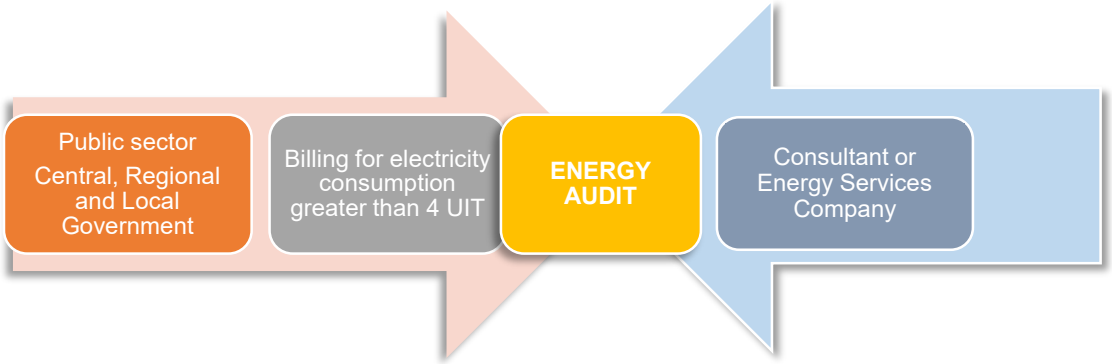
Energy efficiency (2/7)

PERÚ | Ministerio de Energía y Minas

CRITERIA FOR ENERGY AUDITS

Ministerial Resolution No. 186-2016-MEM / DM

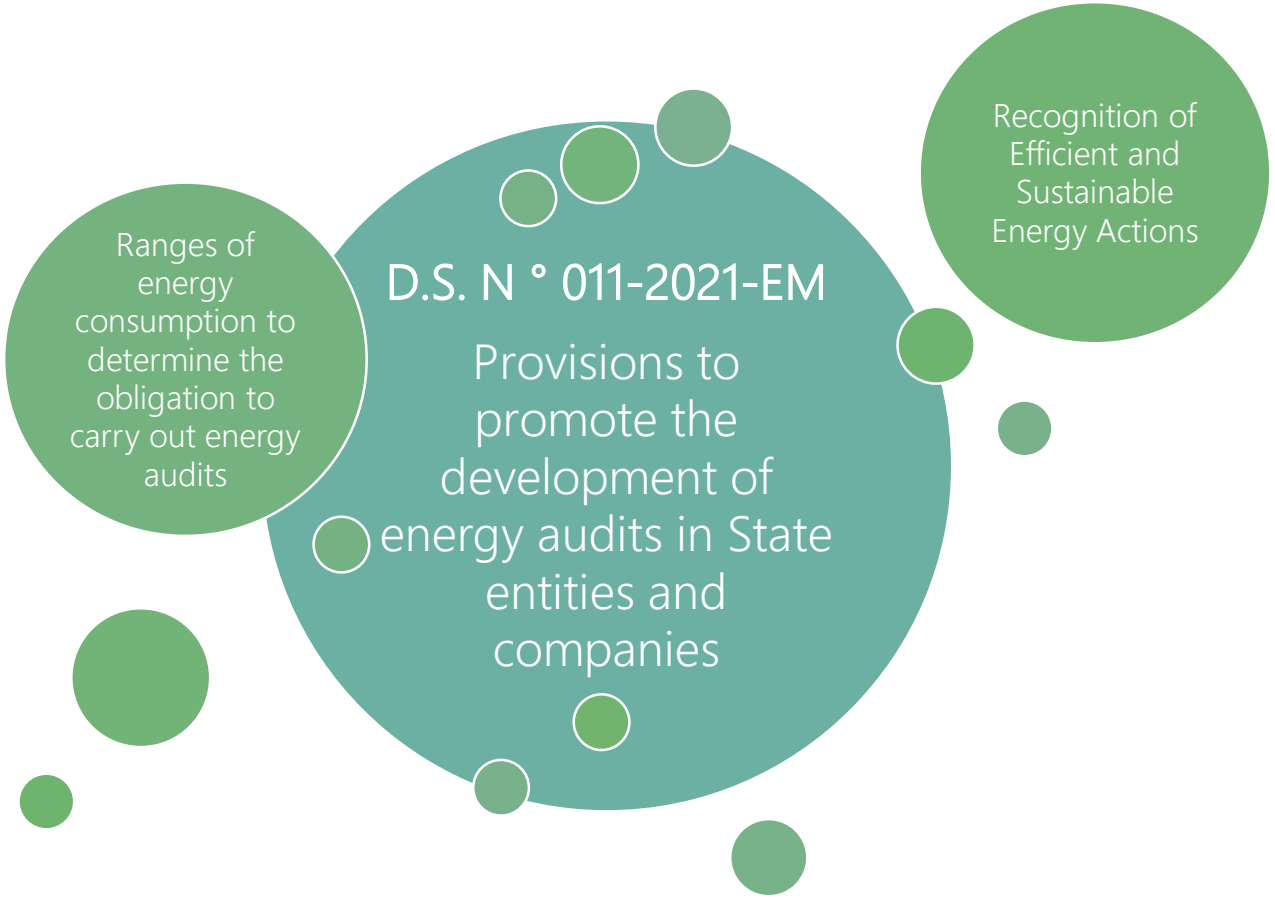
Approves the criteria for the preparation of energy audits to be carried out by Public Sector entities, whose monthly billing for electricity consumption is greater than 4 UIT.



