

Smart City Web Tool



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Title

Smart City Web Tool

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Description

Shakti Sustainable Energy Foundation works to strengthen the energy security of India by aiding the design and implementation of policies that support renewable energy, energy efficiency and the adoption of sustainable transport solutions.

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Introduction

An online application “Smart City Web Tool” has been developed for the city governments and key stakeholders working on smart city projects. The Web Tool is an excellent source of information for municipality officials, city planners, technical experts and consultants as well. The tool also serves as a comprehensive knowledge bank for a large section of interest groups that includes government, institutions, researchers, civil society members, NGOs and common citizens who are willing to know about their rights, roles and responsibilities in smart city initiatives. This tool will help city administrators and decision makers in both planning and implementation of the smart city interventions.

Under the Smart City Handholding Support Project, funded by Shakti Sustainable Energy Foundation, a webtool has been developed jointly by ICLEI- Local Governments for Sustainability, South Asia and S G Architects, in partnership with state governments of Rajasthan and Andhra Pradesh, and city governments of Jaipur, Udaipur, Vishakhapatnam and Kakinada. The urban local bodies and authorities of other ICLEI Member cities have also provided with their inputs and valuable suggestions during development of this webtool.

The current report – ‘Smart City Webtool’ is one of the outputs under the project “Supporting Smart Urban Mobility and Built Environment in Indian Cities” under Grant Ref: G 15 SSEF-140 for the period of October 2015 to January 2017. The main objectives of the project were to broadly engage with state level officials in two states - Andhra Pradesh and Rajasthan - and have continuous on ground engagements with targeted authorities in the smart cities selected in these states on implementing with specific reference to urban transport and built environment. This included assessment of existing urban transport scenario in the identified cities for each state and providing handholding support to city teams for smooth initiation of Smart City Mission. The webtool is an ongoing exercise as this requires data to be updated on regular basis and keep it running for its better functionality.

The report provides brief description on online application ‘Smart City Webtool’, developed for the city governments and key stakeholders, working on smart city projects. It details the methodology for the use of the tool, expected user groups and beneficiaries and the need of such tools in the current context of smart and sustainable urban development.

Description in Brief

Sustainable urban development necessitates opportunities for economic and social development. These need to be well managed as well. The growth of any city leads to increased pressure on the infrastructure due to increased population. The rate and scale of urbanization in India on the one hand is becoming a challenge with regards to urban provision of infrastructure and services, while on the other offers increased levels of opportunity for economies to flourish. This urban growth due to rapid urbanization is continuously challenged due to the space restrictions faced by ULBs. This limits their ability to plan adequately. The Smart Cities Mission aims to decrease these challenges that cities face. Whether it is demand for resources, spatial form or management of infrastructure, the smart city approach considers all the aspects in a holistic manner. Smart city concept entails transformation of cities in a manner so that it can provide better quality of life.

With a vision to develop 100 Indian cities as Smart Cities by the end of year 2020, the Government of India initiated the Smart Cities Mission (SCM) in year 2015. With its official launch in July 2015, the mission aims to capture the aspirations of the citizens and address challenges cities are facing. The Mission guidelines apply the global concept of Smart City in Indian context. The Mission statement and deliberations at national

level suggest that the program aims to create economically competitive and socially and environmentally sustainable cities and urban settlements primarily but not through limited technological interventions. SCM promotes peoples' participation, transparency in governance, stakeholder consultation and opportunity to local actors to come up with socially inclusive urban interventions. The mission also embraces learning from predecessor urban renewal and transformation programs, SCM embodies a balanced mix of top-down and bottom-up approaches.

The Mission focuses on local actions and integrated approaches towards development to transform urban settlements. The Mission empowers municipal administration to develop their own ideas that are inclusive and self-sustainable and develop strategies leading towards improved service delivery, clean energy and sustainable economic growth. Unlike predecessor urban programs, this mission encourages convergence of programs from all sectors having direct or indirect linkages with urban development. The aim of the convergence is to align ongoing and future efforts in one direction and create a collective impact to achieve one common goal encompassing resource efficiency, improved urban services, clean energy and sustainable economic growth.

The success of SCM lies in the capability of city administrators to come up with well thought out plans and a systematic implementation strategy. This can only be ensured when decision makers understand the hierarchal nature of the urban setup. For more realistic implementation of any urban intervention, micro to macro level components of the built environment need to be appreciated. Interventions are placed at the appropriate level of city hierarchy, will give greater results and optimize efforts at the same time. Building being the micro level aspect, is the lowermost segment that collectively forms a neighbourhood and similarly neighbourhoods combine to form city. Therefore, implementation strategies should be tailor-made to correspond to specific conditions, making them more viable and easy to implement.

