SDG 7 Localisation Snapshot

KAYSONE PHOMVIHANE CITY, Lao PDR

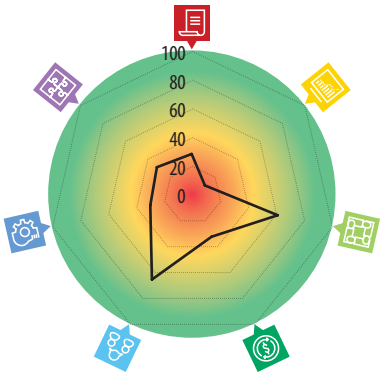
SDG7 Localisation Snapshot provides a brief overview of the key areas related to implementation of the Sustainable Goal 7 (SDG7) to 'Ensure access to affordable, reliable, sustainable and modern energy for all' at the local level based on the answers provided by the jurisdiction to the SDG7 Localisation questionnaire.

Questionnaire allowed to collect the assessments from the local officials regarding the situation on the implementation of SDG7 in their jurisdiction. SDG7 Localisation Snapshot is a part of the collaborative project of United Nations Economic and Social Commission for Asia and the Pacific (ESCAP) and United Nations Environment Programme (UNEP) to support city and sub-national governments in accelerating their efforts in the field of sustainable energy.

General information

Name of the jurisdiction	KAYSONE PHOMVIHANE CITY
Country of the jurisdiction	Lao PDR
Population of the jurisdiction	131,749 people
Area of the jurisdiction (in km²)	779.03
Predominant climate	35-38 degree Celsius

SDG7 Localization score



Score
0–33 34–66 67–100

Scores for each SDG7 Localisation indicator are calculated between 0 and 100 to show the assessment of the status in the jurisdiction in each of the respective areas.

Indicators score

29 Available policies and institutions for SDG localization	12 Energy data monitoring	61 Cooperation with national and international stakeholders	32 Use of financial resources	65 Awareness raising and capacity- building	30 Implementation	31 Linkages to other SDGs
Availability of specific policies and institutions focused on supporting the SDG 7 implementation.	Accessibility and penetration of energy monitoring and smart metering.	Efficient communication and collaboration between local stakeholders and various stakeholder groups at the national and international levels.	Availability of various financial resources and instruments for supporting SDG 7 implementation actions.	Availability of policies or actions to increase the understanding among citizens and build the capacity of professionals for SDG 7 implementation.	Presence of policies and actions to implement SDG 7 targets.	Availability of policies or actions with linkages between SDG 7 and other SDGs.

Sub-indicator score

51 Energy access	14 Renewable energy	24 Energy efficiency
Policies or actions taken by cities on energy access.	Policies or actions taken by cities on renewable energy.	Policies or actions taken by cities on energy efficiency.

