SDG 7 Localisation Snapshot

PALEMBANG CITY, Indonesia

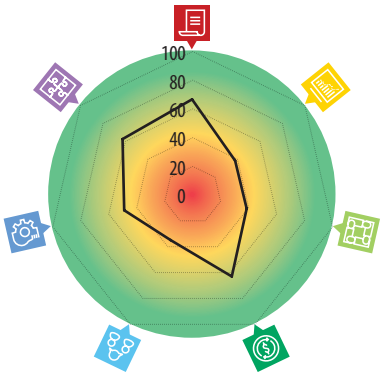
SDG7 Localisation Snapshot provides a brief overview of the key areas related to implementation of the Sustainable Goal 7 (SDG7) to 'Ensure access to affordable, reliable, sustainable and modern energy for all' at the local level based on the answers provided by the jurisdiction to the SDG7 Localisation 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	PALEMBANG CITY
Country of the jurisdiction	Indonesia
Population of the jurisdiction	1,662,893 people
Area of the jurisdiction (in km²)	400.61
Predominant climate	Tropical areas with relatively humid winds

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

67	38	39	63	35	49	62
Available policies and institutions for SDG localization	**Energy data monitoring**	**Cooperation with national and international stakeholders**	**Use of financial resources**	**Awareness raising and capacity- building**	**Implementation**	**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

63 Energy access	44 Renewable energy	41 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.

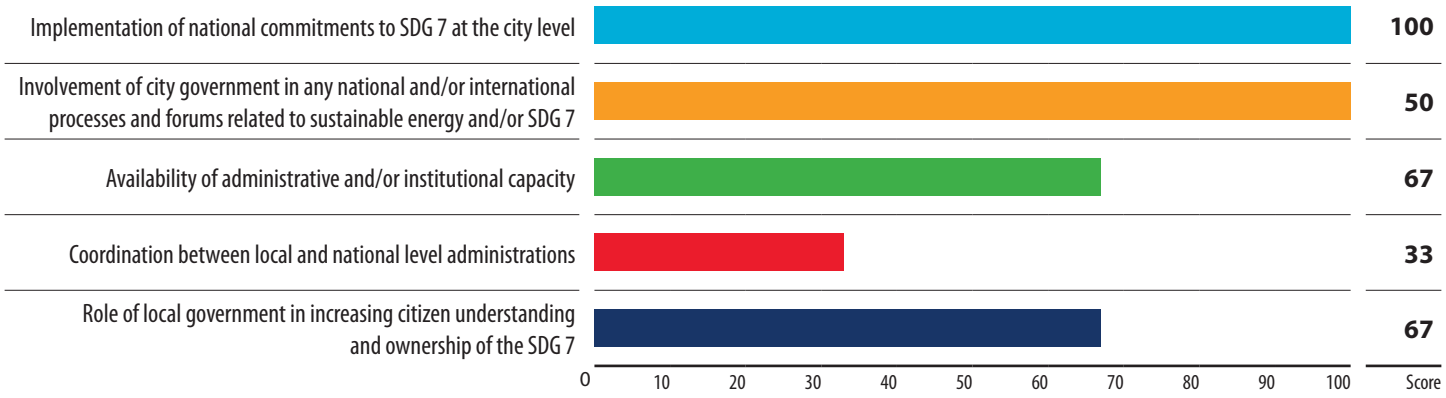
Sub-indicator score

51 SDG3. Good health and well-being.	29 SDG6. Clean water and sanitation.	64 SDG11. Sustainable cities and communities.	67 SDG12. Responsible production and consumption.	100 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.