ICLEI - Local Governments for Sustainability is a world's leading association of more than 1,500 metropolises, cities, urban regions and towns. ICLEI South Asia - the South Asian arm of ICLEI - Local Governments for Sustainability, aims to build and serve a regional network of local governments in South Asia to achieve tangible improvements in regional and global sustainability through local initiatives. ICLEI South Asia has been working with several Indian cities, who participated in the first ever Smart City Challenge of India. ICLEI South Asia is extending its technical support as a hand holding agency to the cities of Udaipur, Jaipur, Kakinada and Vishakhapatnam, with support from the Shakti Foundation.

Intent of Taking up the Measure for the Project

While developing SCM plans and proposals, it was realized that there are many policies, programs, projects measures that already exist across cities, departments and sectors that address the newly defined Smart City goals. There is a visible gap between the key players involved in SCM and the available information such as documentation, case studies related to the development of smart sustainable cities. On one hand a good amount of information is available at various locations in form of project documents and global experiences. On the other hand, there is no single platform that offers access to all the information to smart city stakeholders to access this information and understand the importance of hierarchy of an urban setup in terms of buildings, neighbourhood and city for smooth implementation of projects.

To bridge the multi-dimensional gaps between the on-going and new efforts, existing policies and new frameworks and available information and new plans, ICLEI South Asia has developed a smart city web tool. The web tool provides its users knowledge of the existing legal framework, policies, toolkits, guidelines and best practices at state, national and international level. The tool intends to enable city administrators to make

informed decisions by providing them with in-depth know how of smart solutions and making them aware of future hurdles they may face such as implementation barriers or technical capacity.

While interacting with city government officials and other stakeholders during preparation of smart city proposals, it was realized that there is an urgent need for the actors to understand “urban hierarchy”. The hierarchy was created at different levels which comprised of providing information on individual buildings, neighbourhoods and city level for different sectors. For more realistic implementation of any intervention, micro to macro level hierarchy of the built environment needs to be understood. The details of level wise categories have been provided in figure 1.

Building Level	Building level category include independent dwelling unit, multi household unit such as builder flats or apartment building. This category may include building structure of any use such as residential, commercial, office, institutional, healthcare etc. The limitation of this category is governed by the requirement of statutory approvals required to erect and operate a building.
Neighborhood Level	This category as described above is collective form of building level. An area having various buildings may or may not be of similar use, a residential colony with various dwelling units, community buildings and supporting infrastructure, a gated settlement within a city etc. Apart from building per say neighborhood will also include local streets, roads, pathways, parks and common services such as street lights, sewer lines, water storage tanks etc. The extent of this category is limited to localized control by the sub authority and local people. This does not include centralized infrastructure such a main transit roads, trunk lines of water supply or sewerage, city level STP, WTP etc.
City Level	This category includes both neighborhood and building level elements along with connecting infrastructure and centralized services intended to serve at city wise basis. The city level can be defined as the jurisdiction boundary within which the urban local body is expected to administer. This may or may not include fringe areas depending upon the extent of dependency for urban resources from the official city area.

Figure 1.: Constituents of urban hierarchy

Interventions, when placed at the appropriate level of the city hierarchy, will optimize efforts leading to better results.

Location, Area

The webtool is applicable for any part / region of the country and the information can be accessed and modified (moderated) from anywhere, nationally and internationally. The current version of the webtool is developed with inputs from the state governments of Rajasthan and Andhra Pradesh. In-depth interactions have been carried out with city governments of Udaipur, Jaipur, Vishakhapatnam and Kakinada. The webtool includes state and city level documents such as policies, laws and government orders, having a direct or indirect impact on the smart city development. Though developed with inputs from selected cities and states, the webtool is useful for any city and state throughout the country.

Process Steps Followed

The web tool comprehensively showcases case studies and project reports through which stakeholders can understand their roles and responsibilities. Technical documents, implementation guidelines and toolkits aim to provide in-depth know how of each smart intervention. Listing of existing policies, acts and legislations at national and state level aim to provide knowledge of existing legal framework. In a scenario where no supporting legal framework is available, the tool also recommends best suited legal frameworks available from other cities and countries.

The first step in the development of the framework involved compilation of all available information in a systematic manner. An exhaustive exercise of data collection has been carried out and relevant documents in form of laws, policies, government orders, guidelines etc. have been compiled. The information was then arranged in the form of a categorised database. The documents collected have been categorized under five resource sectors - Energy, Water, Transport, Land and Waste Management (Refer Figure 2). The user base of this web tool is highly diversified and spans across experts to citizens. To make it easy for all user groups to use the Web Tool, a three-tier, step by step information filtering system has been developed. The first tier comprises of the sector itself, followed by the level of intervention i.e. level of urban hierarchy at which project needs to be implemented. The third tier consists of desired changes or area of improvement for which intervention needs to be planned such as reduction in demand, foster renewables, conserve, reuse and so on. The available information can further be refined by sorting information by nature of document and source of information such as national, international, local and regional.

