District Cooling: Lessons learned and opportunities for India



DISTRICT ENERGY IN CITIES

A GLOBAL INITIATIVE TO UNLOCK THE POTENTIAL OF ENERGY EFFICIENCY AND RENEWABLE ENERGY

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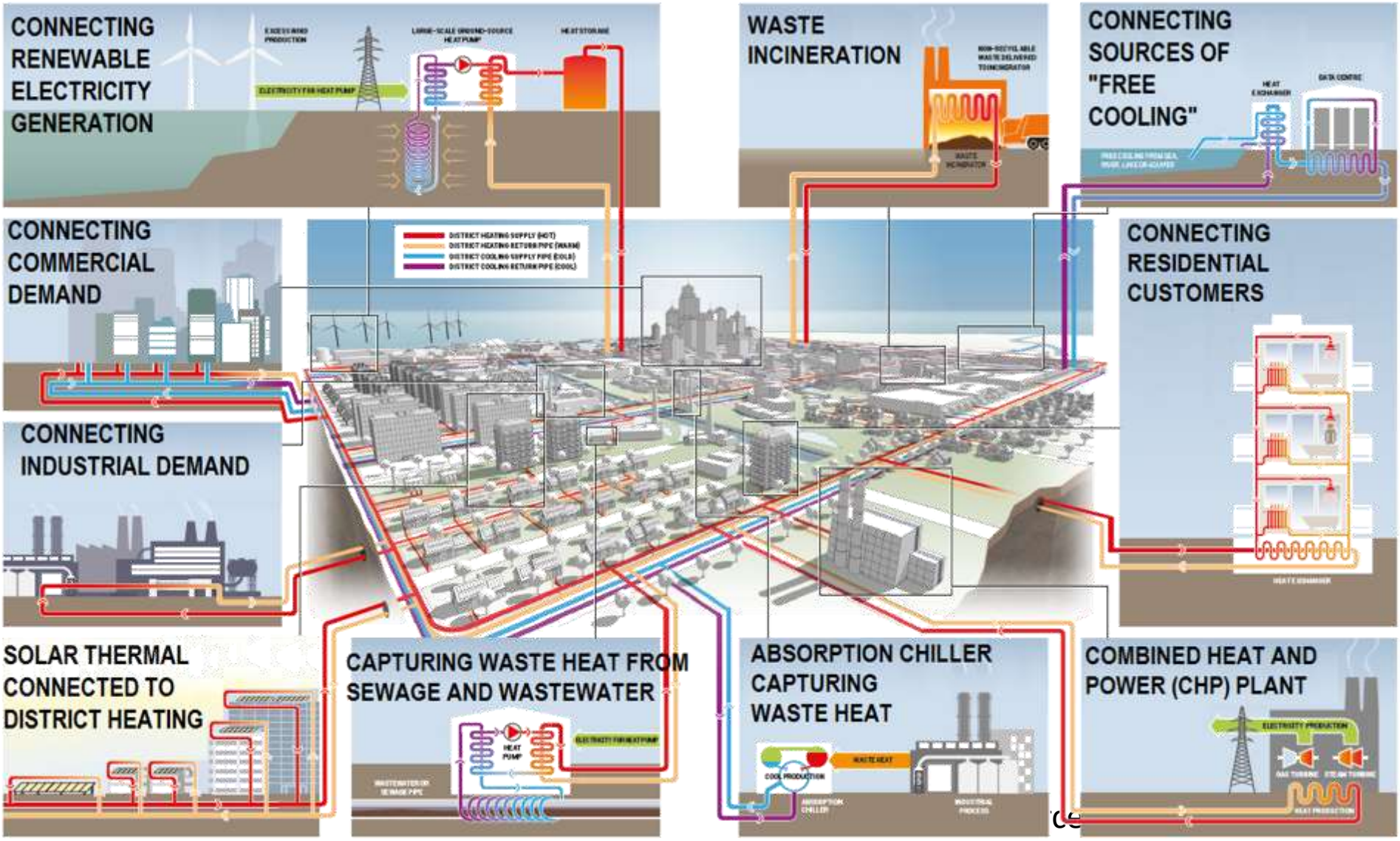
Benjamin Hickman, Regional Technical Advisor, UN Environment

