



SDG 7 Localisation Snapshot

MUNTINLUPA CITY, Philippines



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.

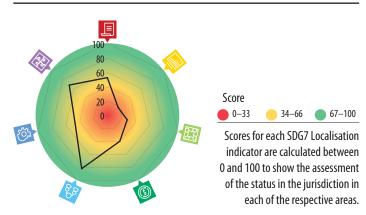
Questionnaire allowed to collect the assessments from the local officials regarding the situation on the implementation of SDG7 in their jurisdiction. SDG7 Localisation Snapshot is a part of the collaborative project of United Nations Economic and Social Commission for Asia and the Pacific (ESCAP) and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

General information

sanitation.

Muntinlupa City Name of the jurisdiction **Country Philippines** of the jurisdiction 1 million people **Population** of the jurisdiction Area of the 39.75 jurisdiction (in km²) **Predominant climate** Tropical and maritime. High temperature, high humidity and abundant rainfall

SDG7 Localization score



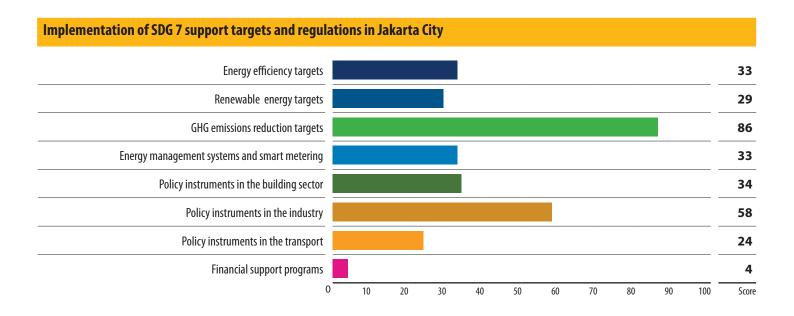
Indicators score							
53	19	28		39 ⑤	82 88	46	68
Available policies and institutions for SDG localization	Energy data monitoring	Cooperation national and internationa stakeholders	l	Use of financial resources	Awareness raising and capacity- building	Implementation	Linkages to other SDGs
Availability of specific policies and institutions focused on supporting the SDG 7 implementation.	Accessibility and penetration of ene monitoring and sm metering.	3,	ion nd various oups I and	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 55 Energy access		47 Renewa	nble energ	у	38 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.							
•,		G6. Clean water d sanitation.			67 SDG12. Responsible 67 production and consumption.		SDG13. Climate action.
The presence energy-relate activities or m that support t	d neasures	The presence of energy-related activities or measures that support water an		1 37	related act measures t	nce of energy- ivities or that support e production and	The presence of energy-related activities or measures that support climate

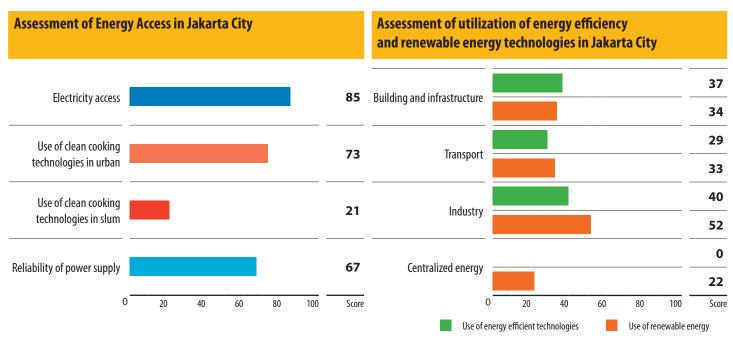
It is important to note that these indicators are qualitative and should not be used for assessing cities' achievement of quantitative targets under the SDG 7. The results for these qualitative indicators are based on cities' self-assessment of their current conditions, efforts, resources and capacity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

communities.

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).







Note: Energy consumer is not present; energy source is not available/available but not used or not widely use in the jurisdiction for the use of energy efficient technologies in centralized energy.

Recommendations



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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 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 energy efficiency policy for new construction, energy efficiency policy for retrofit, program to promote utilization of local materials in construction and retrofits, energy efficiency obligations schemes/ White certificates, carbon market project mechanisms/ Green certificates, awareness raising, education and information campaigns on sustainable energy, voluntary use of ecological standards (ISO 14001 or similar), voluntary use of energy management standards (ISO 50001 or similar), energy efficiency action plan, and mandatory energy auditing. 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 hybrid engines use, regulations on electric engines use, regulations on biogas engines use, and regulations on hydrogen engines use. 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.



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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: public sector buildings, commercial buildings, food and beverages, chemical and synthetic products, glass, cement and non-metals, iron and steel, pulp and paper, textile, leather and leather products, machinery and transportation equipment, wood and other products, agriculture and farming, other processing industry, electricity generation, district cooling system, district Heating systems, passenger car, motorbike, taxi, auto rickshaw, bus, tram, tractor, mini bus, freight transport, landfills, and waste recycling. 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 implmentation 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.



