

The Integrated Urban Services (IUS) Program of the U.S.-ASEAN Smart Cities Partnership

Guidance for the Pilot City Application

Background

The Integrated Urban Services (IUS) program was initiated in 2021 with funding from the U.S. State Department and leadership from the National Renewable Energy Laboratory (NREL). The goal of IUS is to help local city leaders, the private sector, financial institutions, and other stakeholders identify, design, and implement more integrated models of basic urban service provision that can sustainably secure energy, water, and food (EWF) services, in a resource-efficient, environmentally friendly manner. This program will help city authorities and local stakeholders adopt technologies that support low carbon energy production, and resource recovery and reuse through cost efficient and integrated energy, water, and food (EWF) systems. The application of circular and sustainable market-based approaches coupled with business plan development and peer learning will create the enabling environment necessary to attract public and private investors.

The first year of the IUS project (2021) began with a regional workshop to educate stakeholders and engage ASEAN cities in thinking on their EWF priorities and barriers to project implementation. As follow-on to the workshop, the IUS program will provide technical assistance to two ASEAN cities to aid them in implementing integrated EWF system pilot projects and share knowledge and lessons learned with the entire ASEAN Smart Cities Network (ASCN) and other regional stakeholders on the benefits of building an integrated urban services sector. The IUS project will also document, share experiences and case studies to help decision-makers in the broader ASCN promote and overcome obstacles to integrated EWF systems. Lessons learned and best practices captured through knowledge documentation and TA activities will be shared at regional peer learning events and trainings (2022-2023). Regional information dissemination is aimed at helping scale implementation of integrated, regenerative EWF solutions through public-private and multi-sectoral partnerships.

Technical Assistance (TA) to Catalyze Integrated Urban Energy-Water-Food Planning

Targeted TA will be provided by NREL and appropriate members of our Experts Group of advisors to two selected cities to catalyze integrated EWF planning and private sector engagement. The key benefit for selected cities is that the capability building and TA leads to actionable steps for the selected cities, in support of their sustainability and resilience goals. The selected cities will directly work with NREL, who have world-class researchers in fields like renewable energy, integrated water management, and system dynamics/modelling. Cities will also have access to voluntary support from our Experts Group and our Community of Practice (CoP) members.

The goal of the TA is to aid the selected cities in addressing their EWF system challenges and achieving their priority integrated urban development and sustainability goals. This program will support activities of urban jurisdictions and cities that are focused on energy, water sector services and food supply planning. Capacity building will also be included to help develop public-private partnerships for the development of urban services. The program will leverage the expertise and resources of NREL, regional

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partners, an Experts Group, and the CoP. The specific partners are to be decided in the selection process and could include for example it could include the Asian Development Bank (ADB).

Capacity building and TA for key public and private sector and community stakeholders in the two selected pilot cities will be conducted in 2022 and 2023. Assistance will be focused on a variety of topics, including technology and nature-based solutions, planning and design, and modeling and analysis. TA could include data collection, relevant analysis, and decision-making support as well as frequent collaboration with NREL, the Experts Group and private sector partners. Potential services for the selected cities may include but is not limited to:

- Innovative solutions needed to support EWF opportunities identified in city action plans and other city priorities/sustainability goals, which may include but are not limited to:
 - Urban and systems planning, integration, and design
 - Policy, governance structures, and government policies
 - Nature-based solutions and ecosystem services optimization
 - Sustainable and low impact strategies for water supply and management (drinking, stormwater, green water, greywater) and wastewater treatment
 - Low-emissions energy strategies for development and usage
 - Resource-efficient urban food production and food waste reuse
 - Analysis and business planning, action/business plan development support, and identification of project finance
- Procurement practices that adhere to international standards for bankability and transparency and that can facilitate engagement of technology, equipment, and service providers in project delivery
- Codes, standards, and policies that govern water resources as they relate to power generation, ecosystem and water body health, and competing usage with other sectors
- Models and visualizations to understand the sustainability impacts and benefits of new codes, policies, and technologies on EWF security, affordability, reliability, livelihoods, jobs, and the economy
- Guidance on using numerous and disparate data sets, including regional climate projections, to make effective sustainable decisions and investments.

The result of pilot city engagements will be the development of partnerships and business plans to attract future investment interest and actionable next steps for project implementation to address EWF system challenges for each city.

Selection Criteria

To receive TA, the selected cities will be expected to provide a designated point of contact (PoC). The PoC will be engaged in the pilot project development, commit and participate in 2-4 hours of monthly meetings, provide necessary data such as energy loads, system component locations, land use regulations, existing water sector infrastructure, and existing policies and programs that govern EWF development in their jurisdictions.

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The State Department, with input from the Experts Group and the CoP, will select two pilot cities to receive TA and capacity building to address their EWF challenges through the development of a pilot project business plan in concert with private sector partners.

Through the application process and the first step, NREL is focused on determining whether NREL, or its partners (Experts Group, CoP), can address the technology or capacity needs identified in the application, and therefore provide the capacity building and TA that leads towards future project implementation.