Delhi, 12th December 2019

DISTRICT ENERGY IS MORE THAN JUST COOLING BUILDINGS

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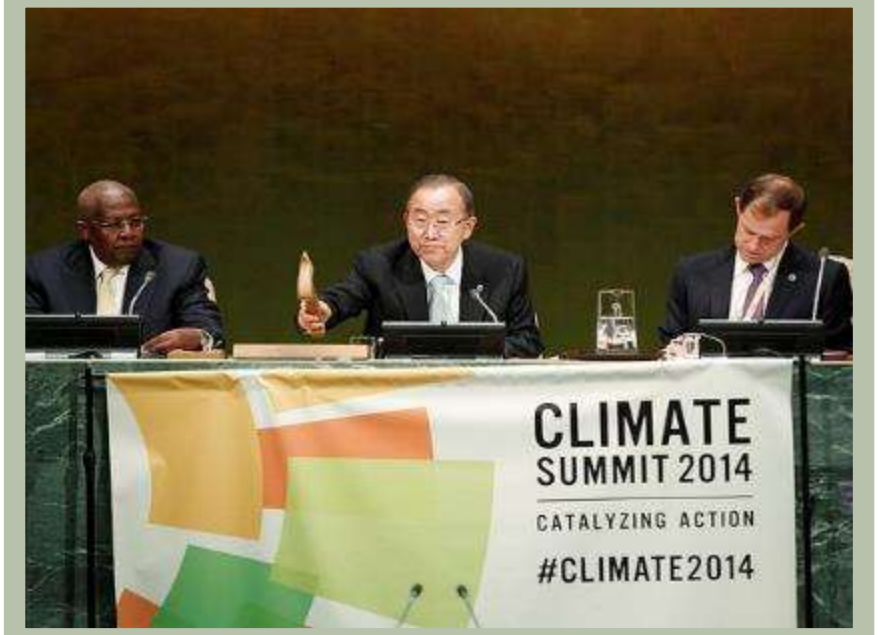
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GLOBAL ENERGY EFFICIENCY ACCELERATOR PLATFORM

SUSTAINABLE ENERGY FOR ALL

Accelerators: Buildings, Transport, **District Energy**, Lighting, Appliances and Equipment, Industry

Objective: Double Global Rate of Improvement of Energy Efficiency by 2030



Funded by:

gef

DANIDA

MINISTERO DELL'AMBIENTE

KIGALI COOLING EFFICIENCY PROGRAM

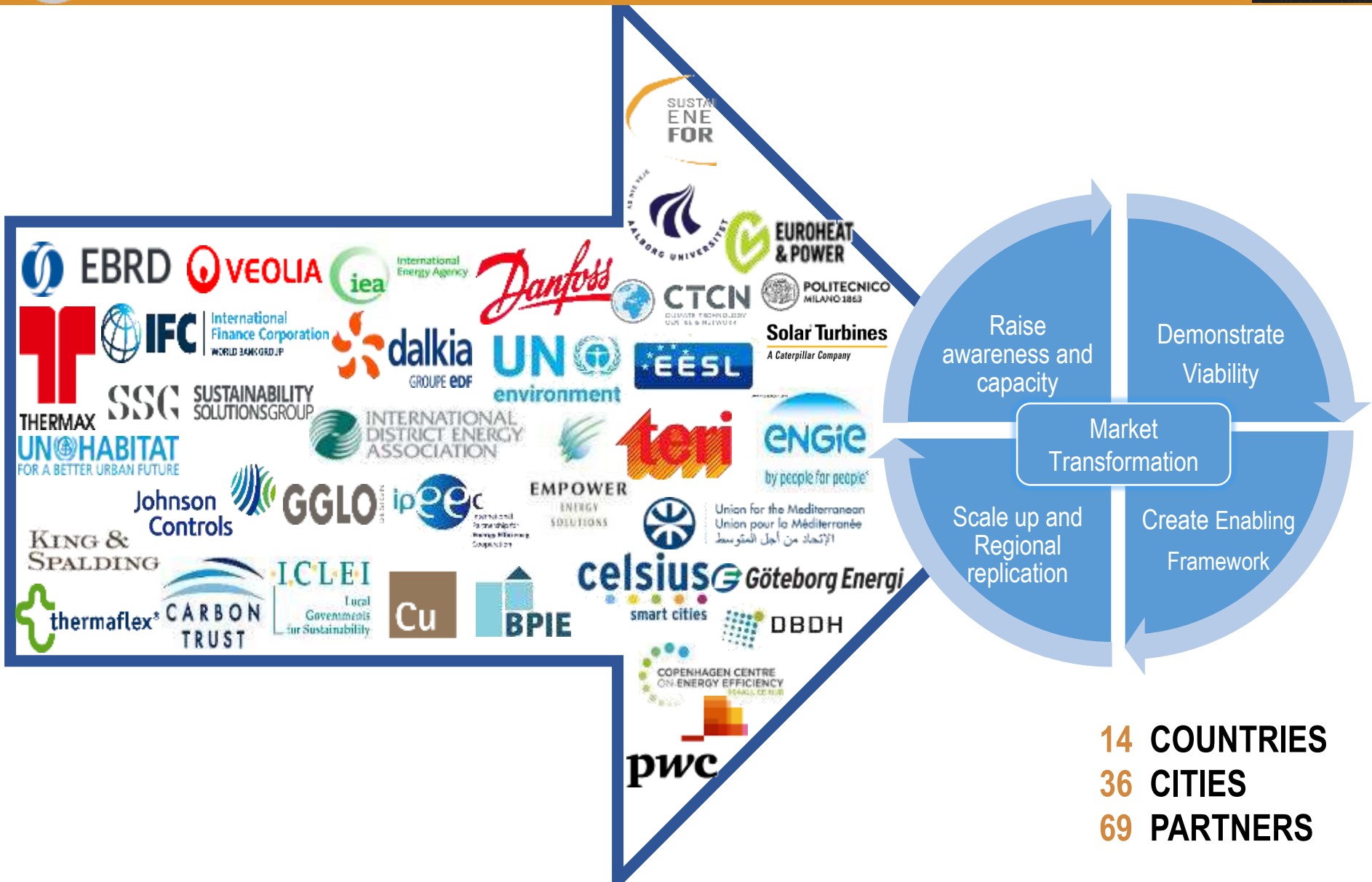
National Coordinator for India

EESL

PUBLIC PRIVATE PARTNERSHIP MODEL

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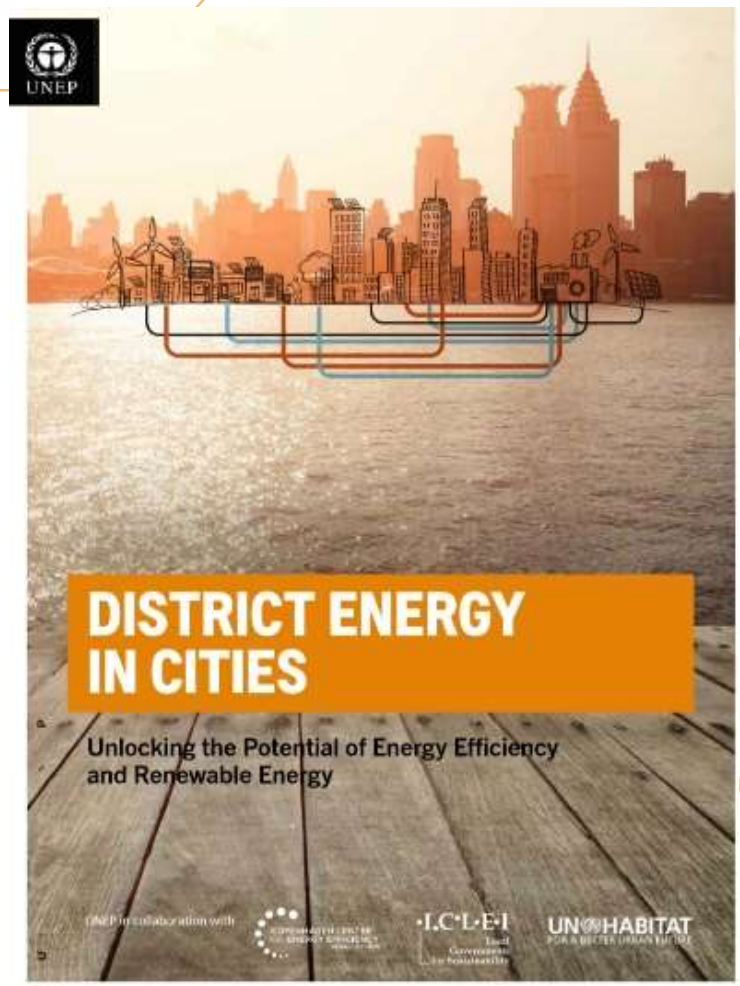


