

<div>Lao PDR</div> <div>EE&C Policy and Support Measures Towards Carbon Neutrality</div>	
1. Climate Change Initiatives	
	1-1. Name of the initiatives, competent ministries/agencies, and the outline of the initiatives
	<div> <div></div> <div>Increase the use of electric vehicles for motorcycles and cars to 30% by 2030 compared to the total number of vehicles in the country</div> </div>
	1-2. Specific contents of the climate change initiatives
	<div> <div></div> <div>In 2023, Laos has a total power generation capacity amont 11,692.14 MW. By the hydro covered 82.36%, Coal covered 16.06%, Biomass covered 0.96% and Solar is 0.62%. It showed that the RE is 83.94% of total power generation capacity. The total electricity production is amont 48,702 GWh (Hydro 74.95% or 36,504 GWh, Coal 24.8% or 12,077 GWh, Solar 0.19% or 94 GWh and Biomass 0.06% or 27 GWh, in respectively)</div> </div>
	1-3. Laws/regulations related to climate change measures, by name and year of introduction/revision
	1-4. Climate change action targets (NDC)
	<div> <div></div> <div> <ul style="list-style-type: none"> - Net zero emissions by 2050 - In 2017, Laos signed a Memorandum of Understanding with Russia to build a nuclear power plant. </div> <div></div> <div>[Goals toward carbon neutral.</div> <div> <ul style="list-style-type: none"> - Unconditional: 60% GHG emissions reduction by 2030, or approximately 62,000 ktCO2e in absolute terms (BAU basis) - Unconditional: 13 GW total domestic hydropower capacity (domestic and for export) by 2030 - Unconditional: 50,000 energy efficient cook stoves by 2030 - Conditional: Total installed solar and wind capacity in the country to be 1 GW by 2030 - Conditional: Total domestic biomass installed capacity to be 300 MW by 2030 - Conditional: 10% reduction in final energy consumption by 2030 (BAU basis) - By 2025, renewable energy will account for 30% of energy consumption. - Unconditional: Reduce LUCF emissions by an average of 1,100 ktCO2e per year between 2020 and 2030 - Conditional: Increase forest cover to 70% of land area (i.e., 16.58 million hectares) by 2030. - Conditional: 30% penetration of electric vehicles among domestic motorcycles and passenger cars by 2030 - Conditional: 10% of transportation fuels to be biofuels by 2030 (transportation sector by 2025) - Conditional: Implementation of a 500 ton/day sustainable municipal solid waste management project by 2030. </div> </div>
	1-5. Budgetary measures for climate change initiatives
2. Measures toward Carbon-Neutral	
	2-1. Carbon tax initiatives
	<div> <div></div> <div>N/A</div> </div>
	2-2. Carbon credit and carbon trading initiatives
	<div> <div></div> <div>N/A</div> </div>
	2-3. Trend of new technologies for climate change measures
	2-3-1. Hydrogen
	<div> <div></div> <div>In 2021, Laos exported \$12.5M in Hydrogen, making it the 46th largest exporter of Hydrogen in the world. Laos imported \$3.94M in Hydrogen, becoming the 89th largest importer of Hydrogen in the world</div> </div>
	<div> <div></div> <div>targets for Green Hydrogen:</div> </div>
	2-3-2. Fuel ammonia
	<div> <div></div> <div>Lao Deputy Minister of Energy and Mines ChansaVath Bounpha has affirmed that energy transition with the use of hydrogen ammonia energy as</div> </div>
	<div> <div></div> <div>targets for Green Ammonia:</div> </div>
	Phase 1 Domestic production and priority use (2025-2030), the Green Ammonia production is expected 80,000 tones
	Phase 2 Commercial electrolyzer and ammonia plants (2031-2040), the Green Ammonia production is expected 1.6 Mtones
	Phase 3 Export level production (2041-2050), the Green Ammonia production is expected 8 Mtones in 2050
	2-3-3. CCUS
	2-3-4. Biofuel
	<div> <div></div> <div>10% biofuel share in TPES (blending ratio 5%-10%) by 2025 10% biofuels share in transportation fuels by 2030</div> </div>
	2-3-5. Renewable Energy
	<div> <div></div> <div> 1.Improving accessibility is noted to be the priority in rural areas as the country still has a 4% gap from the 100% electrification rate, and traditional biomass is still used for cooking in rural areas. 2.To ensure energy security, the plan is to diversify the energy mix by increasing the share of solar energy. This is driven by concerns about the reliability of hydro energy during dry seasons, and it is further supported by the declining cost of solar power. 3.The country aims to develop 75% of hydro energy, 11% RE other than hydro energy, 14% of alternative energy in the energy mix. 4. Increase the total production capacity of hydropower 13 GW (2.500 ktCO2e/year) 5. Develop 1 GW (100 ktCo2e/year) of wind and solar capacity, 300 MW (84 ktCO2e/year) of biomass-fired power capacity </div> </div>
