

POLITECNICO DI TORINO
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Master of Science in Sustainable Architecture
Honors theses

**A *Toolkit* for sustainable demonstration projects.
The experience of the Europe-China Clean Energy Centre and the EURUMQI
Demo Zone project in Urumqi, Xinjiang**

by Michela Delbosco

Tutor: Roberto Pagani

Co-tutor: Alessandra Zanelli

The increasing need for a sustainable energy development in China, in a situation where extreme energy consumption and pollutant emissions are almost an inborn characteristic of urban and metropolitan areas and the unbearable growth of cities is unbalanced and out of any control, is a primary challenge for the nation. Moreover, the complex Chinese climate and environment add the need for addressing climate change to the existing energy-related problems.

The *12th Five-Year Plan for Renewable Energy Development* (2011), develops the concept of green and low-carbon development. Additionally, it promotes the deployment of key demonstration projects for energy conservation and low-carbon pilot projects, and the development of a circular economy.

In such a framework, a five-year cooperation project between the European Union and China, called *Europe-China Clean Energy Centre* (EC2), was launched in March 2010, with the aim of promoting an increased introduction and adoption of clean innovative technologies in China and supporting the Government's efforts to shape a more sustainable, environmental friendly and efficient energy sector.

One of the principal activities of EC2 is the promotion of technological cooperation and business between European Union and China through the setting up of *Demo Zones*, which are namely demonstrative actions concentrated in specific geographical areas.

To test the concept of Demo Zone, EC2 was assigned the challenge of designing a development strategy for Urumqi, capital of Xinjiang Autonomous Region, leading city in northwestern China and currently one of the most polluted cities in China and in the world.



Urumqi City, Xinjiang

EC2 is drafting a large-scale energy-oriented masterplan for the Demo Zone with a 2030 timeframe, promoting partnerships among the Urumqi Government, public authorities and European private companies.

The Demo Zone is, first of all, a methodological challenge characterized by an intrinsic complexity. In order to cope with this, a set of methodological tools called *Toolkit* has been drawn up and it is being tested in the Urumqi Demo Zone.

The Toolkit is based on selected successful EU methodologies to support the design of urban demonstration projects in the most efficient, effective and sustainable way. It represents a set of planning tools specifically selected for helping Chinese decision makers, managers and technical staff at city level in decisional and planning processes, with the aim of developing the Demo Zone masterplan. Its structure includes four fields, connected to the main factors characterizing the transformation process, such as Decision Planning, Action Planning, Technology Planning and Business Planning.