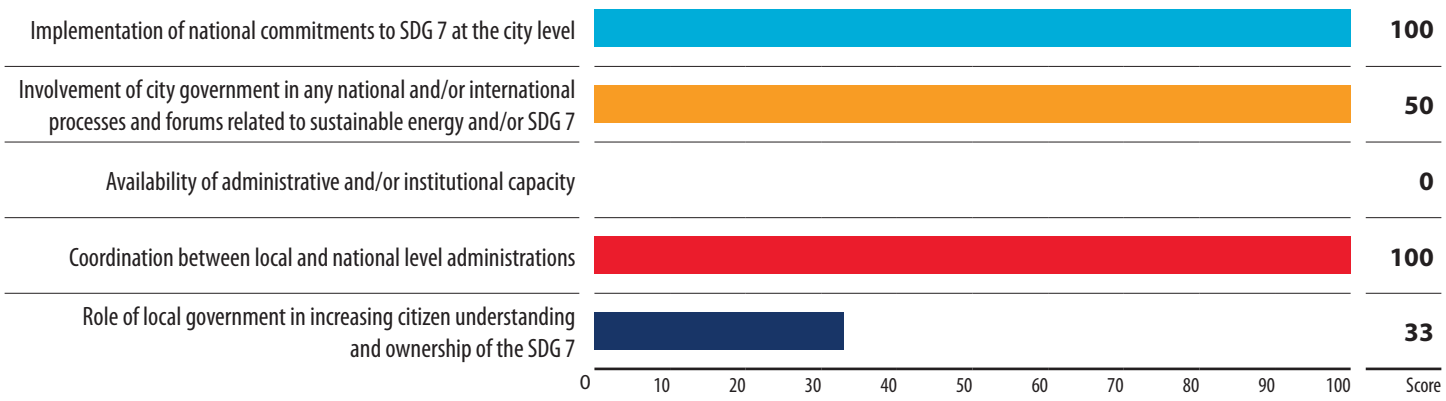
Sub-indicator score

16 SDG3. Good health and well-being.	12 SDG6. Clean water and sanitation.	58 SDG11. Sustainable cities and communities.	33 SDG12. Responsible production and consumption.	33 SDG13. Climate action.
The presence of energy-related activities or measures that support the health sector.	The presence of energy-related activities or measures that support water and sanitation.	The presence of energy-related activities or measures that support development of sustainable cities and communities.	The presence of energy-related activities or measures that support responsible production and consumption.	The presence of energy-related activities or measures that support climate action.

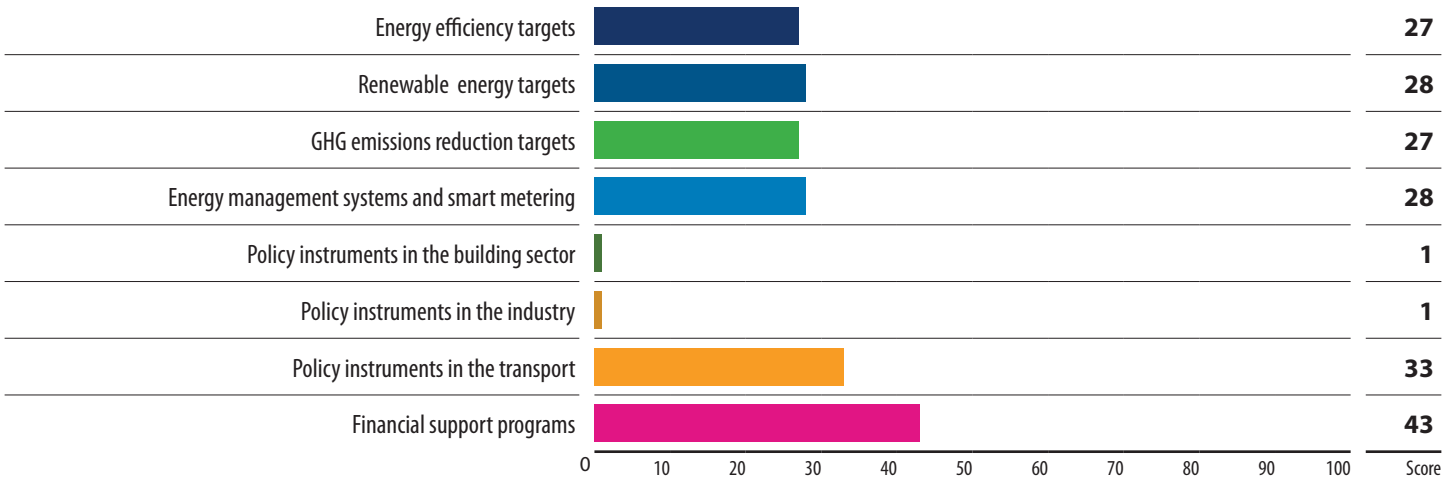
It is important to note that these indicators are qualitative and should not be used for assessing cities' achievement of quantitative targets under the SDG 7. The results for these qualitative indicators are based on cities' self-assessment of their current conditions, efforts, resources and capacity in relation to supporting SDG 7 localization process and can serve the role of the evidence base for constructing recommendations tailored to the local context, as well as the baseline results for tracking cities' progress of their SDG 7 localization efforts.