Advances:

Through Supreme Decree No. 011-2021-EM, provisions are approved to promote Energy Audits, the purpose of which is to establish provisions for the development of energy audits and the certification of energy auditors, in order to promote efficiency in the use of energy. energy in State entities and companies, as well as in private companies, in order to help reduce energy consumption, reduce the emission of greenhouse gases and other pollutants, and comply with international commitments on environmental matters ratified by Peru.

Supreme Decree No. 011-2021-EM



Energy efficiency (3/7)

PERÚ | Ministerio de Energía y Minas

ENERGY EFFICIENCY LABELING FOR ENERGY EQUIPMENT

Classification system of energy equipment and devices that allow knowing their energy efficiency

Safeguard the legitimate right of consumers to stay informed about the energy efficiency of energy equipment, through the implementation of the energy efficiency label.

By which technical characteristics and energy efficiency ranges of nine families of energy equipment are established, which must be met for the production, importation and commercialization of said equipment.

Consumer protection
Information will be given on the Energy Efficiency Label so that the user can make a better decision at the time of purchase.

Energy security
Reduction of energy consumption and avoiding the construction of thermal power plants.

Environmental Protection
By having the reduction of energy consumption, the reduction of CO_2 emissions (avoided) will be achieved

Technological development
Improvement of business competitiveness, as well as updating energy equipment to the most efficient ones, such as LED lamps.

Advances:

- Through Supreme Decree No. 009-2017-EM, the Technical Regulation on Energy Efficiency Labeling for Energy Equipment was approved.
- On April 06, 2019, Supreme Decree No. 009-2019-EM was published; that approved the extension of deadlines for the enforceability of the Certificate of Conformity established in the Third Transitory Complementary Provision of the Technical Regulation on Energy Efficiency Labeling for Energy Equipment, approved with Supreme Decree No. 009-2017-EM

Energy efficiency (4/7)

PERÚ Ministerio de Energía y Minas

ENERGY EFFICIENCY IN THE PUBLIC SECTOR - DS 004-2016-EM

(….) 1.1. The entities and / or public companies to the extent that they require to acquire or replace energy equipment, they must be replaced or replaced by the most efficient technology that exists in the market at the time of purchase. For this purpose, the Ministry of Energy and Mines, through Ministerial Resolution, establishes the guidelines and / or technical specifications of the most efficient technologies for energy equipment, prior to the approval procedure provided for in the State Contracting Law. (…)

Advances :

- To date, we have 84 approved Homologation Sheets, among which are lamps, motors, washing machines, air conditioners, refrigerators and freezers, and public lighting fixtures.