14 COUNTRIES
36 CITIES
69 PARTNERS

LAUNCH OF A TECHNICAL GUIDE

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10-step Methodology and Key Steps

*"In launching this report we want to draw the **attention of the world's decision makers**, mayors and leaders at the community level **to the importance of district energy systems**."*

- Achim Steiner, UN Environment Programme Executive Director. Launch of the District Energy in Cities Report - Paris, 25 February 2015

PILOT COUNTRIES

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Key finding: Local governments are the most important stakeholder in delivering district energy.

Various roles:

- Planners and regulators
- Facilitators of finance
- Coordinators and advocates
- Consumers of energy and providers of infrastructure and services.

But globally local governments lack:

- Empowerment
- Capacity
- Funds



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Recommendations

1. Dedicated support programme to local governments

- Tailored methodology, tools, trainings etc.
- Grants and expert support
- Linked to the Smart Cities Mission

Pilots: Thane, Rajkot, Amaravati

2. Parallel programme bringing projects through:

- private real estate sector
- private energy companies
- industry
- DISCOMs
- EESL, NBCC, etc.

10 STEP METHODOLOGY

CITY-WIDE	AREA-BASED
LOCAL STRATEGY	PILOT PROJECT DESIGN
COORDINATION	BUSINESS MODEL
MAPPING	PROCUREMENT
PLANNING	FINANCING
LOCAL POLICY	MRV