The results for each indicator are presented as a nominal score from 0 to 100 (where 100 is the maximum possible score, that can be achieved for each indicator or sub-indicator based on the aggregation of all answers of the questionnaire attributed to this particular indicator or sub-indicator).

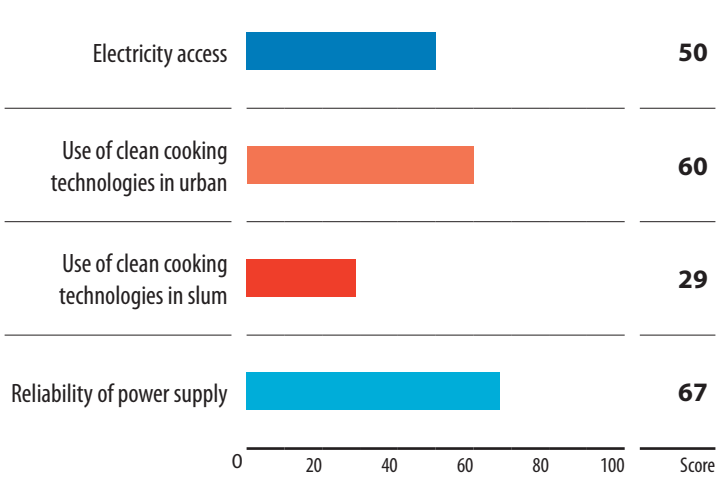
SDG 7 commitments and institutional capacity of Kaysone Phomvihane City



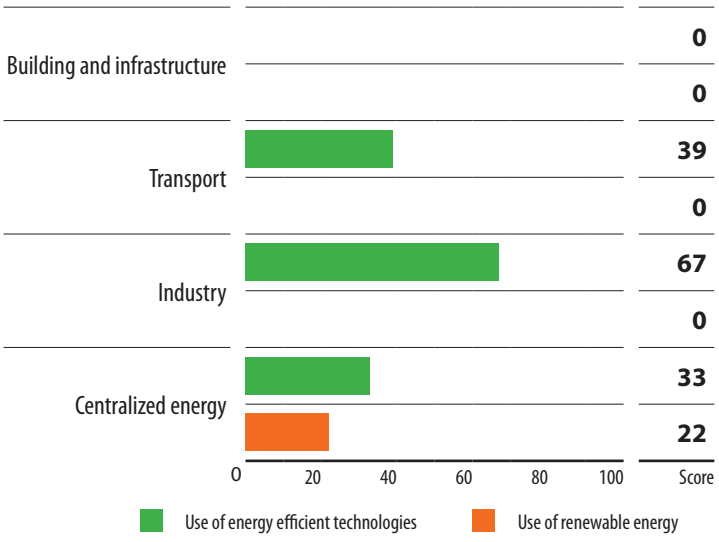
Implementation of SDG 7 support targets and regulations in Jakarta C Kaysone Phomvihane City ity



Assessment of Energy Access in Kaysone Phomvihane City



Assessment of utilization of energy efficiency and renewable energy technologies in Kaysone Phomvihane City



Note: Energy consumer is not present, or energy source is not available in the jurisdiction for the use of renewable energy in building and infrastructure, transport, and industry sector.

Recommendations

29 Indicator. Available policies and institutions for SDG localization

The policy and institutional development powers for the jurisdiction are limited, which constrains autonomy in making policy decisions and taking action towards implementation of SDG 7. The local Government should engage into a collaborative dialogue with national level policymakers about development of the local SDG 7 agenda and the respective institutional framework to support its implementation.

The jurisdiction is implementing policies and projects that take into account existing national SDG 7-related commitments. Ensuring that local efforts on SDG 7 implementation are aligned with the national commitments and plans. Exploring the ways to apply Multi-Level Governance (MLG) approach to implementing SDG 7 is recommended in order to enhance the efficiency of coordination between national and local levels of governance.

The jurisdiction does not have sufficient institutional capacity or special appointed specialists responsible for supporting SDG 7 implementation. It is critically important to have a dedicated technical unit and/or staff in charge of development, implementation and support of activities on sustainable energy. It is recommended more attention be given to raising awareness about sustainable energy and building respective capacity among local Government officials.