Successful applicants will demonstrate in their application:

1.	<p><u>Active government, community, stakeholder and/or private sector support for the project (or EWF issue and challenges). The application will be strengthened with:</u></p> <ul style="list-style-type: none"> • Diverse stakeholders open to novel net-zero or renewable solutions • The group of partners at the beginning can be changed and added to after selection as well • Identification of a site that has already been selected for such a pilot • <u>City with demonstrated EWF system priorities identified in existing projects</u>, city action plans, urban services plan, strategy, policies, or other documents.
2.	<p>Alignment with IUS project objectives, and participation in the ASCN. Being <u>part of the ASCN will be given preference</u> but does not exclude a city with a good application if it is not part of the network.</p>
3.	<p>1 application per city, led by city representative</p>
4.	<p>At least 1 of the city services should be involved e.g., utility operator, energy or water utility, land management, permitting office</p> <ul style="list-style-type: none"> • It is important for your application to have input from different offices of the city's sustainable development sectors • Applications where the city brings together different city services e.g., energy, food, water, are strongly encouraged
5.	<p>Priority will be given to partnerships e.g., city, universities, businesses, local citizen groups, and NGOs.</p> <ul style="list-style-type: none"> • A partnership model will be preferred • The application should be submitted by the city/government
6.	<p>A clearly defined need for EWF solutions and the current and near-term system challenges such as:</p> <ul style="list-style-type: none"> • Energy system reliability/sustainability, flooding, inadequate sewage treatment, reliable access to safe drinking water, food supply chain disruptions, and food waste management • Self-sustainability (e.g., economic, social, institutional), is important. The city should be able to own the solution after the assistance and take it forward

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	<ul style="list-style-type: none"> • The application should highlight the key challenges faced by the city, and the need for integrated EWF solutions. • Business development e.g., desire and ability to take ideas on to a commercially viable or “bankable” phase will be very important to highlight in the application
7.	Potential for the application of commercially available, innovative technology, planning and design, or policy solutions to address the city’s EWF system challenges using an integrated approach.
8.	Dedicated staff time from a city’s appointed representative/point of contact (PoC) and expert team, with cross-sectoral urban planning and development responsibilities. This team should have decision-making authority (or the ability to quickly attain needed authorities) who will work with NREL and its partners to ensure successful outcomes.
9.	Feasibility of bringing the project to the business plan development stage within the project timeframe . Ability for NREL or its partners (Experts Group, CoP) to address the technology or capacity needs identified in the project.
10.	Market based commercially ready technologies and solutions, to address a common problem. <ul style="list-style-type: none"> • Requesting assistance for innovative, but not market ready technologies may not provide you the most help
11.	Financing, technology options, policies for EWF, planning, and consumer behavior change will be considered in the application. <ul style="list-style-type: none"> • E.g., social inclusion, empowerment of disadvantaged groups.
12.	What are your biggest concerns and system challenges? For instance: <ul style="list-style-type: none"> • System resilience? • Understanding of how renewables will change the city grid? • Other?
13.	Once the project starts, will city authorities permit access to relevant data sets? This will be discussed prior to start. <ul style="list-style-type: none"> • E.g., energy loads, food waste availability, drinking water energy needs • Water desalination and wastewater treatment needs • Data quality e.g., hourly data of energy loads highlighting seasonal variation

Process

This graphic shows the pilot cities application process. First, please designate your city representative point of contact (PoC) who will be engaging with us as you build your proposal.

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Send back the application and supporting documents via email to Parthiv.Kurup@nrel.gov, by the **25th of October** (application opens 1st of September).

We welcome you providing information for us to determine if we can help you. City plans, sustainability goals, EWF priorities and challenges in the next 5-10 years will be important for us to understand.

Please reach out to us prior to submission and ask your questions as you put together this application. This is important, and we can help you understand what will make your application stronger. Note, NREL will not aid in putting together the proposal.

During the review of applications, calls may be needed with city representatives/teams to find out more, and documents may be requested. During the pre-selection and final selections, the intended level of effort, type and support capabilities from NREL for the pilot city will be discussed and highlighted.

Timeline for Selection of Technical Assistance

- **Application opens: 9/1/21**
 - Please see the Pilot Cities Application document
- **Webinar and Q&A on application process: 9/27/21 MDT**
 - The webinar will be on the evening of the 27th of September for the U.S., and the morning of the 28th of September for SE Asian countries
 - The webinar will be recorded. The details will be sent through
 - The webinar and Q&A will repeated
- **Application deadline: 10/25/21**
 - Work with NREL and get the application ready prior to submission
- **Date of notification: January 2022**
 - The selected cities will be notified in January 2022
- **Period of technical assistance: February 2022- September 2023**

How to Apply

Please complete the information in the application document and email to: Parthiv.Kurup@nrel.gov. Please reach out to Parthiv on transferring the subsidiary documents and information.

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Questions? Contact:

<https://www.nrel.gov/international/integrated-urban-services.html>

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