APPROVAL PLAN - APPROVAL SHEETS

Through Ministerial Resolution No. 261-2021-MINEM / DM, on July 23, the update of the MINEM Homologation Plan was approved, which includes the following FH within the activities of the DGEEE:

APPROVAL SHEETS	STATE	APPROVAL DATE
06 Homologation sheets for automatic washing machines (New)	Approved by RM 286-2021-MINEM / DM	15/09/21
09 LED Panel Homologation Sheets (Update)	Pre-publication comments evaluation stage	30/09/21
07 LED Lamps Homologation Sheets (Update)	Elaboration stage	13/10/21
03 LED Tube Homologation Sheets (Update)	Elaboration stage	15/11/21

Activities in Energy Efficiency (5/7)

PERÚ Ministerio de Energía y Minas

SYSTEMS AND APPS IN ENERGY EFFICIENCY

- The DGEE has the Interactive Energy Efficiency System, on which we find ourselves requiring an update. Location: http://eficienciaenergetica.minem.gob.pe/
- The Energy Efficiency calculator has been developed; Likewise, the "Energy Calculator" APP has been developed, pending the Information Technology Office. Location: http://eficienciaenergetica.minem.gob.pe/calculadora/

- The Measurement, Reporting and Verification System (MRV) has been developed with the support of the NAMA; as well as the Platform for the Recognition of New and Sustainable Energy http://pad.minem.gob.pe/SISSELLO/
- On the other hand, the APP for Electric Transportation has been worked on, which is still in final validation

Activities in Energy Efficiency (6/7)

PERÚ | Ministerio de Energía y Minas

TECHNICAL COMMITTEES FOR STANDARDIZATION

The CTN UREEE began its activities in 1997. Currently, the DGEE is in charge of the Technical Secretariat. During the 2018-2021 period, 54 Peruvian normative documents were approved.

By 2021, among the SC of electric motors, refrigeration, air conditioning, washing machines and dryers, water heaters and lighting have been approved with the SC 11 PNTP that have been sent to INACAL.

In March 2019, INACAL installed the Technical Standardization Committee (CTN) for Electric Transportation, in order to develop Peruvian Technical Standards (NTP) for electric transportation vehicles. The Secretariat of the technical committee is the Directorate General for Energy Efficiency.

Between 2019 - 2020, 06 PNTPs were prepared that were sent to INACAL, and were approved as NTP

For 2021, 04 PNTPs have been proposed, of which 01 have been approved by INACAL as NTP

On September 3, 2021, INACAL installed the Technical Committee for the Standardization of Non-conventional Renewable Energies - ERNC and the sub-committee of photovoltaic systems in order to prepare the Peruvian Technical Standards - NTP for photovoltaic systems. The secretariat of the technical committee is located in the Directorate General for Energy Efficiency.

Energy Efficiency Awareness (1/2)

PERÚ Ministerio de Energía y Minas

FORMING A CULTURE ON THE EFFICIENT USE OF ENERGY

Within the framework of Law No. 27345 and the Regulation of the Law for the Promotion of the Efficient Use of Energy approved with Supreme Decree No. 053-2007-EM, Article 5, item 5.4, indicates that every October 21 is celebrated the National Day of Energy Saving. Institutionalized date in the civic school calendar by MINEDU.

In addition, the DGEE has an inter-institutional cooperation agreement with the Ministry of Education to carry out activities with this sector.

2021 Contest: "Efficient and responsible use of energy"

Categories:	Participants	Product	Thematic
A	Initial (5 years)	Drawing and painting (Free technique)	Practices for the Efficient and Responsible Use of Energy
B	Elementary (1st grade to 5th grade)	Elaboration of a comic strip (Free technique)	
C	High school	Advertising spot (video)	

