Unofficial translation from Mongolian

Appendix to the Government resolution No 247 issued in 2017

NATIONAL ENERGY EFFICIENCY ACTION PROGRAM OF MONGOLIA

(2018–2022)

Article One. General Provision

Energy conservation and efficient use meets the global trends to enhance economic competitiveness, to increase production and productivity of works and services, to promote appropriate usage, to improve the comfort of the community`s living environment, and to appropriately use non-renewable natural resources.

The total installed electricity capacity of 8 combined heat and power plants of 1,161MW meets the majority of domestic energy demand. In 2016, peak load of the energy system reached 975 MW and 21% of energy demand was imported. The above facts demonstrates there is high risk of running short of energy resources.

The majority of combined heat and power plants, transmission and distribution networks were built between 1960-1980 and installed with outdated technology and equipment. The amount of electricity consumed for internal use is 1,5 times higher and the transmission and distribution loss is two folds higher than the world average. These facts demonstrate that the country needs to phase out low-efficiency energy generation and commit to implementing energy conservation policy.

Strengthening human resource capacity of the energy sector, taking regular measures to increase public awareness of energy conservation and information outreach, incorporation of energy efficient and cost-effective solutions in construction drawings, and comprehensive steps to reduce building heat loss are fundamentals for improving efficiency of the energy sector.

Therefore, this program has been developed within framework of the Clause 2.108 of the 2016-2020 Action Program of the Government of Mongolia that states “Specific measures, projects and programs shall be carried out to improve energy efficiency and reduce energy loss, and to introduce new innovative techniques and technologies” and in support of intensifying implementation of the “State Policy on Energy”, approved in 2015 under the Parliament resolution No 63, and the Energy Conservation Law of Mongolia.

Article Two. Purpose

2.1 Purpose

Purpose of the Program is to reduce GHG emission, mitigate climate change through integrated management of conservation and efficient use of energy, and to introduce and promote use of advanced energy efficient techniques and technologies.

Article Three. Program Objectives

3.1 The following common objectives will be achieved to implement the programme purpose:

- 3.1.1 Revise the legislative framework for regulation of the energy conservation activities;
- 3.1.2 Develop and apply management and information systems well aligned with energy efficiency activities and that promotes efficient use of the energy resources.;
- 3.1.3 Strengthen the human resource capacity vital for implementation of the energy efficiency policy
- 3.1.4 Increase energy conservation through improving energy efficiency of designated entities identified by the Energy Conservation Law of Mongolia;
- 3.1.5 Reduce GHG emissions and ensure the national commitments to the Paris Agreement, UN Framework Convention on Climate Change through improving efficiency of energy generation and consumption;
- 3.1.6 Sustain appropriate consumer behavior of energy through incorporating programs on energy conservation and efficiency into the curriculums of all-level educational institutions, and information outreach and public awareness;
- 3.1.7 Introduce energy-efficient technologies to streets, roads and squares of public use in phases;
- 3.1.8 Take comprehensive measures to reduce the energy consumption and increase energy efficiency of public and local organizations and other public agencies;
- 3.1.9 Design and enforce energy conservation policies for the aimags, Ulaanbaatar city, soums and districts;
- 3.1.10 Reduce internal use of electricity and specific fuel consumption of energy genereation;
- 3.1.11 Improve energy efficiency of transmission and distribution grids and reduce electricity and heating distribution losses;
- 3.1.12 Develop energy demand management;
- 3.1.13 Support energy conservation with appropriate tariff policy.

3.2 The following objectives will be achieved in construction, industrial and transportation sectors that are large energy users of the sector.

3.2.1 **Objectives to achieve in construction sector:**

- 3.2.1.1.1 Identify energy consumption rate of buildings and issue energy performance certificates;
- 3.2.1.1.2 Enforce implementation of energy efficient planning of construction sector, and advance monitoring system of the construction performance;

3.2.2 **Objectives to achieve in industrial sector:**

3.2.2.1 Define energy consumption norm per unit of production and services of industrial sector and reduce the energy consumption in phases;

3.2.2.2 Introduce innovative energy-saving techniques and technologies into production and service sector

3.2.3 **Objectives to achieve transportation sector:**

3.2.3.1 Design and implement policy to promote energy efficient vehicles with low impact to the environment;

Article Four. Activities to implement within framework of the program

4.1 The following activities will be conducted to achieve the objective to "Revise the legislative framework for regulation of the energy conservation activities":

4.1.1.Align legal documents of energy conservation and efficiency and other policy documents developed within the scope of these with other laws, legal documents and design corresponding standards, norms and normative and arrange enforcement of such documents;

4.1.2. Classify and label energy consumption, and adopt monitoring regulations;

4.1.3. Adopt and implement regulation to promote and provide incentives to individuals and entities constructed energy efficient buildings, produced and imported energy efficient machineries, equipment, goods and materials and demonstrated energy conservations;

4.1.4. Create legal environment to regulate institutional arrangements of professional institutions of energy efficiency, professional services and activities.