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Hiranandani Estate, Thane







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Ghodbunder Road DCS, Thane



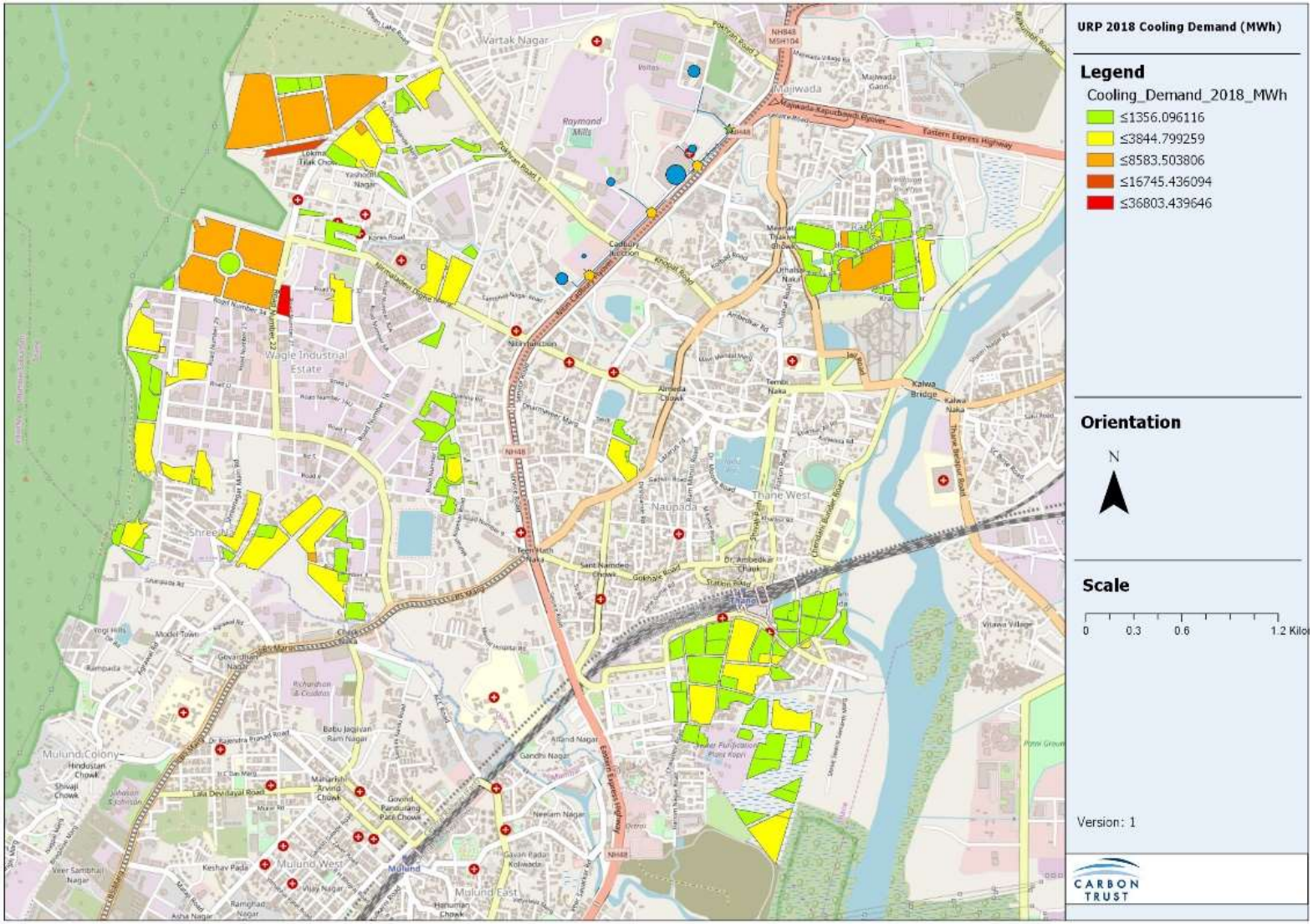




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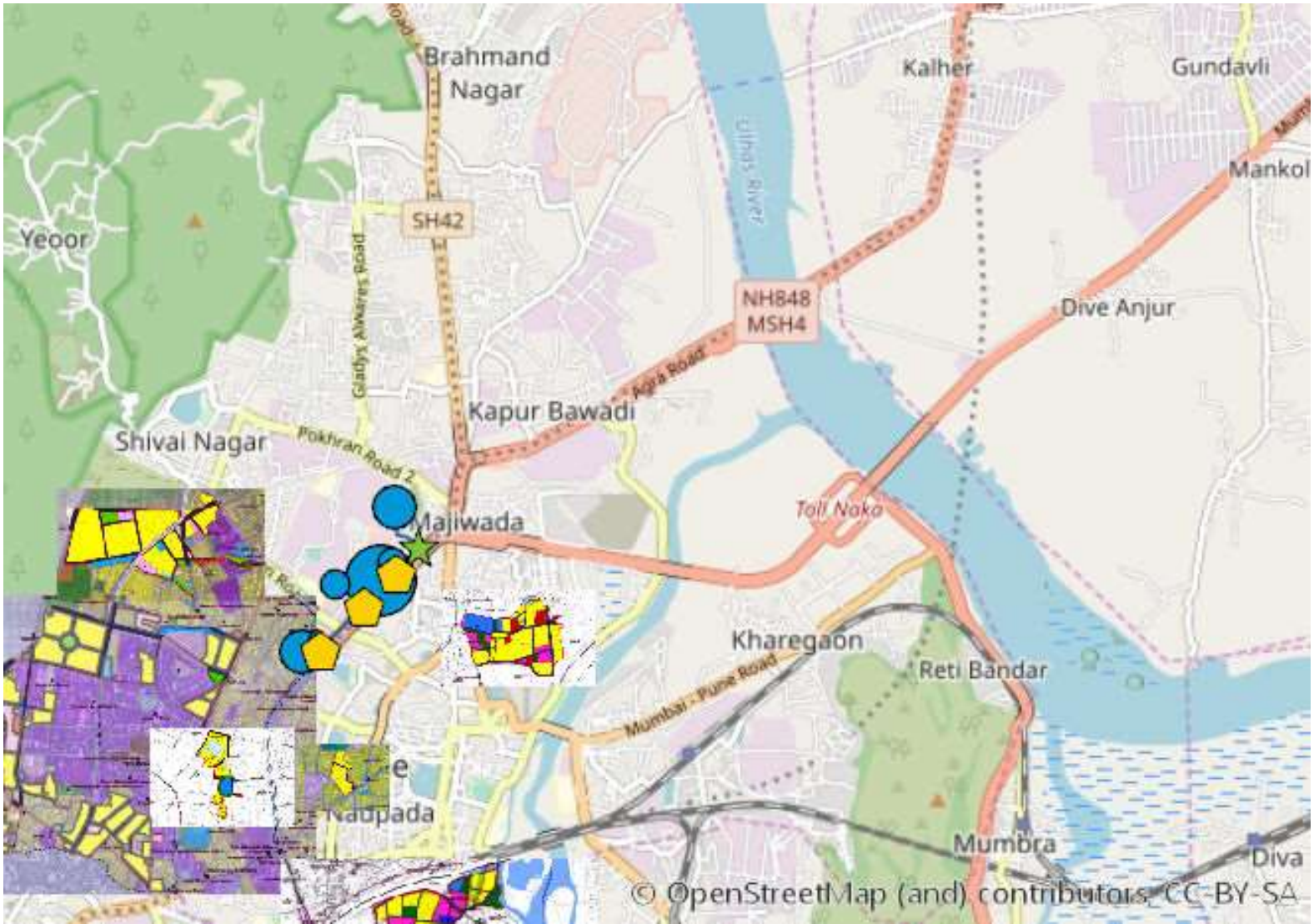
Energy Mapping, Thane