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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 no coordination mechanisms between the jurisdiction and other levels of governance (e.g., nation Government) regarding sustainable energy issues and/or SDG 7 implementation. The local Government is encouraged to initiate the establishment of relevant coordination mechanisms, such as steering committees/councils/other institutions. This should include participation by representatives from the national, provincial and local levels of governance in order to align efforts and explore opportunities for extra-budgetary financing for SDG 7- related projects more efficiently.



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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 number have been implemented at the local level. Focus on further strengthening the local level implementation of these 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 the implementation of energy efficiency and renewable energy technology projects in the area of the water management system. Detailed performance monitoring and result verification is required to enable further dissemination of successful results from the implemented projects.



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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 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.



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Indicator. Implementation

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: kerosene, ethanol/alcohol, improved wood cookstoves, electric cookers/pressure cookers, induction electric stoves, and 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: electric cookers/pressure cookers, high efficient natural gas or LPG stoves, low emission stoves (using fossil fuels or pellets/charcoal briquettes), solar thermal cooking, solar concentrators, and landfill or biomass methane gas cooking stove and the analysis of cooking technology patterns for different endusers 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.

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 are being implemented at the local level. However, these targets lack support from the national policy framework at the national level for informing them about the local targets and the progress the jurisdiction is making towards achieving them as well as the importance of establishing such targets at the country level It is recommended that a regular GHG inventory be conducted and that air pollution monitoring in the jurisdiction to collect the data necessary for updating 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.

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).

Fossil fuels are used in the building sector and infrastructure; in most cases, the respective equipment and technologies are relatively energy efficient. Setting and regularly increasing the minimum energy performance standards and targets is recommended, in combination with the mandatory requirement for periodic maintenance and upgrades of energy-consuming technologies and equipment. Incentive programmes could be provided to encourage manufacturers and developers to exceed these targets and integrate opportunities for higher utilization of renewable energy through research and development activities, and the identification of suitable best practices from other countries and cities. These measures, among others, should be integrated into the local energy management strategy.

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.

The jurisdiction has moderate level of energy efficient renewable and non-fossil fuel technologies use in its transport sector. Continuous monitoring and evaluation of the achieved results of the existing projects is recommended in order to identify measures for improving and increasing the effectiveness of the implementation of successful solutions. Capacity-building training for the administrative and technical staff concerned could be focused on improving the efficiency of low-emission transport systems as well as increasing the level of emission reductions through the implementation of sustainable transport solutions.

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.



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Indicator. Indicator 7. Linkages to other SDGs

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 a sufficient number of mobile vaccine/blood refrigeration facilities to satisfy most of the current needs of the local population. Such facilities are crucial to ensuring people's well-being and adequate responses to a health crisis (such as the one caused by the COVID-19 pandemic). Therefore, it is recommended that a local sustainable health-care strategy be prepared, or the existing one updated, in consultation with the national level stakeholders and in cooperation with international organizations, in order to analyse present and future local health-care needs for related sustainable supply chains and their readiness for emergency response. As further expansion of such facilities and equipment will increase energy use and the need for a reliable electricity supply, it is recommended that consideration be given to the existing energy-efficient solutions available 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).

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Sub-indicator. SDG6. Clean water and sanitation

The jurisdiction has well-established sustainable water treatment activities, with almost all wastewater generated in the jurisdiction undergoing good-quality treatment. Continuous and adequate maintenance and upgrading of existing wastewater treatment facilities, including integration of energy-efficient and renewable energy technologies, are required.

Water management and sanitation equipment in wastewater facilities is relatively energy-efficient and is functioning without significant energy losses. It is recommended that proper maintenance of the wastewater equipment be prioritized and, where necessary, upgraded, starting with identification of existing best practices and integration of energy-efficient and renewable energy solutions. Funding options for these activities can be explored through consultations with relevant national stakeholders, international organizations and the private sector. Additional capacity-building training for the operational personnel as well as technical support are required to ensure the availability of adequate skillsets for operating the advanced equipment and systems.

Integrated Water Resource Management (IWRM) is recognized as an important practice in the jurisdiction and there are multiple cases of its implementation. It is recommended that detailed monitoring and evaluation of results achieved be carried out after IWRM introduction. The findings should be presented to the relevant administrative and technical personnel for evaluation and identification of areas needing further improvement, supported by an analysis of existing IWRM best practices at the national and international levels.

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.

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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.

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 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 low. Continuing to maintain high air quality in the jurisdiction is recommended together with the use of green and pollution-free energy use and generation technologies, with the focus on improving energy efficiency and increased utilization of renewable energy sources.

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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.

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Sub-indicator. SDG13. Climate action

Disaster reduction strategies are being developed and/or are under implementation at the local level in line with relevant national strategies. A review of these strategies is recommended to see 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 and 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. Implementing a public awareness programme on these synergies is recommended in order to influence the adoption and implementation of energy-efficient and resilient designs.



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.



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.