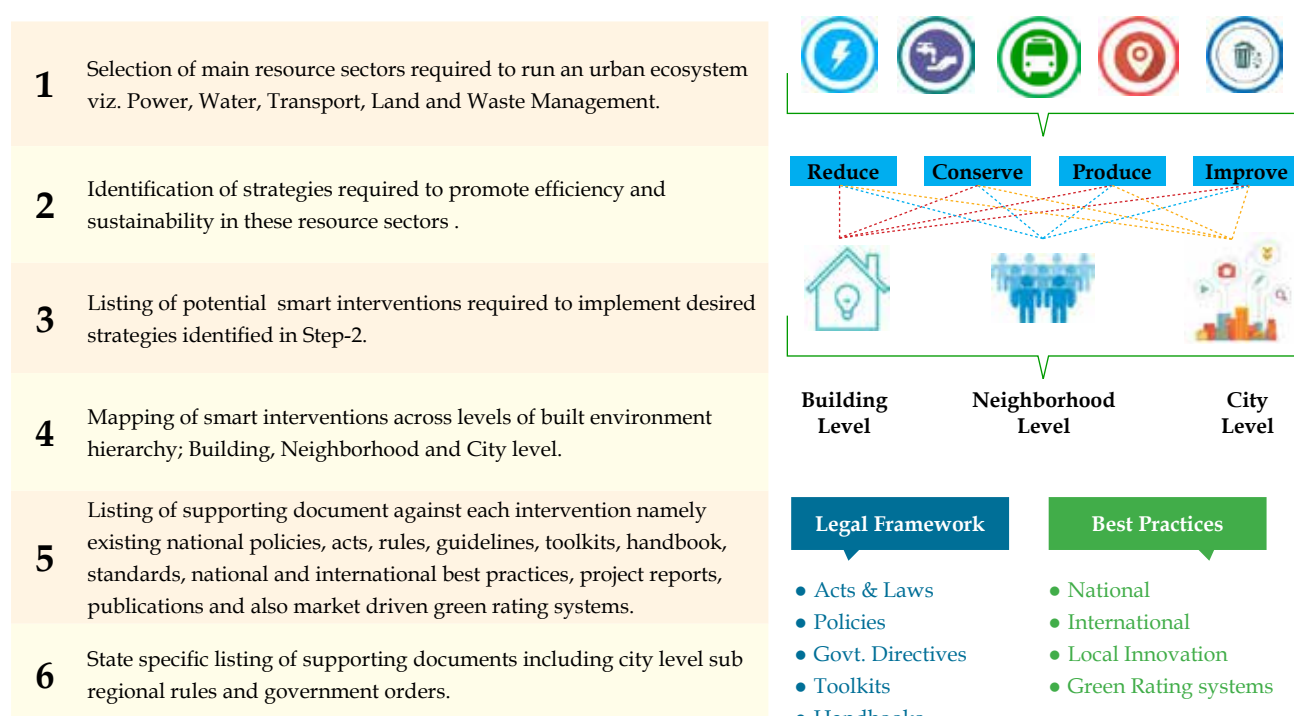


Figure 2.: Framework Profile on Availability of Information for Webtool

Smart city Web Tool can be Accessed in 5 Simple Steps

1. Select the category of resource: power, water, transport, land and waste
2. Select the change you want to bring: reduction in demand, conservation, production or improvement
3. Select the level of project implementation: city, neighbourhood and building
4. Look for type of document: acts, laws, policies, government orders, toolkit handbooks and green building rating systems
5. Select from: international, national and regional examples

Client, Stakeholders, Beneficiaries

The smart city web tool is a support application for smart city stakeholders involved in planning and implementing smart city projects. The web tool is useful for a large and varied set of users, ranging from city officials, government departments, government institutions, researchers, civil society members, NGOs and citizens as well. It is expected that with the help of the web tool, the stakeholders especially city governments will be able to develop a better understanding on their roles and responsibilities.

Way Forward

The smart city web tool aims to not only collate all the information already existing but also make it available in an easy to browse framework, thus making the entire process of knowledge sharing more easy and interactive. With this web tool, cities will also be able to analyse the policy gaps and develop their own tailor made solutions, building on the lessons learnt from other cities and countries. The web tool is an open source knowledge portal, thus making it accessible to any person who is interested in knowing the hierarchal placement of smart city interventions. This unique feature of the web tool also allows its users to give their feedback and comments on the information made available on the portal. This feedback will help web tool moderators to constantly update the Tool with more information. This two-way communication will thus make the knowledge base of the portal a constantly evolving and developing one. Representatives of Municipal Corporations, Government Organizations, National and International NGOs, Multilateral and Bilateral agencies, Institutions and Civil Society Groups, among others, can contribute to the Tool. Contributors can share links to any relevant policy, legislation, report or good practices or even upload the documents. The contributions are made available on the web tool, post review.

The tool is available at <http://www.smartcitywebtool.org/> and will continue as a live web-based tool that can be regularly updated and enriched with new resources. The project team aims to link it with similar resource centres such as the Smart Net, developed by National Institute of Urban Affairs.