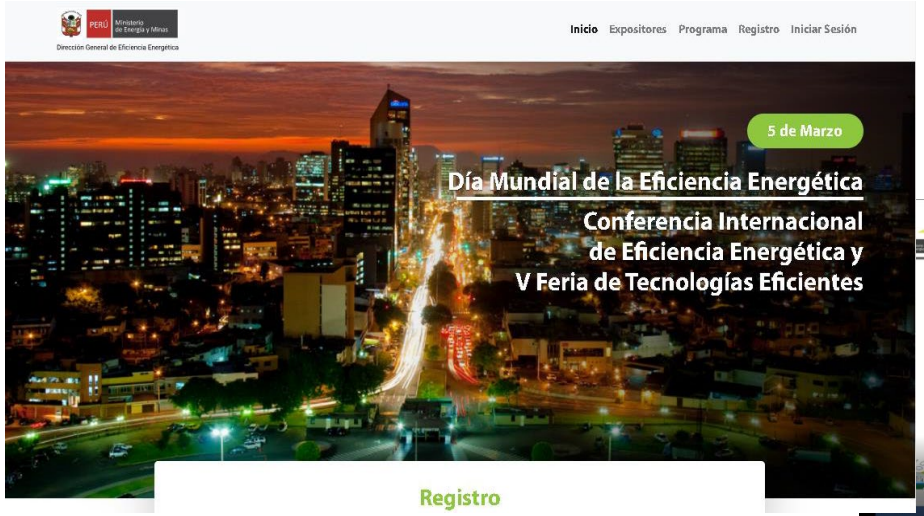
Continuous advance

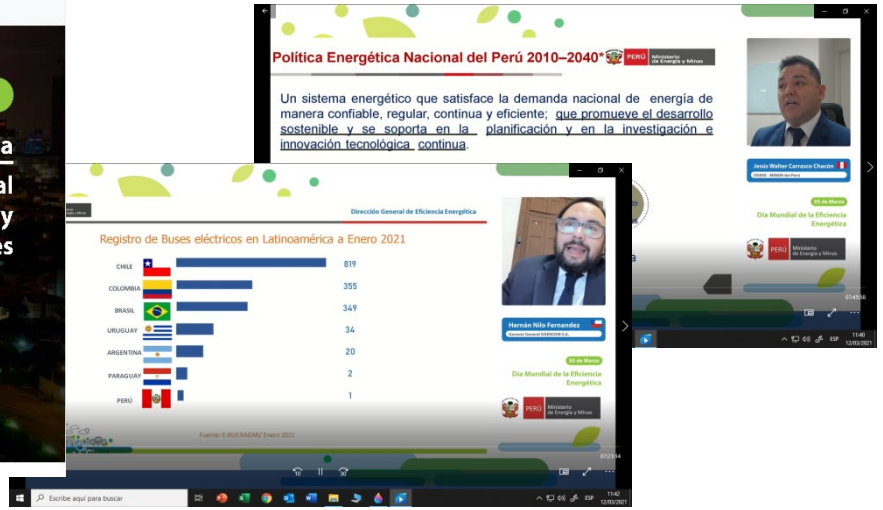
- Demonstration campaigns
- National energy saving day
- World Day of energy efficiency
- Talks on EE labeling, efficient use of energy and ISO 50001

Energy Efficiency Awareness (2/2)

VITUAL INTERNATIONAL CONFERENCE ON ENERGY EFFICIENCY 2021

14 speakers with different nationalities participated





Objective To publicize the importance of energy efficiency, promote a more sustainable society and the use of renewable energies.

Educate the population to generate a change of attitude in the use of energy, using it in a conscious, efficient and intelligent way, to achieve more for less; which will contribute to reducing the excessive use of natural resources.

TRAININGS IN THE REGIONS

Awareness-raising actions are carried out such as: talks, virtual conferences in the public and private sectors, and promoting the efficient use of energy, renewable energies and climate change. They also target the education sector, training teachers of all levels.

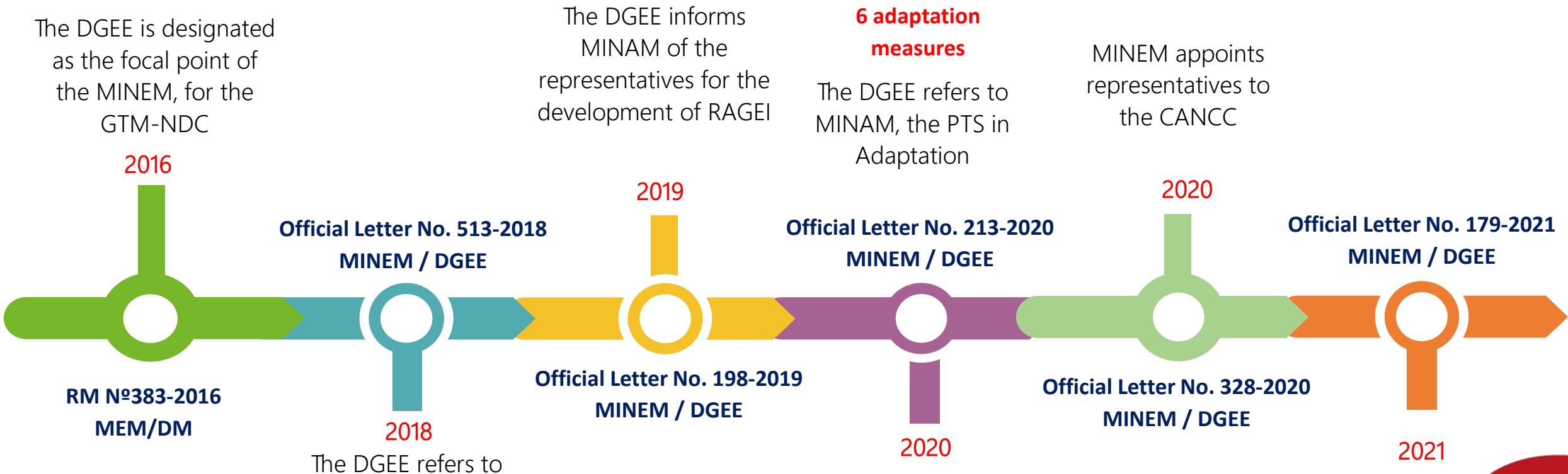
Likewise, with the OIIC, it develops message dissemination campaigns through social networks.