	2-3-6. Nuclear power
	2-3-7. Storage battery
	2-3-8. Initiatives for Smart City

	<p>"The ASEAN Smart Cities Network (ASCN) was established at the 32nd ASEAN Summit in 2018. ASCN is a collaborative platform working toward the common goal of smart and sustainable urban development, with 26 cities from 10 ASEAN member countries participating as pilot cities. Vientiane and Luang Prabang are participating in Laos, and an overview of their action plans is presented below.</p> <p>1. Vientiane</p> <p>Vision: Smart City Action Plan includes: Government Cloud + Internet, Smart Government + Smart Talent, Smart Tourism, Smart Transportation, Smart Campus, Geographic Information Systems (GIS) + E-Governance organization such as land management, and Green Transportation, Security, High Quality It includes environmental improvements.</p> <p>Key Areas of Focus: Develop Vientiane as a livable city; focus on environmental health, especially waste management; prepare the city for disasters; build infrastructure.</p> <p>Strategic goals: public health care system, public service delivery using e-government applications, affordable housing schemes, clean environment, urban resilience with less flooding</p> <p>City Project 1: Integrate a drainage management system into the city's master plan and socioeconomic development plan to effectively improve the operation and maintenance of the drainage system. Each year the city is flooded for at least 5 months. Existing master plans do not collect information on drainage infrastructure, resulting in data gaps among government agencies. Upgrade drainage systems to reduce flooding and increase Vientiane's urban resilience.</p> <p>City Project 2: Population growth, poor road quality, and inadequate public transportation systems have resulted in traffic congestion on the streets of Vientiane City. A sustainable transportation plan needs to be synchronized with the master plan to improve the integration of land use and transportation. Vientiane City is working with key stakeholders, including private transport companies and the local transport sector, to develop a strategic roadmap that identifies underlying transport issues and specifies short and long term action plans.</p> <p>2. Luang Prabang.</p> <p>Vision: Luang Prabang, a city with a strong tourism center and regional connections, aims to become a clean, green, livable environment and smart city by 2025, with a World Heritage Site at its center.</p> <p>Focus areas: develop solid waste and wastewater management systems; develop public parks and green spaces; upgrade roads, alleys, and sidewalks; improve street lighting; protect UNESCO World Heritage sites.</p> <p>Strategic Goals: Develop municipal waste management and sewage solutions, solid waste disposal systems, restore wetlands and protect natural spaces along the Mekong and Nam Khanh Rivers, and accommodate anticipated growth in tourism while maintaining World Heritage values.</p> <p>City Project 1: As part of the Luang Prabang Urban Development Management Project, 22 wetlands have been restored, but those that have not been restored have become biologically degraded and polluted as urban development pressures increase, undermining the unique heritage values of the city.</p>
	2-3-9. Initiatives for Smart Grid
	<p>1. electrification rate: 92%</p> <p>2. Smart grid plan: Load dispatching center (LDC)</p> <p>3. Smart meter deployment goals: None</p> <p>4. main smart grid plan: there are four distribution reinforcement locations developed in Vientiane, Khammounth, Savannakhet, and Luang Prabang in 2016-2017.</p> <p>5. current smart grid activities: load dispatching center project in Sisakhet.</p>
	2-3-10. Initiatives for demand response
	<ul style="list-style-type: none"> •There are two smart meter projects in Lao PDR that has been implemented which reach up to 60, 000 units installations with 50,000 units in city center and 10,000 units is out of central city center.
	2-3-11. Others
	Energy security, affordability and accessibility are the main priorities for the country.
	2-4. Key Points to Promote and Support Climate Change Measures
3. Energy Conservation initiatives	
	3-1. Name and outline of energy policies, and ministries/agencies in charge of the policies.