4.2 The following steps will be taken within the scope of the Objectives "to develop and apply the information systems interrelating the energy operations and promote energy-efficient consumption":

4.2.1. Create an information system of public and private entities demonstrating and promoting energy saving, interrelate their activities, and ensure normal and sustainable working environment of the entities and increase public awareness of such activities;

4.2.2. Develop and commission national information electronic system for consumers on energy conservation and efficient use of energy sources and enhance its coverage;

4.3 The following activities will be implemented to achieve the objective to "Strengthen the human resource capacity vital for implementation of the energy efficiency policy":

4.3.1. Develop training programs on energy conservation and prepare trainers and involve in professional training;

4.3.2. Train energy auditors and energy managers and involve in professional training programs

4.3.3. Develop training institutions to prepare energy auditors and energy managers and support their activities;

4.3.4. Strengthen capacity of engineers and technical staff to design and construct energy-efficient buildings and to improve production operation efficiency

4.4 The following activities will be carried out to achieve the objective to "Increase energy conservation through improving energy efficiency of designated entities identified by the Energy Conservation Law of Mongolia":

4.4.1 Carry out a feasibility study on providing soft loans to public and private entities, business entities, individuals in introducing energy efficient technologies, goods and services, and supporting through customs and tax policy and to incorporate findings of the feasibility study into relevant laws and regulatory documents;

4.4.2 Set up regulatory arrangements to ensure energy-efficient projects and measures have access to potential funding sources, and identify and deliver opportunities to get funding from international environment protection organizations;

4.5 The following activities will be implemented to achieve the objective to "Reduce GHG emission and ensure the national commitments to the Paris Agreement, UN Framework Convention on Climate Change through improving efficiency of energy generation and consumption"

4.5.1 Adopt and introduce the national methodology to define the energy balance of Mongolia;

4.5.2 Develop country-specific methodology to estimate GHG emissions of energy generation and consumption that are aligned with international standards and strengthen the national GHG inventory system;

4.5.3 Set up a national system for measurement, reporting and verification of the GHG emission reductions achieved from energy conservation and to develop an integrated database.

4.6 The following activities will be implemented to achieve the objective to "Incorporate subjects about energy saving and energy efficiency into the curriculums of educational institutions of all levels and promote energy efficient consumer habits through information outreach and public awareness":

4.6.1 Increase public awareness and disseminate information on the importance and value of energy efficiency, organize required trainings and set the national day of energy efficiency;

4.6.2 Take measures to incorporate subjects about efficiency and appropriate use of energy resources into curriculums of secondary schools;

4.6.3 Set up an exhibition centre to promote energy efficient buildings, equipment and technologies and ensure consumers are provided with relevant information on regular basis.

4.7 The following activities will be implemented to achieve the objective to "Introduce energy-efficient technologies to streets, roads and squares of public use on gradual basis":

4.7.1 Replace current lightings of streets, roads, squares and public-use areas with energy-efficient lighting on a gradual basis;

4.7.2 Set and enforce energy efficiency requirements for lighting for newly planned streets, roads and squares;

4.7.3 Promote the phase out ofincandescent lamps.

4.8 The following activities will be implemented to achieve the objective to "Take comprehensive measures to reduce energy consumption and increase energy efficiency of public and local organizations and other public agencies":

4.8.1 Set up structural arrangements to allocate annual savings from energy conservation into commitments to improve efficiency of energy uses;

4.8.2 Set criteria to have goods, works, services, and equipment purchased are energy efficient and have low-maintenance costs pursuant to the Law of Mongolia on Procurement of Goods, Works and Services with State and Local Funds.

4.9 The following activities will be carreid out to achieve the objective to "Design and enforce energy conservation policies for the aimags, Ulaanbaatar city, soums and districts":

4.9.1 Idenfity energy efficiency policy for specific administrative units and territories and ensure such policies are incorporated into long-term strategies and major directions of socio-economic developments of aimags and the capital city, and implemented;

4.9.2 Allocate certain share of the projects and measures funded from local development funds into measures promoting energy efficiency;

4.10 The following activities will be implemented to achieve the objective "Reduce internal use of electricity and specific fuel consumption of energy generation":

4.10.1 Define utilization rate of technological phases, and equipment regimes and shift to digital system of management and monitoring in stages, and take measures to improve efficiency rate;

4.10.2 Determine and reduce actual specific fuel consumption of power and heat generation;

4.10.3 Take measures to reduce steam and water loss of combined heat and power plants.

4.11 The following activities will be implemented to achieve the objective to "Improve energy efficiency of transmission and distribution grids and reduce electricity and heating distribution losses":

4.11.1 Transfer the management, monitoring and information systems of the energy transmission, distribution and supply to a digital system in phases and ensure an effective structure for regime regulation is set;

4.11.2 Introduce innovations and advanced technology into the energy sector;

4.11.3 Improve the economic efficiency of integrated planning, regime, and dispatching for power and district heating systems.