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Energy Mapping, Thane



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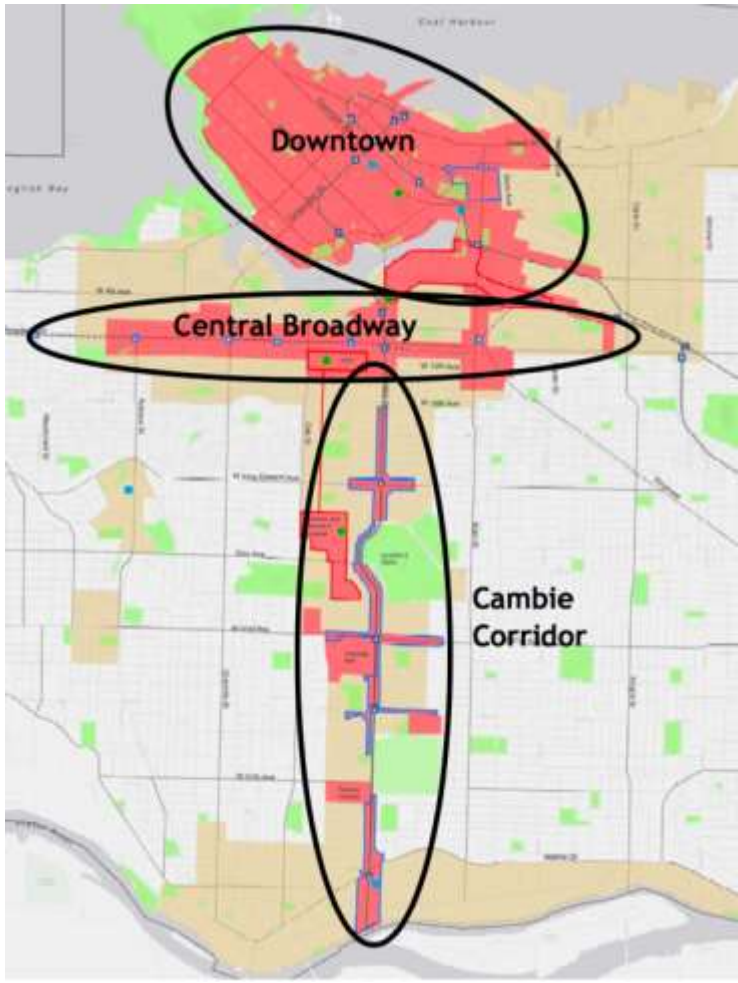
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Key finding: Incorporate district energy into urban planning and smart city concept

India's real estate growth is huge opportunity and challenge

District cooling should develop alongside major real estate projects

Look beyond real estate to industry, cold chain, waste sector etc.