Some sustainable energy policies for the building sector have been adopted at the national level. However, only a limited number of related initiatives have been implemented at the local level. It is recommended that work be undertaken on the implementation of nationally supported policy instruments at the local level, such as mandatory on-site water treatment. This implementation may start with selected national policy instruments, and/or cover specific sector or energy end-users in the jurisdiction. Monitoring and verification of the results, achieved after this 'pilot' implementation of selected policy instruments, are needed for possible fine-tuning and adaptation of the policies to the local conditions and requirements. It is also recommended working towards expanding and refining the policy framework in order to arrive at an effective mix of regulatory measures, incentives and information instruments.

Some sustainable energy policies for the transport sector have been adopted at the national level. However, only a limited number have been implemented at the local level. It is recommended that work be done on the implementation of nationally supported policy instruments at the local level, such as regulations on high standard liquid fuel use (petrol and diesel EURO-5 or higher), regulations on hybrid engines use, regulations on electric engines use, regulations on LPG or similar gas type engines use, regulations on biogas engines use, regulations on hydrogen engines use, mandatory Eco-drive training, policies on integration of transport low emission zones and timing limits, and bus rapid transit. This implementation may start with selected priority policy instruments, and/or cover specific sector or energy end-users in the jurisdiction. Monitoring and verification of the results, achieved after implementation of selected policy instruments, should be performed for possible fine tuning and adaptation of the policies to the local conditions and requirements. Work is also recommended on expanding the scope and refining the policy framework in order to arrive at an effective mix of regulatory measures, incentives and information instruments.

12 Indicator. Energy data monitoring

The jurisdiction has made no or very limited efforts on data collection and monitoring of SDG 7-related impacts. Establishment of a comprehensive data collection system for the local energy sector and areas related to other SDGs is a crucial foundation for the development and implementation of SDGs-related projects. Relevant administrative, policymaking, and implementation activities should be put in place in order to support rapid roll-out of data collection and monitoring systems.

Energy management system and smart metering are currently under development. This covers a limited number of energy end-users in the jurisdiction, and its implementation at the local level is lacking supporting policy instruments: residential sector buildings, public sector buildings, commercial buildings, slums and informal settlements, processing industry, electricity generation, public transport, waste recycling, street lights, architectural and buildings lights, centralized water supply and sanitation systems. It is recommended that the necessary administrative and regulatory support is provided, starting with the appointment of responsible energy manager (or department), development of the Energy Action Plan and the implementation strategy. Transparent energy data collection and analysis is required for enabling access to extrabudgetary financing of SDG 7 oriented projects. For sectors which are still not covered by both national and local level programmes, the same steps for establishment of energy management system could be taken, with additional development of primary documents.

61 Indicator. Cooperation with national and international stakeholders

Jurisdiction has been involved in a few multi-stakeholder city initiatives. Further development of national and international cooperation with city initiatives, networks and associations is recommended in order to benefit from the opportunities for capacity building, peer-to-peer learning, unlocking finance and disseminating knowledge on best-practices and solutions in the field of sustainable energy and SDG 7 localization.

The jurisdiction has limited involvement in national and/or international processes and forums related to sustainable energy. Improved communication and cooperation with national and international stakeholders are required in order to promote knowledge sharing and peer-to-peer learning with other jurisdictions across the region. It is recommended that more opportunities for participation in such forums be identified, and that there be more proactive assigning of relevant technical staff to participate and share knowledge.

Coordination mechanisms between the jurisdiction and other levels of governance (e.g., national Government) regarding sustainable energy issues and/or SDG 7 implementation are already in place. They are supported by respective institutional set-up and budgetary frameworks as well as by jointly implemented activities on sustainable energy. It is recommended ensuring that the results of these joint projects are well-monitored and documented in such a way that stimulates dissemination of good practices, peer-to-peer learning with other jurisdictions as well as benchmarking and gap analysis for future projects on sustainable energy.