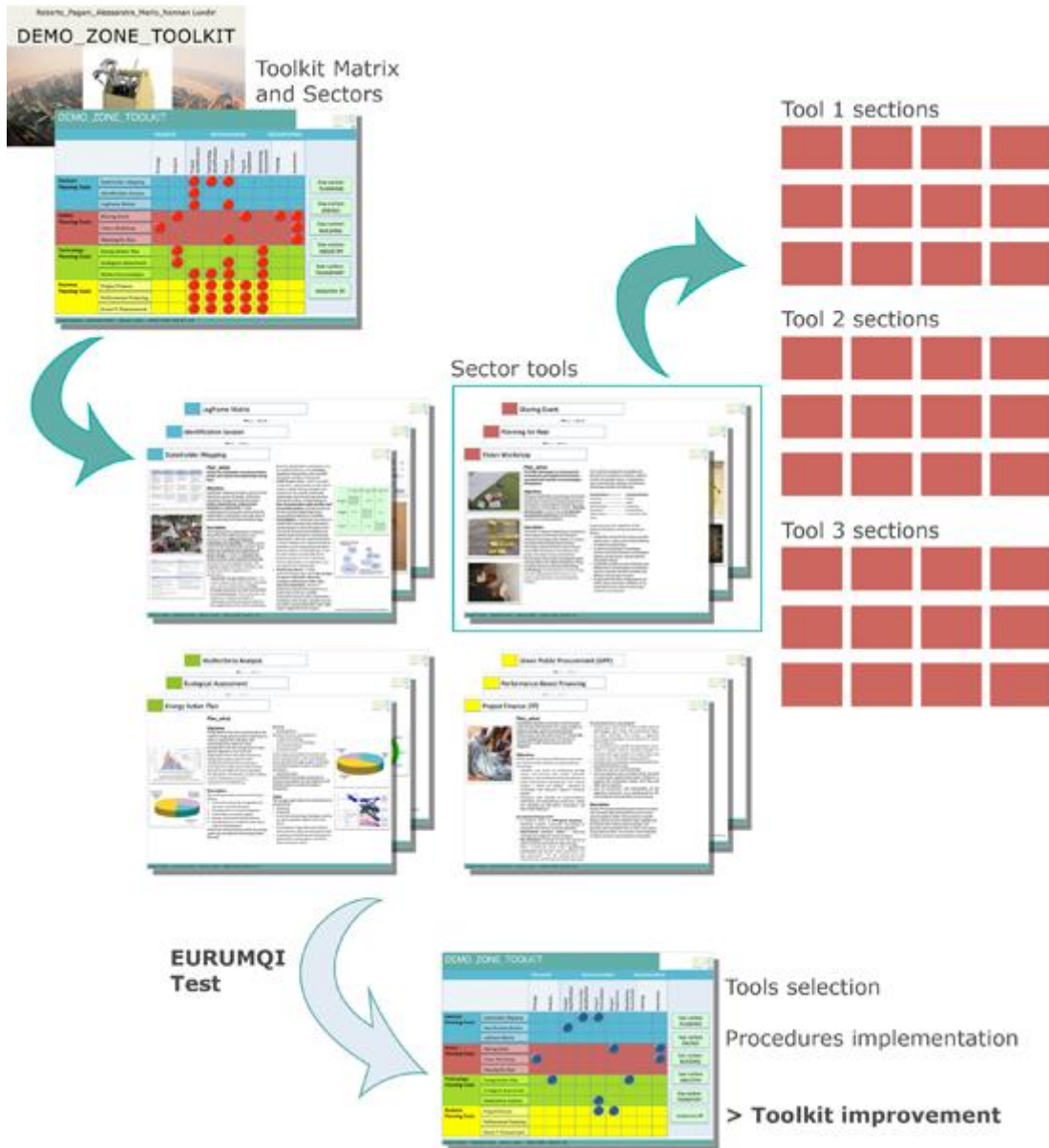
DEMO_ZONE_TOOLKIT		EC2										
		Research		Demonstration				Dissemination				
		Strategy	Analysis	Project Identification	Partnership Identification	Project Formulation	Project Implement.	Monitoring Assessment	Training	Awareness		
Decision Planning Tools	Stakeholder Mapping			●	●	●					low-carbon PLANNING	
	Identification Session			●								
	Logframe Matrix			●		●					low-carbon ENERGY	
Action Planning Tools	Sharing Event		●				●		●	●	low-carbon BUILDING	
	Vision Workshop	●								●		
	Planning for Real					●				●		
Technology Planning Tools	Energy Action Plan		●					●			low-carbon INDUSTRY	
	Ecological Assessment		●			●		●			low-carbon TRANSPORT	
	Multicriteria Analysis			●	●	●		●				
Business Planning Tools	Project Finance			●	●	●	●	●			resources 3R	
	Performance Financing			●	●	●	●	●				
	Green P. Procurement			●	●	●	●	●				

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Toolkit matrix, showing the tools classified according to the planning field and to the design phases where they are needed

The aim of this thesis is focusing on the key aspects of the Demo Zone Toolkit testing, as a new innovative instrument for urban demonstration projects implementation, analyzing the main outcomes and its direct impact on the sustainable development of Urumqi.

The Toolkit has been thought as an instrument for providing support at different levels and for diversified users. Moreover, for each tool there should be an easy way to add new information or experiences to the existing ones. For this reason, its structure is based on modules of 4 sheets each, addressed to specific needs and with a different level of detail, making it possible to easily identify where a specific information is located, as well as to add new ones. Following an incremental principle, each tool has 3 base sections: *Synthesis*, *Training* and *Practice*.



Modular structure of the Toolkit

In respect to what emerged from the first test of the Toolkit within the Demo Zone, its great potentiality lies in the fact that it couples flexibility and versatility with a standard documented base on which organizing community planning strategies. It is a single decisional and planning instrument collecting and systematically organizing methodologies and good practices through an easy-to-use and comprehensive model.

For further information, e-mail
 Michela Delbosco: miki.delbosco@gmail.com