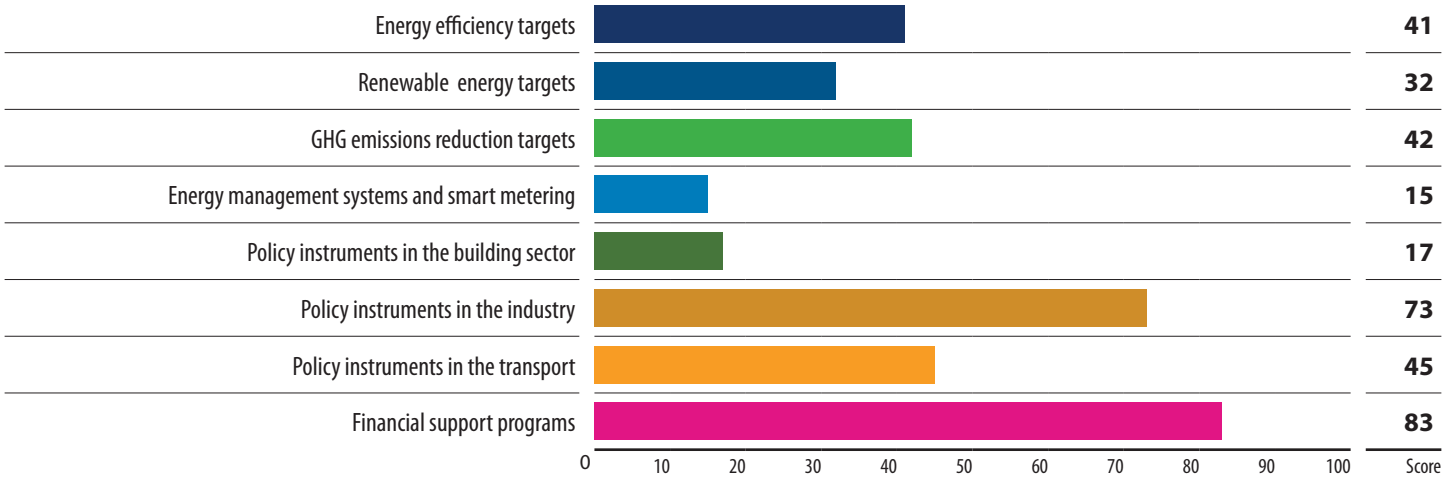
It is important to note that these indicators are qualitative and should not be used for assessing cities' achievement of quantitative targets under the SDG 7. The results for these qualitative indicators are based on cities' self-assessment of their current conditions, efforts, resources and capacity 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).

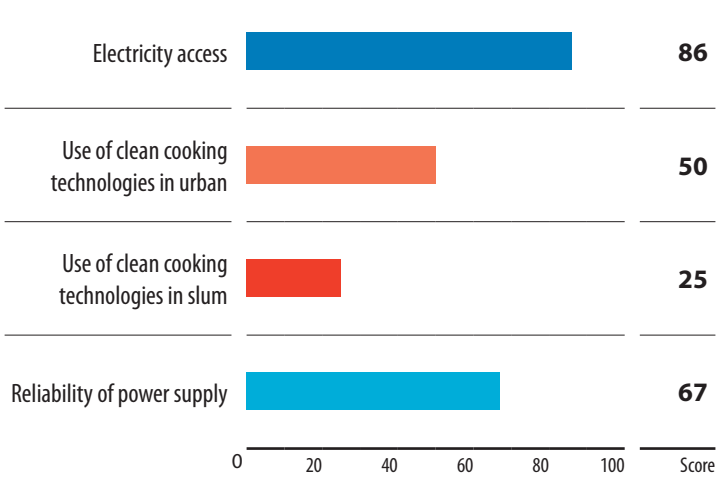
SDG 7 commitments and institutional capacity of Jakarta City



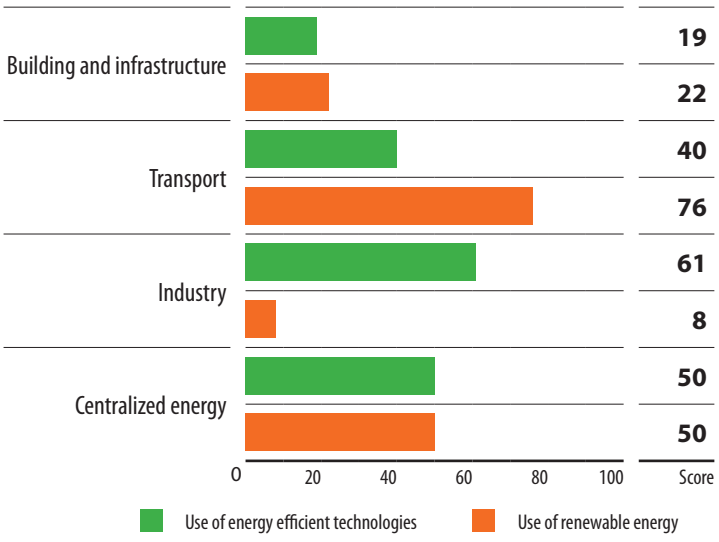
Implementation of SDG 7 support targets and regulations in Jakarta City



Assessment of Energy Access in Jakarta City



Assessment of utilization of energy efficiency and renewable energy technologies in Jakarta City



Recommendations

67 Indicator. Available policies and institutions for SDG localization

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 has already established the necessary institutional set-up and appointed dedicated staff to support SDG 7 implementation. However, the existing technical and/or administrative capacity to support sustainable energy projects is limited. It is important to evaluate whether staff qualifications and capabilities are adequate enough to carry out the work on SDG 7 implementation. It is recommended that consideration be given to allocating some resources towards capacity-building and professional training of appointed staff to ensure that they have sufficient knowledge of SDG 7-related issues and solutions.