32 Indicator. Use of financial resources

Some financial programmes to support sustainable energy policies and projects have been adopted at the national level. However, only a limited one have been implemented at the local level: support of clean fuels implementation for the waste management systems. Focus on further strengthening the local level implementation of this and other mechanisms is recommended, in order to enable access to available extrabudgetary options that could be used to support execution of local-level projects. Additional capacity-building training for responsible administrative personnel, and the development of guidelines on accessing finance, are important steps towards establishing the framework for local procurement and financing procedures.

The jurisdiction has access to international financial support for limited energy efficiency and renewable energy technology implementation in the area of the water management system. Further development of cooperation is required, including conducting technical- and financial-oriented capacity-building training for local specialists as well as presentation of the results achieved by the first pilot facilities.

65 Indicator. Awareness raising and capacity building

The jurisdiction has been actively involved in preparation of the reports to track the progress against SDG targets. In order to further improve tracking and reporting processes on progress for SDGs at the local level, it is recommended that some of the available guidelines and reports prepared by other jurisdictions be consulted to learn from their approaches.

The local Government recognizes the importance of increasing citizens' understanding and ownership of the SDG 7 targets but has not yet implemented respective awareness-raising campaigns. It is recommended that a series of information campaigns and awareness-raising materials be designed and implemented to educate citizens on the importance of their actions in line with the different SDGs. It is recommended that the local Government also conduct outreach activities on its on-going and planned actions, and how they align with SDGs. Different SDG 7-related issues should be covered in the educational materials for various target groups, such as educational programmes for schools, colleges and universities, public awareness-raising events, the promotion of success stories for all citizens and training courses for professionals.

30	Indicator. **Implementation**
51	Sub-indicator. **Energy access**

Enhancement of electricity access in the jurisdiction is needed. The process should start from evaluation of technical conditions of existing electrical grids and other components of distribution system (in the format of technical inspections, energy audits, etc.) in order to increase accuracy of electrification planning. Energy efficiency measures and integration of renewable energy should be an important part of the electrification program. Targets for electrification and related key performance indicators should be set by relevant administrative department(s) and approved by policy makers at the local level. Capacity building trainings for local government and technical personnel are required, in order to ensure correct implementation of the planned activities.

A number of clean cooking technologies are used by households in the jurisdiction, such as: electric cookers/pressure cookers, induction electric stoves, and low emission stoves (using fossil fuels or pellets/charcoal briquettes). Further promotion and support for clean cooking technology dissemination (e.g., capacity-building training on assembly and maintenance of clean cooking equipment for local professionals and low-income communities) are required, in order to achieve replication of efforts and large-scale adoption.

Efficient and low-emissions cooking methods are not used, or have very limited use, in slums and informal settlements. Promotion of clean cooking technologies such as: basic methods of burning fossil fuels (coal, oil products, wood, raw organic waste), kerosene, ethanol/alcohol, improved wood cookstoves, electric cookers/pressure cookers, high efficient natural gas or LPG stoves, solar thermal cooking, solar concentrators, and landfill or biomass methane gas cooking stove and the analysis of cooking technology patterns for different end-users are recommended, in order to identify the most suitable technological solutions and adoption strategies. It is possible to adapt available national and international experience in clean cooking promotion. Large-scale awareness-raising campaigns on clean cooking and its benefits (including improved health and quality of life) should target relevant implementing local agencies and the public. Capacity-building training on assembly and maintenance of clean cooking equipment should be developed and made available to local professionals and low-income communities.

Energy supply is quite reliable and sufficient for end-users most of the time. However, power outages may still occur sometimes. Improvement of the local backup energy supply capacity is recommended by installing emergency generators, including those based on renewable energy. Implementation of energy efficiency measures in buildings and industry will help to mitigate the problem of peak demand and further reduce the risk of power outages.

14	Sub-indicator. **Renewable energy**

Renewable energy targets exist at the national level. However, these targets are currently not being implemented at the local level. It is recommended that a dialogue be initiated with the relevant national-level stakeholders to discuss how the jurisdiction can implement these targets at the local level as well as receive necessary support for this process. It is recommended that a study be conducted of the jurisdiction's renewable energy potential in order to establish such targets tailored to the local context and different energy consumers. The results of this study and identified targets should be used as a basis for developing a renewable energy action plan for the jurisdiction. Establishment of a mechanism is advised for tracking progress according to specific key performance indicators and revising them regularly (e.g., every five years).