CLIMATE CHANGE

Climate change (1/3)

PERÚ | Ministerio de Energía y Minas

PARTICIPATION OF THE MINEM IN THE MANAGEMENT OF CLIMATE CHANGE



Climate change (2/3)

PERÚ | Ministerio de Energía y Minas

NATIONAL DETERMINED CONTRIBUTIONS

18 Mitigation Measures

It contributes a 21% (14.78 MtCO2eq) reduction of GHG emissions in 2030, with respect to the GHG emission reduction potential estimated by the GTM-NDC (2018).

Componente 1: Energías renovables — 4

- ECE 1 ▶ Combinación de energías renovables.
- ECE 2 ▶ Suministro de electricidad con recursos energéticos renovables en áreas no conectadas a la red.
- ECE 12 ▶ Generación distribuida.
- ECE 13 ▶ Reemplazo de calentadores eléctricos por calentadores solares de agua.

Componente 2: Transporte Sostenible — 2

- ECM 28 ▶ Promoción del Gas Natural Vehicular para vehículos livianos.
- ECM 30 ▶ Promoción de vehículos eléctricos a nivel nacional.

Componente 3: Eficiencia energética — 12

- ECM 29 ▶ Promoción del uso de combustibles más limpios.
- ECM 31 ▶ Promoción del gas natural licuefactado (GNL) para el transporte de carga del proyecto de masificación de gas natural.
- ECM 35 ▶ Etiquetado de eficiencia energética para vehículos livianos.
- ECE 3 ▶ Cogeneración.
- ECE 4 ▶ Transformación del mercado de iluminación en el sector residencial.
- ECE 5 ▶ Reemplazo de lámparas de alumbrado público de vapor de sodio de alta presión (VSAP) por lámparas LED.
- ECE 6 ▶ Etiquetado de eficiencia energética.
- ECE 7 ▶ Auditorías energéticas en el sector público.
- ECE 8 ▶ Reemplazo de lámparas de baja eficiencia por lámparas LED en el sector público.
- ECE 9 ▶ Cocción limpia (con responsabilidad compartida con el Ministerio de Inclusión y Desarrollo Social).
- ECE 10 ▶ Eficiencia energética en el sector industrial.
- ECE 11 ▶ Eficiencia energética en el sector comercial.

6 Adaptation Measures

- AGU 8 ▶ Promoción del desarrollo de infraestructura que reduzca la vulnerabilidad de la generación hidroeléctrica.
- AGU 9 ▶ Promoción de la implementación de infraestructura de protección en la generación, transmisión y distribución de electricidad ante los impactos de peligros asociados al cambio climático en cuencas Hidrográficas vulnerables.
- AGU 10 ▶ Implementación de buenas prácticas de uso eficiente de energía en los sectores económicos.
- AGU 11 ▶ Aprovechamiento eficiente de la hidroenergía en centrales hidroeléctricas ubicadas en cuencas vulnerables al cambio climático.
- AGU 12 ▶ Implementación de un servicio de soporte de decisiones (SSD) para el planeamiento energético en unidades hidrográficas con potencial hidroenergético y vulnerabilidad al cambio climático.
- AGU 31 ▶ **Diversificación de la matriz energética para reducir la presión sobre el recurso agua.**