	<p>National Power Development Strategy : Energy Policy 2021-2030</p> <ul style="list-style-type: none"> - Develop all potential domestic sources of power generation with a mix of domestic use and export. - Mixed domestic power generation from hydropower will account for 75%, coal-based 14%, and renewable energy 11%. - Promote electricity generation for export and electricity sharing with neighboring countries. - Promote increased use of electric vehicles in the transportation sector, with a target of 1% EVs by 2025, increasing to 30% of the total domestic fleet by 2030. - Development of electric delivery systems. The government has set a target of 98% by 2025 and 100% by 2030. <p>National Policy on Energy Efficiency and Conservation (209/ GOV) and 4 areas of focus: Industry, Building and Office, Residential and Transportation</p>
	3-2. Name and outline of energy efficiency and conservation(EC) policies, and ministries/agencies in charge of the policies.
	<p>1. Prime Minister Decree on EE&C Number of 232/GOV has been approved by Lao Government on 11 May 2020</p> <p>2. Roadmap and Master Plan on EE&C Implementation plan</p> <p>3. Strategy for the Promotion of the Green Energy Use in the Transportation Sector Development Plan 2025, Strategy 2030 and Vision 2050 (Approved on 11 May 2020, Number of 231/PM</p> <p>4. Drafts of the Regulation of Energy Management of Designated Factories and Buildings is being developed for 2023-2025</p> <p>5. A Decision for Standards and Labels for Air Conditioners was approved and implemented</p> <p>6. the Energy Building Code is being drafted to be implemented in the next few years</p> <p>7. the Energy Conservation Guideline for Factories and Buildings and Residential buildings are being developed</p>
	3-3. Specific contents of EC policies
	<p>Industry: Promote the EC Equipments, improve the energy management for industrial and factory. Building and Office: collect data of new and existing building, building code, promote the innovation design. Residential: MEPs standard, Labeling system. Transportation: promote the EV car, enforce the fuel standard, improve the quality of the school lincence.</p>
	3-4. Name and year of introduction/revision of laws/regulations related to EC measures
	3-5. EC goals
	<p>Reduction of National energy demand 10% by 2030</p> <p>Reduce energy consumption level by around 1% per year on average (BAU) in 2030</p> <p>Reduce 17% of energy intensity by 2025</p>

3-6. Green (EC) building Code
Building Energy Code (BEC) are still under development (Draft of Building Energy Code) with 9 Chapters and 26 Articles
3-7. Display system for EC performance of the building
Not yet
3-8. Items based on EC Law
3-8-1. Designation criteria of designated business operator
<p>Stipulated in PM Decree</p> <p>Factory:</p> <p>The factories that have installed one or more sets of transformers that have cumulative capacity from one thousand kilowatt (1,000 kW) or one thousand one hundred seventy-five kilovolt amperes (1,175 kVA) or more;</p> <p>The factories that have used the electricity from the producers use the heat from water stream from 20 million MJ) or using all types of the energy with the total volume of more than four hundred seventy-eight tons of oil equivalent (478 TOE) per year.</p> <p>Building:</p> <p>The buildings that have installed one or more sets of transformer that have cumulative capacity from one thousand kilowatt (1,000 kW) or one thousand one hundred seventy-five kilovolt amperes (1,175 kVA) or more;</p> <p>The buildings that have used the electricity from the producers using the heat from water stream from twenty million mega joules (20 million MJ) or using all types of the energy with the total volume of more than four hundred seventy-eight tons of oil equivalent (478 TOE) per year;</p> <p>The buildings which the area of all stories in the same building from twenty thousand square meters (20,000 m2) or more.</p>
3-8-2. Number of designated business operators
164
3-8-3. Obligations which designated business operator shall comply with