Targets for reducing GHG emissions/air pollution have been introduced at the national level but have not been implemented at the local level. It is recommended that a dialogue be initiated with the relevant national-level stakeholders to discuss how the jurisdiction can achieve these targets at the local level and receive necessary support for this process. The jurisdiction can also lead by example and establish its own targets. It is recommended that a regular GHG inventory be conducted and that air pollution monitoring systems are established in the jurisdiction, which will provide the data necessary for determining local targets. It is advised that a mechanism be initiated for tracking progress on achieving these targets and revising them regularly (e.g., every five years).

Renewable and non-fossil fuel energy technologies are not used in the building sector and infrastructure, or their utilization is very limited. Deployment of renewable energy solutions should start with establishing ambitious, yet realistic targets based on estimation of the renewable energy potential for various sources available at the local level. In case of data unavailability geospatial data can be collected and analysed by GIS experts Implementation strategy for identified renewable energy sources could be developed in cooperation with experienced local or international professionals. The analysis of relevant financing schemes for renewable energy deployment can help to identify potential sources of investment and project implementation.

Renewable and non-fossil fuel energy technologies are not used or have a limited level of implementation in the transport sector of the jurisdiction. Local government should a strategy for promoting renewable energy utilization in the transport sector and analyze potential financing mechanism in cooperation with relevant local and national experts. Feasibly studies for utilization of various RE technologies in different types of transport should be prepared taking into account existing international best-practices to identify the most appropriate solutions and implementation steps. Capacity building and trainings should be conducted for relevant administrative and technical personal to improve their skills on project development, installation and maintenance of renewable energy technologies.

24 Sub-indicator. **Energy efficiency**

Targets to improve energy efficiency or to reduce energy intensity exist at the national level, although with a limited coverage of energy-consuming sectors. These targets are currently not being applied at the local level. It is recommended that a dialogue be initiated with the relevant national-level stakeholders to discuss how the jurisdiction can adapt these targets to the local context and receive necessary support for this process. It is recommended that a study be conducted of the jurisdiction's energy sector and the opportunities for energy efficiency improvement, in order to determine relevant targets based on the data analysis of different energy consumers. The results of this study and the identified targets should be used as a basis for developing an energy efficiency action plan for the jurisdiction. It is advised that a mechanism be established for tracking progress according to specific key performance indicators and for revising them regularly (e.g., every five years).

Use of energy-efficient technologies for electricity consumption in the building sector and infrastructure is currently at the low level. Supporting further promotion of energy-efficient domestic and commercial appliances is recommended. Financial incentives and changes in the public procurement process can be used to encourage consumers' choices in favour of more energy-efficient appliances and equipment. Capacity-building training and awareness raising campaigns, targeting dedicated administrative and technical staff in the jurisdiction, should be focused on the development of relevant skills for the cooperation with the manufacturers and suppliers of energy-efficient equipment.

Efficient fossil fuels technologies have limited use in the transport sector of the Jurisdiction.
Further promotion of sustainable energy, low-emission solutions in the transport sector is recommended (for example, high- efficiency hybrid and electric vehicles in combination with renewable supply, heavy freight haulage, last mile freight and private transport). Initiating the establishment of a relevant administrative and financial framework is also recommended. Awareness-raising campaigns on "green transport" could also increase understanding of the importance of a low emissions transport system in the modern city infrastructure. Additional capacity-building training is recommended for dedicated administrative and technical staff, with the focus on best practices and lessons learnt from low-carbon transport solutions by other countries and cities. Such programmes could be conducted with the support of relevant national institutions or international organizations.