Reduce the levels of vulnerability and risk associated with climate change in the availability of water for energy use.
Three (03) aspects are evaluated: Alteration of supply, increase in demand and comprehensive management of water resources

Climate change (3/3)

PERÚ Ministerio de Energía y Minas

Advances in Mitigation of the MINEM

1. The Monitoring, Reporting and Verification System (MRV) for 12 mitigation measures has been developed and hosted on the MINEM platform.
2. The non-renewable biomass fraction (fNRB) has been estimated at the national level, for the clean cooking measure. It is currently under review for validation by MINAM.
3. The modification of 4 homologation sheets for LED street lighting luminaires was approved
4. The Regulation Project for the installation and operation of the electric mobility charging infrastructure was published (RM 189-2021-MINEM / DM)
5. The emission factor for the electricity grid has been calculated for the 2010-2020 period for the mitigation measures for renewable energies and energy efficiency.
5. An application has been developed for the systematization and monitoring of public purchases, in order to know the use of the homologation sheets.
4. The Supreme Decree that approves the provisions to promote the development of energy audits was published (DS 011-2021-EM)
5. The list of OCP accredited with the Technical Regulation on Energy Efficiency Labeling was approved (RM 001-2020-MINEM / DGEE)
5. The MRV Protocol proposals have been developed for mitigation measures for the combination of renewable energies and energy efficiency labeling.

Advances in Adaptation of the MINEM

1. There is a proposal to update the indicators of the 6 measures of adaptation of water for energy use
2. Participatory workshops have been held in 10 prioritized regions for the analysis of the gaps and progress for the implementation of adaptation measures for water for energy use
3. A methodological and conceptual proposal is being developed for estimating the risk of the effects of climate change in three basins: Mantaro, Maure and Santa
4. Climate information and surveys of hydroelectric companies related to measures to adapt water for energy use are being identified and systematized.

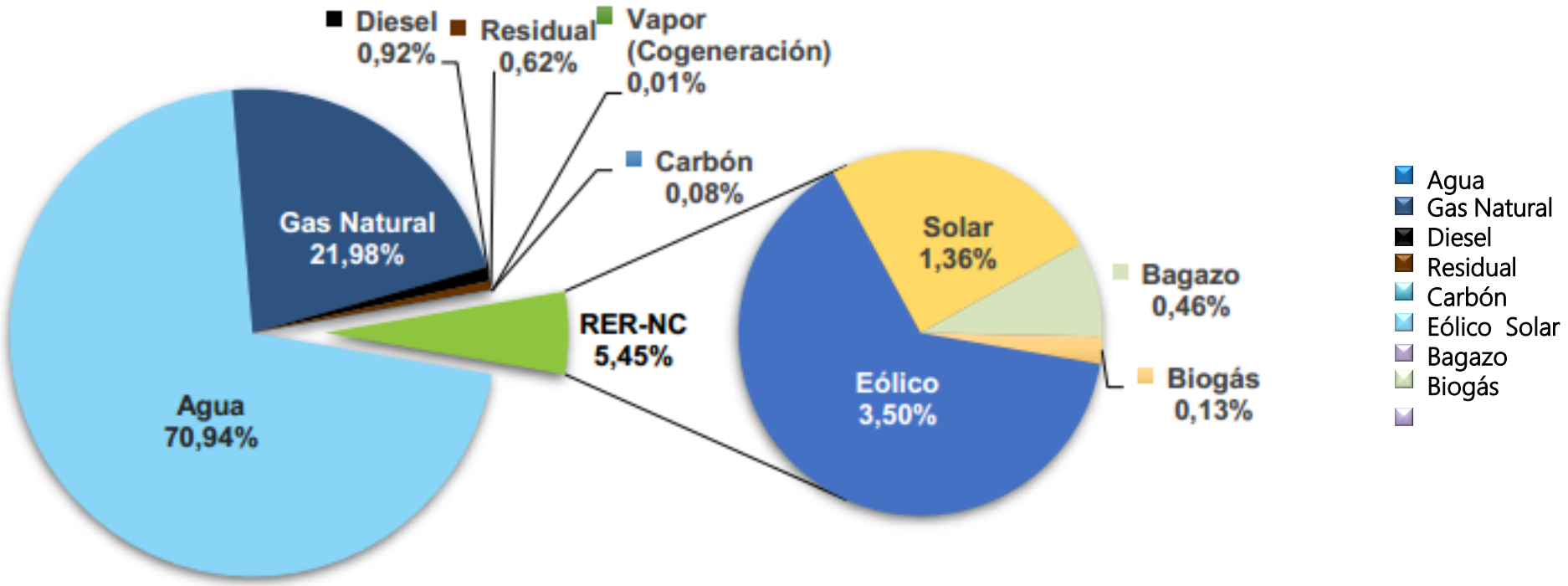

RENEWABLE ENERGY

Renewable Energy Activities (1/3)