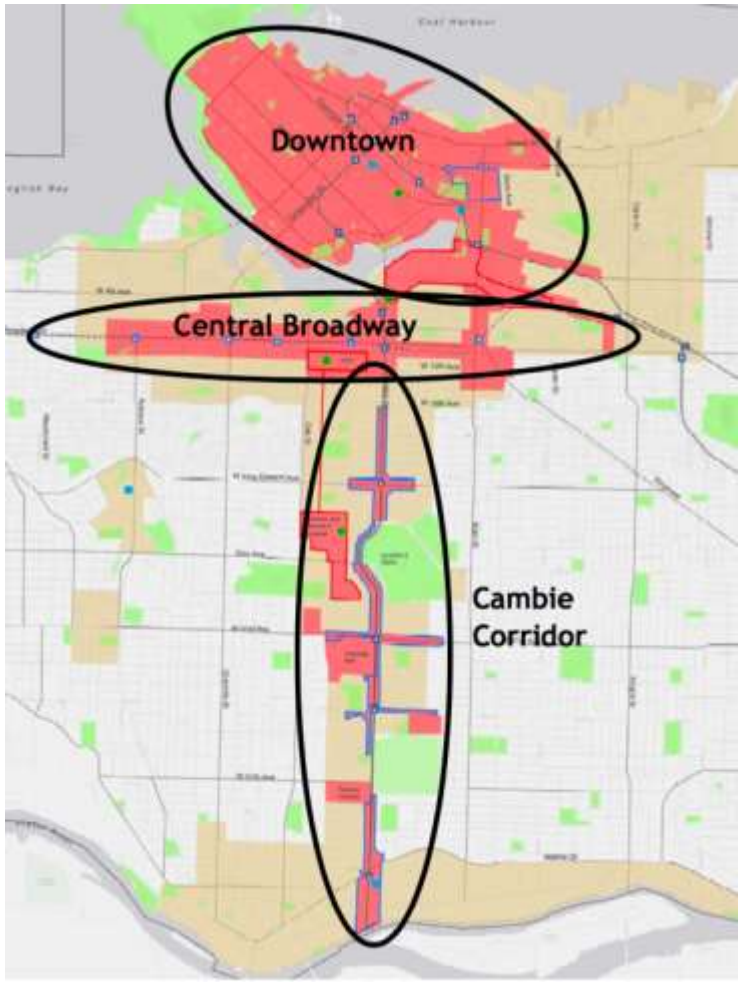


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Recommendations

1. Define district energy as a public service and plan alongside other utilities
2. Use planning policies to mandate assessment/development of district energy in dense developments
3. Presumption for district energy in public real estate development



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Government Complex, Amaravati

Development of District Cooling System for Amaravati Government Complex in Amaravati, Andhra Pradesh on PPP Basis

REQUEST FOR PROPOSAL (RFP)

BID DOCUMENT

VOLUME - I

INSTRUCTIONS TO BIDDERS

NIT No. 16/PROC/Addl. Director/Infrastructure/DCS/2018

Client

Andhra Pradesh Capital Region Development Authority
Lenin Centre, Governorpet, Vijayawada – 520 002
Andhra Pradesh – India.

May, 2018



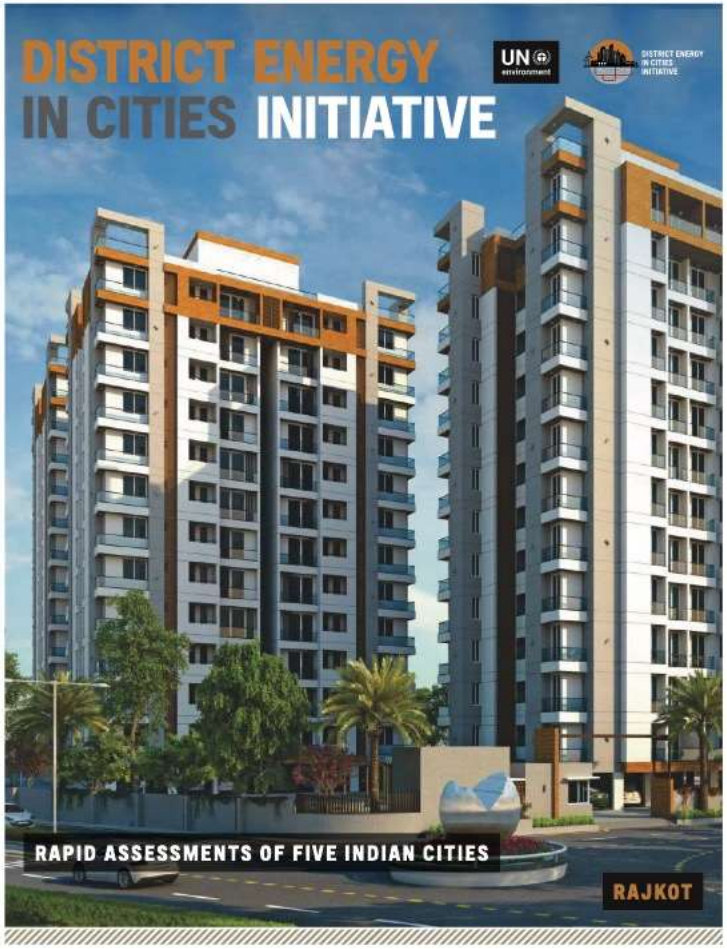
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Smart City Area, Rajkot