The jurisdiction has limited or pilot level electrical vehicle deployment. A further increase in the number of electrical vehicles should be accompanied by the development of supporting infrastructure. This includes charging stations and batteries as well as the overall decarbonization of the electricity supply in the jurisdiction through wider utilization of local renewable energy sources. Financial incentives – such as lower vehicle taxes, lower electricity tariffs for charging, free parking etc., for private electric vehicles – will stimulate consumers' choices in favour of this type of transport, especially once the supporting infrastructure becomes widely available.

31 Indicator. **Indicator 7. Linkages to other SDGs**

16 Sub-indicator. **SDG3. Good health and well-being**

Existing facilities cannot satisfy the health needs of the local population. A large portion of the population cannot access the jurisdiction's existing health facilities, and most do not have sufficient space cooling. Implementation of passive cooling strategies is recommended. This can be achieved through building design, insulation, shading, white roofs, windows with low-e coating, natural ventilation where applicable, to reduce the cooling load, as well as stimulate energy efficiency improvement of active cooling systems (i.e., air-conditioning, refrigeration, ventilation etc.), including the integration of renewable energy solutions.

The jurisdiction has limited mobile vaccine/blood refrigeration facilities, which are insufficient to meet the needs of the local population. Such facilities are crucial for ensuring people's well-being and adequate responses to a health crisis (such as the one caused by the COVID-19 pandemic). It is recommended that a local sustainable health-care strategy be prepared (or the existing one updated) in consultation with the national level stakeholders as well as in cooperation with international organizations, in order to identify possibilities for financing the development and maintenance of related sustainable supply chains and their readiness for emergency response. Large-scale deployment of such facilities and equipment will increase energy use and the need for a reliable electricity supply. Therefore, it is recommended that existing energy-efficient solutions available be considered for health cold chain and 'green' vaccines supply (e.g. energy-efficient cooling and refrigeration technologies with better insulation, off-grid direct current-based refrigerators, solar cooling or solar direct drive vaccine refrigerators).

12 Sub-indicator. SDG6. Clean water and sanitation

There are no adequate wastewater treatment facilities in the jurisdiction. The situation requires immediate action by the local administration. It is recommended that consultations be conducted with relevant national level stakeholders, and financial assistance be sought from international development organizations that are active in the country of the jurisdiction.

Water management and sanitation equipment in wastewater facilities have relatively low levels of energy efficiency, functioning with significant energy losses. It is recommended that upgrading of the wastewater system equipment be implemented, starting with audits and feasibility studies to identify strategies and technologies for improving the energy efficiency of wastewater treatment in the jurisdiction. In addition, subsequent implementation of the prioritized activities is recommended. Funding options for these activities can be explored through consultations with relevant national stakeholders, international development organizations and the private sector.

There is no implementation of an Integrated Water Resource Management (IWRM) plan in the jurisdiction. IWRM is a process that promotes the coordinated development and management of water, land and related resources, in order to maximize economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems. It is recommended that additional efforts be made towards the development and implementation of the IWRM in the jurisdiction. Activities should start with the establishment of a working group that includes representatives from different local thematic departments.

Exploring the opportunities for further integration of energy-efficient and renewable energy technologies into the existing IWRM is recommended (e.g., smart process control systems, automated demand-side water supply regulation, solar energy for water supply and treatment etc.). This should be supported by building relevant technical capacity.

58 Sub-indicator. SDG11. Sustainable cities and communities

A relatively small portion of the local population (less than 5%) lives in informal settlements or inadequate housing. People who live in these areas typically do not have access to sustainable energy services. Deployment of energy-efficient and renewable energy technologies is challenging, due to the lack of basic infrastructure. Integration of upgrading strategies for such informal settlements into local housing policies is recommended. Also recommended is the development of policies on energy access (electrification and clean cooking) and last-mile electrification of these areas in combination with support programmes for slum dwellers to use more energy-efficient and renewable energy technologies, such as solar LED lighting, solar mini-grids and efficient cooking stoves. Awareness-raising about benefits of sustainable energy technologies and their proper maintenance are important to ensuring effective adoption and long-term use.