PERÚ Ministerio de Energía y Minas

RENEWABLE ENERGY BULLETIN

The Renewable Energies Bulletin is prepared and published on a monthly basis, which provides information on the status of renewable energies, includes the evolution of the production of Non-Conventional Renewable Energies (RER NC) in the generator park (SEIN and Isolated Systems), which It has been developed in a sustainable way since 2010 within the framework of what is established by Legislative Decree No. 1002 and also details the monthly calculation of avoided CO2 emissions by type of generation.



Source: Renewable Energy Bulletin –April 2021- DGEE
http://eficienciaenergetica.minem.gob.pe//es-pe/pagina/boletin-mensual-de-energias-renovables

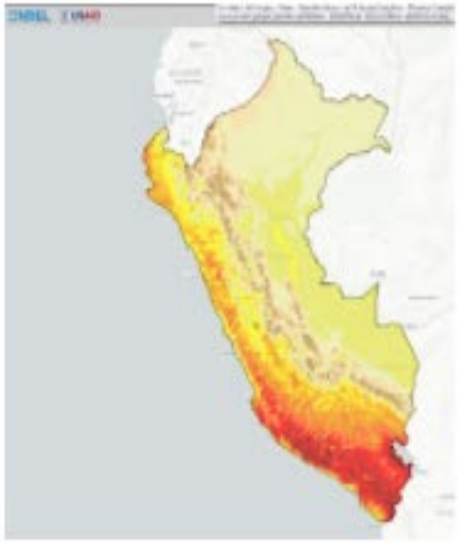
Renewable Energy Activities (2/3)

PERÚ Ministerio de Energía y Minas

INTERACTIVE TOOLS ON RENEWABLE ENERGIES

The General Directorate of Energy Efficiency has four interactive renewable energy tools, found in the Interactive Energy Efficiency System - SIEE, which aims to make information about the potential of energy resources available to the general public. It is proposed to centralize this information in a single computer platform.

Atlas eólico



Mapa interactivo de NREL

Mapa energético - minero

Mapa hidroeléctrico

Mapa hidroeléctrico
Cuencas Ucayali -Amazonas

http://namasenergia.minem.gob.pe/es-pe/pagina/herramientas-interactivas-sobre-el-potencial-de-energias-renovables

Renewable Energy Activities (3/3)

PERÚ | Ministerio de Energía y Minas

EMUJER - ENERGY SCHOOL FOR WOMEN - PILOT

eMujer is the Energetic School for Women that intervenes in rural areas seeking:

- Develop their capacities for the proper use, management and installation of energy technologies
- Transform their role as users into that of promoters of sustainable development
- Promote their entrepreneurship, employability and insertion in the sustainable energy technologies market.
- Contribute to their empowerment.
- Contribute to the reduction of local environmental pollution.

In its pilot phase eMujer trained more than 200 people

82%

18%

As a result of the article published in the newspaper El Comercio, conversations have begun with the Artisanal Gold Council Company, which seeks to support MINEM in the implementation of eMujer in a town in Madre de Dios with the development of the three modules of eMujer


PROJECTS IN PROGRESS

Energy Efficiency Standards in approval

PERÚ Ministerio de Energía y Minas

REGULATION OF INSTALLATION AND OPERATION OF CHARGING INFRASTRUCTURE FOR ELECTRIC MOBILITY

- Regulate the requirements for the correct design and construction of electric vehicle charging infrastructures.
- Generate a regulatory framework to guide entities in the creation of spaces for charging electric vehicles.
- Through R.M. N ° 189-2021-MINEM / DM (06.26.21) was published in the official newspaper El Peruano, for comments until 08.11.21.