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 energy efficiency policy for new construction, program to promote utilization of local materials in construction and retrofits, voluntary energy performance certification and labeling of buildings, energy efficiency obligations schemes/ White certificates, awareness raising, education and information campaigns on sustainable energy, and energy efficiency action plan. 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.

Various sustainable energy policies for the transport sector have been implemented or are currently under implementation in the jurisdiction. It is recommended that further work be undertaken towards expanding and refining the following policy instruments: regulations on electric engines use. Additional capacity-building training could be conducted for the relevant administrative personnel and transport sector experts, with the focus on the development of action plans and unlocking access to financial support, and disseminating lessons learnt. The jurisdiction should aim at arriving at an effective mix of regulatory measures, incentives and information channels. A further increase of local level implementation is needed for following up the policy framework, with support from the national level: (<paste> Formula2 selected answers).

38 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: glass, cement and non-metals, wood and other products, and agriculture and farming. 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.

39 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.

There are some limited coordination mechanisms between the jurisdiction and other levels of governance (e.g., the national Government) regarding sustainable energy issues and/or SDG 7 implementation. In order to make the coordination between the different levels of governance more effective it is recommended that the institutional set-up and budgetary framework be strengthened in collaboration with the national Government. The jurisdiction could initiate a dialogue with the national Government to demonstrate the importance of such coordination mechanisms, and to provide suggestions on how such collaboration could encourage the progress of SDG 7 implementation.

63 Indicator. Use of financial resources

Various financial programmes for supporting sustainable energy policies and projects have been adopted at the local level for different energy-consuming sectors. Nevertheless, it is recommended that additional financial incentives be provided to the following sectors for which national-level support is available such as energy access, energy efficiency, renewable energy.

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.

35 Indicator. Awareness raising and capacity building

The local Government is currently developing and implementing awareness-raising campaigns to increase citizens' understanding and ownership of the SDG 7 targets. It is important to prepare a sustainable long-term plan on awareness-raising activities to cover a wide range of audience interests and to ensure continuity of efforts. Different SDG 7-related issues should be covered for various target groups – e.g., educational programmes for schools, colleges and universities; public awareness-raising events, the promotion of success stories for all citizens and training courses for professionals.

49 Indicator. Implementation

63 Sub-indicator. Energy access

Local government should make efforts to maintain high level of reliable electrification in the jurisdiction, as well as reaching remaining areas that might lack quality electricity supply. Proper monitoring and evaluation of the current power grid operation should be taking place regularly to identify potential efficiency gaps and possible ways for further improvements. Learning from international expertise and best-practices on sustainable electricity will help the local government identify further areas for sustainable energy actions.

A number of clean cooking technologies are used by households in the jurisdiction, such as: high efficient natural gas or LPG stoves. 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 fuels, kerosene, ethanol/alcohol, improved wood cookstoves, electric cookers/pressure cookers, induction electric stoves, low emission stoves, solar thermal cooking, solar concentrators, 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.

44 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 energy (RE) sources are widely utilized in the transport sector. Local government should support further efficient operation of the existing RE transport with the focus on securing relevant financing for the equipment maintenance and training of the relevant technical personnel. Local government should develop local targets and key performance indicators for RE use in transport, as well as monitoring and verification mechanisms to make sure that the targets are met and regularly updated.

41 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).

Renewable and non-fossil fuel energy sources are available and widely used in the building sector and infrastructure, but utilization of related energy efficient technologies is limited. Larger-scale deployment of energy efficient renewable energy solutions should start with specific pilot projects – for example, at the district level – with subsequent replication of the solutions throughout the jurisdiction, taking into account lessons learnt and the economy of scale. Capacity-building and vocational training are required for the relevant local level professionals to establish the necessary skills and understanding of the installation and operation of respective renewable energy technologies as well as the implementation steps and requirements for renewable energy projects. Seeking technical assistance from national and international experts is recommended in order to enable access to project finance and political support.

Use of energy-efficient technologies for electricity consumption in the building sector and infrastructure is currently at the moderated level. Enhancing dissemination of energy-efficient technologies is recommended, preferably supported by relevant financial incentives to encourage consumers' choices in favour of more energy-efficient appliances and equipment. Engagement of the private sector and international financial institutions is highly recommended through documentation and dissemination of the impacts and lessons learnt, continuous capacity-building as well as collaboration with international organizations and think tanks.

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.