<p>Obligations and Mandates:</p> <ul style="list-style-type: none"> • Improve the effectiveness of the fuel burning of the power equipment and appliances • Improve the production lines by changing or improving the production processes • Protect the loss of energy in the power equipment and appliances • Recycle the remaining energy from the production processes • Improve the processes of turning heat into electricity • Replace with other types of energy with greater efficiency <p>Obligations and Mandates of Factory Owner:</p> <ul style="list-style-type: none"> • Assign the manager or persons specifically in charge of the energy work in the factories; • Establish the unit that is in charge of the energy efficiency and conservation in his/her factories; • Implement the energy efficiency and conservation in compliance with specific methods and the energy management methods in the designated; • Inspect the energy use in his/her factories as well as certifying and then submitting the outcome report based on such inspections to the Ministry of Energy and Mines in March each year; • Cooperate with and providing related information to the energy inspection authorities if there is an external inspection; • Responsible for the cost of monitoring, technical inspection on the social and environment impacts of the related sector; • Follow the regulations related to the designated factories as well as the notifications, orders, instructions and related rules issued by the Ministry of Energy and Mines in each period
3-8-4. Contents of energy management system
The designated building or factory shall comply the obligations as stipulated in the regulations
3-8-5. Contents of energy manager system
<p>EM Training Accreditation Agency: Department of Energy Efficiency and Promotion (DEEP) Ministry of Energy and Mines</p> <p>Lao PDR examination process is incorporated within the energy manager training program. This examination follows the completion of the ASEAN-standard training; hence, it's not viewed as a separate entity but is integrated within the overarching training program itself.</p>
3-8-6. Contents of the periodic report system
Under Development
3-8-7. Energy saving regulation for equipment “MEPS”: “Name of applicable equipment” and classification of “mandatory/voluntary”
Approved for drafting of regulation on Standard and Labeling for Air Conditioner
3-8-8. Energy-saving “labeling” system: “Name of applicable equipment” and classification of “mandatory/voluntary”
Approved for drafting of regulation on Standard and Labeling for Air Conditioner
3-8-9. MEPS, labeling: Name of “certification body”
Not yet confirmed
3-8-10. MEPS, labeling: Is there “performance evaluation agency” and if so, its name?
No Local Testing Laboratory
3-8-11. Status to create restrictions by "benchmarks".
Not yet
3-8-12. Status to create "EC guideline" and "EC manual".
Under Development
3-9. EC propelling measures
3-9-1. Financial support(Subsidies, Tax incentives,Low-interest loan, Funds)
<p>1)Subsidies : Not yet</p> <p>2)Tax incentives : Not yet</p> <p>3)Low-interest loan : Not yet</p> <p>4)Funds : Not yet</p>
3-9-2. Supports for energy audit
Not yet. Energy audits are not mandated under Lao PDR’s Prime Minister decree. The decree requires designated factories and buildings to submit audit reports, but it does not directly establish or mandate an energy audit system
3-9-3. EC award system
ASEAN Energy Award
3-9-4. EC training center. And the name and activities if any.
Not yet

	3-9-5. ESCO Business Support	
		Not yet
	3-9-6. Supports for R&D	
		Not yet
	3-10. ESCO business deployment	
		Not yet
	3-11. Subsidy for fuel	
		NA
	3-12. Subsidy for electricity bills	
		Subsidy for residential sector by mechanism of bill payment to 6 steps
	3-13. Name of the government organization which controls energy conservation matters	
		Energy Efficiency and Conservation Promotion Division Department of Energy Efficiency and Promotion(DEEP) Ministry of Energy and Mines(MEM)
	3-14. Name of the EC promotion organization (private organization such as ECCJ)	
		Energy Efficiency and Conservation Promotion Division Department of Energy Efficiency and Promotion(DEEP) Ministry of Energy and Mines(MEM)
	3-15. Cooperation related to energy conservation by Japan	
		METI / ECCJ: Dispatch of experts, acceptance of trainees Multilateral cooperation: Japan-AMS (ASEAN Member States) cooperation - PROMEEC: Industrial sector, energy saving for business buildings, energy management foundation (2001-2011) - ASEAN-Japan Energy Efficiency Market Transformation with Information Provision Scheme (AJ-EMTIPS) - ASEAN-Japan Energy Efficiency Partnership (AJEEP) scheme 2,3 (2012-) - AJEEP Scheme 4、 5 (2022～)
	3-16. Cooperation related to energy conservation by foreign countries except Japan	
		World Bank, Korea (KEMCO, ASEAN+3 Mitigation Cooperation Programme), ADB, New Zealand on Capacity Building
	3-17. Achievements of Joint Crediting Mechanism (JCM)	
		2022 JCM Equipment Subsidy Project 1. Installation II of amorphous high-efficiency transformers in the power distribution network Implementation of JCM equipment subsidy project in 2021 1. 19MW Solar Power Project in Xiangkhouang Province (Liberal Solution Co., Ltd.)