APPROVAL SHEETS FOR LED PANELS (UPDATE)

- We are in the stage of consolidation and evaluation of comments from the different public and private entities made to the fifteen (15) LED Panel Homologation Sheets, which have already been pre-published.

Energy Efficiency Standards in preparation

PERÚ | Ministerio de Energía y Minas

MODIFICATION OF THE CRITERIA FOR THE DEVELOPMENT OF ENERGY AUDITS

Modify and update R.M. N ° 186-2016-MEM / DM "Criteria for conducting energy audits", which will include ranges of energy consumption to determine the obligation to carry out energy audits by State entities and / or companies.

ENERGY AUDITORS CERTIFICATION

Elaborate R.M. for certification competency requirements of natural persons empowered to carry out energy audits.

SELLO DE RECONOCIMIENTO DE ENERGÍA SOSTENIBLE

EFFICIENT AND SUSTAINABLE ENERGY RECOGNITION SEAL

Prepare guidelines for granting the recognition of efficient and sustainable energy actions.

MEPS REGULATION IN LIGHTING AND ENERGY EQUIPMENT WITH GREATER ENERGY CONSUMPTION

With the support of MINAM and GIZ, the support on MEPS for lighting was carried out, additionally working with a service in MINEM the MEPS for refrigerators, washing machines and air conditioning.

GUIDELINES FOR MONITORING, REPORTING AND VERIFICATION

Approve by R.M. the guidelines for Monitoring, Reporting and Verification (MRV) for the 12 mitigation measures of the NDCs and the procedure for reporting information on the energy audits carried out and the recommendations implemented, through the MRV system.

UPDATING THE RTEEE AND ENTERING NEW ANNEXES

Work is being done on the modification of the RTEEE Annexes and the entry of 10 new Annexes

ELECTRIC VEHICLE LABELING

Develop and approve the regulations corresponding to the energy efficiency labeling of vehicles that includes electric mobility.

Activities in Energy Efficiency in process

INCLUSION OF A DISTRIBUTION PROGRAM FOR LED LAMPS AND LIGHTS IN THE FISE PAP

Distribute 1.5 million LED bulbs and implement the public lighting program with 100,000 LED Lamps financed by FISE.

PLAN FOR THE EFFICIENT USE OF ENERGY BY 2040

It will contain actions and goals regarding energy efficiency, allowing the reduction of national energy consumption.

NEW BUILDING ENERGY EFFICIENCY CERTIFICATE

Establish, through a legal device, the incorporation of the Energy Efficiency Certificate in new buildings

ELECTRIC BUS PILOT PROJECT

Disseminate the results of the bus performance study, will allow planning future bus fleets and national programs and coordinate with MEF, MTC, ATU, MVCS, and MINAM to evaluate the proposal of incentives and regulations to promote electric transport

IDENTIFICATION OF ENERGY POTENTIALS

The Third Call for the Service to evaluate the energy potential of agricultural, forestry and agro-industrial biomass in Peru is in the logistics process; Thus, the service is also pending to determine the potential of CSP

CREATION OF THE ENERGY EFFICIENCY FINANCING FUND (FOFEE)

The FOFFE is a financial mechanism for the acquisition of efficient products, its objective is to promote the use of low consumption energy equipment, granting loans for a specific term, according to the profile and demand of the user.

Renewable Energy Activities in progress

PERÚ Ministerio de Energía y Minas

HYDROGEN GREEN

It has coordinated with the IDB to explore the possibility of an international agreement that allows knowing the potential of Hydrogen.

CONCENTRADE POWER SOLAR – CSP

As part of the studies and analysis with renewable energies, it has also been proposed to analyze the potential of solar radiation for the implementation of CSP projects in Peru.

REPLACEMENT PROGRAM OF CONVENTIONAL HEATERS BY SOLAR HEATERS

A service has been contracted that allows to search through renewable solar technology, and in areas that have potential, to replace conventional electric water heaters, in order to reduce energy consumption and the electricity billing of families and with it the reduction of energy intensity

SOLAR ROOFS PROGRAM IN PUBLIC BUILDINGS

We are developing a project for the implementation of distributed generation with photovoltaic systems on roofs in public buildings, to improve the efficiency and sustainability of generation in the public sector

Directorate General for Energy Efficiency

Ministry of Energy and Mines