4.12 The following activities will be implemented to achieve the objective to "Develop energy demand management":

4.12.1 Take technical, economic and regulatory measures to adjust power load fluctuations of the integrated system of energy in stages;

4.12.2 Create and enforce a legal environment for regulating relationships of supplying energy generated from renewable sources into the distribution grid

4.12.3 Carry out adjustments to the heating system of residential buildings connected to district heating systems in Ulaanbaatar, Darkhan-Uul and Orkhon aimags, and ensure all energy consumers are installed with heat meters;

4.12.4 Improve quality of energy supplied to end-users.

4.13 The following activities will be carried out to achieve the objective to "Support energy conservation with tariff policy":

4.13.1 Estimate actual costs of the heat energy and implement tariff reform in phases;

4.13.2 Phase out completely the current payment structure of the energy sector that estimates heat consumption of entities and residential buildings by premise volume and area, and power consumption of households by number of people or fixed rate through promoting use of metering measures;

4.13.3 Upgrade operational efficiency of energy generation, transmission, distribution, supply and dispatching regulation, and set up structure to offer incentives for achieved energy conservations;

4.13.4 Implement tariff policy that promotes and supports individuals, economic entities and institutions that achieved energy conservation through increasing energy efficiency;

4.14 The following activities will be implemented to achieve the objective to "Identify energy consumption rate of buildings and issue energy performance certificates":

4.14.1 Develop methodologies to calculate energy consumption rate of buildings;

4.14.2 Identify and promote national criteria for energy-efficient and green (passive) buildings;

4.14.3 Carry out energy audit at construction sector in phases and identify energy consumption level and arrange issuance of labelling and certificates;

4.14.4 Label construction materials and goods based on the certificates of origin and laboratory analyses;

4.14.5 Reduce the heat loss of apartments and develop a program of financial leverage and green mortgages in order to support energy conservation.

4.15 The following activities will be implemented to achieve the objective to "Enforce implementation of energy efficient planning of the construction sector, and advance monitoring systems for construction performance:

4.15.1 Update the norms of buildings in regard to energy efficiency and ensure consistency with international standards;

4.15.2 Take measures to ensure estimations, parameters and conclusions of energy conservation and efficiency measures are included into the list of documents to provide at stages of monitoring of construction process and commissioning

4.15.3 Identify types of buildings to retro-fit immediately and implement measures to reduce building heat loss by 20% in phases

4.16 The following activities will be implemented to achieve the goal to "Define energy consumption norms per unit of production and services of industrial sector and reduce the energy consumption in phases":

4.16.1 Carry out a study on energy consumption per unit production of goods and services and implement measures to normalize in phases;

4.16.2 Provide producers and service providers with necessary information and recommendations on how to introduce energy conservation and efficient technologies on a regular basis.

4.17 The following activities will be implemented to achieve the objective to "Introduce innovative and efficient techniques and technologies of energy into production and service sectors"

4.17.1 Identify the needs for introducing equipment and machinery with the lowest energy consumption in production and business activities and enforce into practice;

4.17.2 Introduce MNS ISO-50001:2014 Energy Management System Standard in phases.

4.18 The following activities will be implemented to achieve the objective to "Design and implement policy to promote use of energy efficient vehicles with low negative impact to the environment;

4.18.1 Increase use of gas and combined fuel in auto transportation sector and to provide policy support in promoting vehicles of low level of fuel consumption;

4.18.2 Increase share of electric vehicles in public transportation sector and to introduce vehicles that operate with fuel of low adverse environmental impact

Article Five. Timeline of Program

5.1.Program will be implemented between 2018 and 2022.

Article Six. Outcomes and target indicators of the Program

6.1 The following outcomes will be achieved upon implementation of the program.

6.1.1 Comprehensive legal environment to regulate energy efficiency activities will be established

6.1.2 Synergy of energy efficiency policies and implementation activities are achieved.;

6.1.3 Opportunities to introduce and use advanced, energy-efficient and environmentally-friendly technics and technologies are created.

6.1.4 Favorable conditions to implement measures promoting public education towards efficient use of energy and consumer behavior to save and appropriately use energy are developed.