Utilization of energy efficient renewable energy and non-fossil fuel technologies is limited in the jurisdiction's transport sector. It is recommended that support is increased for monitoring and evaluation of the achieved results of the existing projects, in order to be able to identify the opportunities for scaling up successful solutions for replication across the jurisdiction, including planning and development of relevant infrastructure. Capacity-building training for dedicated administrative and technical staff could be focused on the operation of low-emission transport systems as well as awareness raising about efficient transportation practices that can be integrated into the overall decarbonization strategy of the jurisdiction.

Various types of electrical transport are used in the jurisdiction. Continuous monitoring and evaluation of the performance of deployed electric vehicles is recommended, in terms of GHG emissions reduction compared to the conventional transport fleet, in order to identify measures for improvement and increased effectiveness of the developed infrastructure and decarbonization of the electricity supply. The changing needs of the supporting infrastructure as well as its effectiveness and convenience (e.g., fast chargers, installation of charging stations at shopping malls, offices etc.) as well as financial incentives (e.g., lower vehicle taxes, lower electricity tariffs for charging and parking etc.) for private electric vehicles will further stimulate consumer choices in favour of this type of transport.

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

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

Most of the existing health-related facilities have adequate space cooling and can, to a large extent, satisfy the health needs of the local population. Improvement and analysis of energy data monitoring is recommended for the health-care facilities in the jurisdiction. It is also recommended that dedicated energy performance indicators (focused on space cooling efficiency) be included in the energy management system or relevant existing energy monitoring protocol, if any. It is recommended that consideration be given to implementing passive cooling strategies (especially for new buildings) through building design, insultation, shading, white roofs, windows with low-e coating and natural ventilation, where applicable, to reduce the cooling load, and that energy efficiency improvement be made in active cooling systems (i.e., air-conditioning, refrigeration, ventilation, etc.), including 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).

29 Sub-indicator. **SDG6. Clean water and sanitation**

Less than half of the wastewater generated in the jurisdiction undergoes adequate treatment. Adequate expansion, sufficient maintenance and upgrading of existing wastewater treatment facilities is needed, including the integration of energy-efficient and renewable energy technologies. Additional capacity-building training is required for personnel to build their skillset to operate new equipment. In order to ensure development of an adequate wastewater treatment system, consultation should be undertaken with relevant national level stakeholders, international development organizations working in the area and the private sector.

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.

Integrated Water Resource Management (IWRM) is not a common practice, but there are some related pilot projects being implemented in the jurisdiction. It is important to support further development and implementation of IWRM across different water end-users. Additional capacity-building training is required for the administrative and technical personnel concerned, in order to effectively identify and implement IWRM that is suitable for the local situation.

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.

74	Sub-indicator. **SDG11. Sustainable cities and communities**

The jurisdiction is operating a wide public transport system, and most of the local population has access to public or shared transportation. It is recommended that further improvement of the system be carried out, with the introduction of energy-efficient transport solutions, increased utilization of renewable energy as well as expansion of the supporting infrastructure (e.g., charging stations for e-vehicles).

Pedestrian lanes are not very common in the city or most of them require substantial improvement. This discourages people from choosing low- and zero-emission modes of mobility, such as walking and cycling; this, in turn, increases the demand for utilization of private cars and other modes of energy-consuming transportation. It is recommended that the situation be improved by introducing various territorial planning solutions (e.g., dedicated lanes for pedestrians and cyclists, restricted pedestrian areas 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.

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

The jurisdiction is taking steps towards sustainable waste management process implementation with some of the landfills already implementing pilot waste treatment and recycling practices. Conducting a detailed benchmarking analysis of the operational efficiency on the implemented waste recycling facilities is recommended, together with the preparation of a strategy for replication of successful sustainable solutions in other facilities in the jurisdictions. A feasibility study to explore the potential for waste-to-energy projects in the jurisdiction, its cost-effectiveness and ways to gain financing can help to enhance waste treatment as well as offer a local source of sustainable energy. Conducting capacity-building training for local professionals, focused on existing best practices for sustainable solid waste treatment systems, and consideration of possible financing mechanisms is also recommended. Cooperation with relevant national level and international stakeholders is required at this stage in preparing guidelines for large-scale development and implementation of green urban solid waste treatment projects.

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

Disaster reduction strategies are being implemented at the local level in line with relevant national strategies. Reviewing these strategies is recommended in order to learn whether the synergies between disaster reduction and sustainable energy solutions are being considered. Examples of such synergies may include, but are not limited to materials and technologies that enhance a building's energy efficiency as well as make the building more durable and resilient to threats posed by natural disasters. A sustainable energy supply, co-generation systems, distributed generation and micro-grids can support the recovery process from natural disasters etc. Where such synergies are not considered in the existing disaster reduction strategies, it is recommended that relevant adjustments be made based on existing international good practices. Implementation of a public awareness programme on these synergies is recommended 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