A large portion of the local population has access to the existing public transport system. Monitoring of the transport system's performance and related GHG emissions is needed, in order to conduct benchmarking of the existing system compared to available national or international successful analogs. It is advisable to review the network of public and shared transportation applicable for the local conditions, and to develop a strategy to improve access to low-emissions transport. Supporting infrastructure (e.g., charging stations for e-vehicles) should be planned and developed together with the implementation of the transport network.

Pedestrian lanes are common in multiple places in the jurisdiction and most of them are convenient for walking, although some lanes require improvement. Improvement of the situation is recommended by expanding existing territorial planning solutions or by introducing additional ones (e.g., dedicated lanes for pedestrians and cyclists, restricted pedestrian area, etc.) aimed at developing effective walkable neighbourhoods, as well as ensuring proper maintenance of existing pedestrian areas. Such measures can significantly reduce transportation energy use as well as improve air quality and people's well-being.

The level of air pollution in the jurisdiction is considered unhealthy for sensitive groups of people. It is recommended that support be given to the development of the low-emission development strategy, with priority focus on the analysis of potential solutions aimed at air pollution reduction It should cover different energy consumers in the jurisdiction and should include the improvement of energy efficiency and increased utilization of renewable energy sources in the main air-polluting sectors.

33 Sub-indicator. **SDG12. Responsible production and consumption**

Most of the solid waste is collected, and transported to open landfills without prior treatment. Open landfill storage of waste is having a strong negative impact on the environmental situation in the jurisdiction as well as in the neighbouring territories. It is recommended that an analysis be undertaken of relevant national and international practices for solid waste storage, disposal and treatment technologies. In addition, investigating the potential for waste-to-energy projects is recommended. The possibility of attracting extrabudgetary financing should be examined for pilot projects for testing of suitable solutions as well as for conducting capacity-building training of local professionals focused on introducing and operating low-emissions solid waste treatment systems. These activities should be consolidated into the local waste management strategy.

33 Sub-indicator. **SDG13. Climate action**

Some disaster reduction strategies and actions have been developed at the national level, but their implementation at the local level is currently limited. Initiating a dialogue with relevant national stakeholders is recommended in order to identify the priority areas for actions that are tailored to the local context and aligned with the national strategies. Based on such consultation is recommended to facilitate the commencement of local strategic planning. In this process it is important to consider synergies between disaster reduction and sustainable energy solutions. Materials and technologies that enhance a building's energy efficiency can also make a building more durable and resilient to threats posed by natural disasters. In addition, a sustainable energy supply, co-generation systems, distributed generation and micro-grids can support the recovery process from natural disasters etc. It is recommended that a public awareness programme on these synergies be implemented in order to influence the adoption and implementation of energy-efficient and resilient designs.

UNITED NATIONS ESCAP
Economic and Social Commision for Asia and the Pacific

About the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP)

ESCAP serves as the United Nations' regional hub promoting cooperation among countries to achieve inclusive and sustainable development. The largest regional intergovernmental platform with 53 Member States and 9 Associate Members, ESCAP has emerged as a strong regional think-tank offering countries sound analytical products that shed insight into the evolving economic, social and environmental dynamics of the region. The Commission's strategic focus is to deliver on the 2030 Agenda for Sustainable Development, which it does by reinforcing and deepening regional cooperation and integration to advance connectivity, financial cooperation and market integration. ESCAP's research and analysis coupled with its policy advisory services, capacity building and technical assistance to governments aims to support countries' sustainable and inclusive development ambitions.

UN environment programme

About the UN Environment Programme (UNEP)

UNEP is the leading global voice on the environment. It provides leadership and encourages partnership in caring for the environment by inspiring, informing and enabling nations and peoples to improve their quality of life without compromising that of future generations. This work is supported by the UNEP-led Integrated Urban Systems Partnership – a public-private initiative launched by UNEP and partners in 2019 that supports an integrated approach to infrastructure development in cities to achieve more sustainable and liveable cities that are more energy and resource efficient.

For inquiries, contact

Ksenia Petrichenko at Ksenia.petrichenko@un.org
ESCAP Energy Division

Lily Riahi at lily.riahi@un.org
UN Environment Programme