6.1.5 Environmental pollution and GHG emission from energy generation and consumption are reduced.

6.2. The following target indicators will be used to evaluate implementation of the Program and year-end results of 2016 will be used as baseline:

№	Indicators	Unit	Baseline	Target
			2016	2022
Revise legislative framework for regulation of the energy conservation activities				
1	Entities and organizations that implemented energy classification, grading and labelling, and monitoring regulation	Number	0	5
2	Professional organizations providing energy efficiency services	Number	0	10
3	Accrediated energy auditing entities	number	0	15
4	Entities introduced MNS ISO-50001:2014 standard	number	0	70
5	Entities certificated for implementation of MNS ISO-50001:2014 standard	number	0	5
Strengthen human resource capacity required for implementation of energy conservation policy				

6	Trainers and instructors to provide lessons within framework of energy conservation training program	Number	56	100
7	Authorized energy auditors and energy conservation manager	Number	Auditor -0 Manager -23	Auditor -100 Manager-200
8	Engineers and technical staff attended technical training on planning and implementing energy efficiency building designs and executions	Number	0	60
9	Engineers and technical staff attended technical training on efficiency improvement of energy generation, transmission and distribution	Number	0	60
10	Educational institutes to prepare personnel in the field of energy efficiency	Number	1	3
Reduce energy consumption of designated entities by by 10 percent				
11	Energy use reduction of designated entities that exceed the government threshold on energy use	Percent	0	10
12	Entities conducted energy audits	Number	0	127
Improve technical and economical indicators energy generation				
13	Reduction of internal energy use of energy generation	Percent	13.87	11.87
14	Reduction of specific fuel consumption per unit of power generation	g/kWh	312.5	305.5
15	Reduction of specific fuel consumption per unit heat generation	kg/kcal	175.9	170
Increase technical and economical indicators of energy transmission and distribution				
16	Reduction of power transmission and distribution losses	Percent	15.7	13.7
17	Reduction of UB city heat distribution losses	Percent	13.3	12.3
Develop Energy Demand Management				
18	Installation rate of meters at residential buildings connected to the district heating systems of Ulaanbaatar, Darkhan-Uul and Orkhon provinces	Percent		50
19	Average duration index of power outage of the system	Hour	54	44

20	Tariff policy promoting energy conservation	-	Less than Actual cost	Covers actual cost and tariff regulation for supporting energy conservation
21	Buildings certified and labelled with building energy performance	Number	0	50
22	Entities manufacture labelled construction materials	Number	0	50
Design and implement policy to promote use of energy efficient vehicles with low negative impact to the environment				
23	Autotransportation vehicles with gas engine	Percent	1,73	2,3
24	Autotransportation vehicles with hybrid engine	Percent	11,56	21
Disseminate information and knowledge about conservation and efficient use of energy, and create appropriate use of energy				
25	Teachers and managers trained to teach energy subject to secondary schools	Number	0	100
26	Exhibition centre for energy efficient buildings, , equipment and technologies	Number	0	2
Increase share of using energy-efficient lightings for streets, roads and squares of public use				
27	Streets, roads and squares with energy-efficient lightings	Percent	-	80
Design and implement energy conservation policies for local administrative units and regions				
28	Energy conservation policy of aimags, capital city and local administrative units	-	-	energy conservation policy is incorporated into long and mid-term development policies of 21 aimags and the capital city
29	Share of funds allocated to energy saving activities atlocal development fund	percent	0	5 per year
Overall results of activities taken in the field of energy efficiency at the national level				
30	CO2 emission reduced as a result of program implementation	Million tons	0	0,6

Article Seven. Sources and required amount of funding for the program implementation

7.1. Program activities will be funded from the following sources:

7.1.1. State and local budgets;

7.1.2. Loans, financial aids and funding of projects and programs of the international organizations and donor countries;
7.1.3. Funds of economic entities and institutions;
7.1.4. Soft loans of banks and finance institutions;
7.1.5. Funding and investments from international environmental protection funds;
7.1.6. Other sources

Article Eight. Management and Organization of the Program

8.1. Energy Conservation Council (ECC) will be responsible for the nationwide implementation of the program, ensure synergy of the inter-sectorial activities, provide integrated management, and monitoring and evaluation of the program implementation.
8.2. Governors of all stages in association with the Rural Regulatory Council and the Energy Conservation Council will manage the program implementation at the local level and monitor the implementation.

Article Nine. Monitoring and evaluation of the program implementation

9.1. The Energy Conservation Council jointly with representatives of professional associations, non-governmental organizations shall conduct monitoring and evaluation of the program implementation.
9.2. Governors of all stages in association with the Rural Regulatory Council and the Energy Conservation Council shall conduct monitoring and evaluation on implementation at the local levels and deliver reports to the Energy Conservation Council.
9.3. The Energy Conservation Council shall prepare a report on the program implementation and present to the Government by end of the first quarter of every year.
9.4. Based on findings and recommendations of the progress monitoring and evaluation, amendments and revisions can be made to the action plan, target indicators of the national programme.