1. Project and city-wide analysis
2. 2 workshops
3. Numerous meetings





Contributing to:

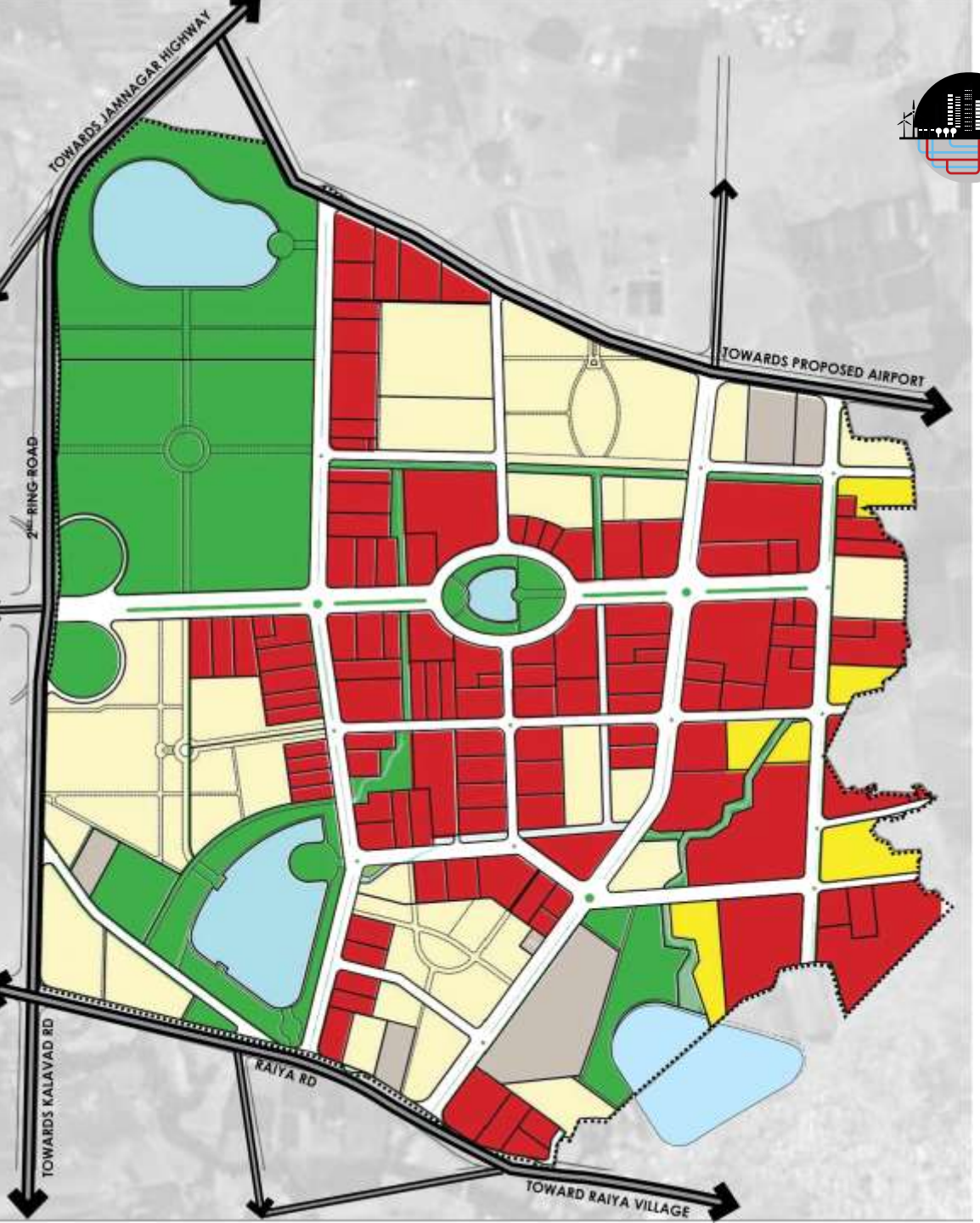


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Smart City Area, Rajkot

1. **Masterplan**

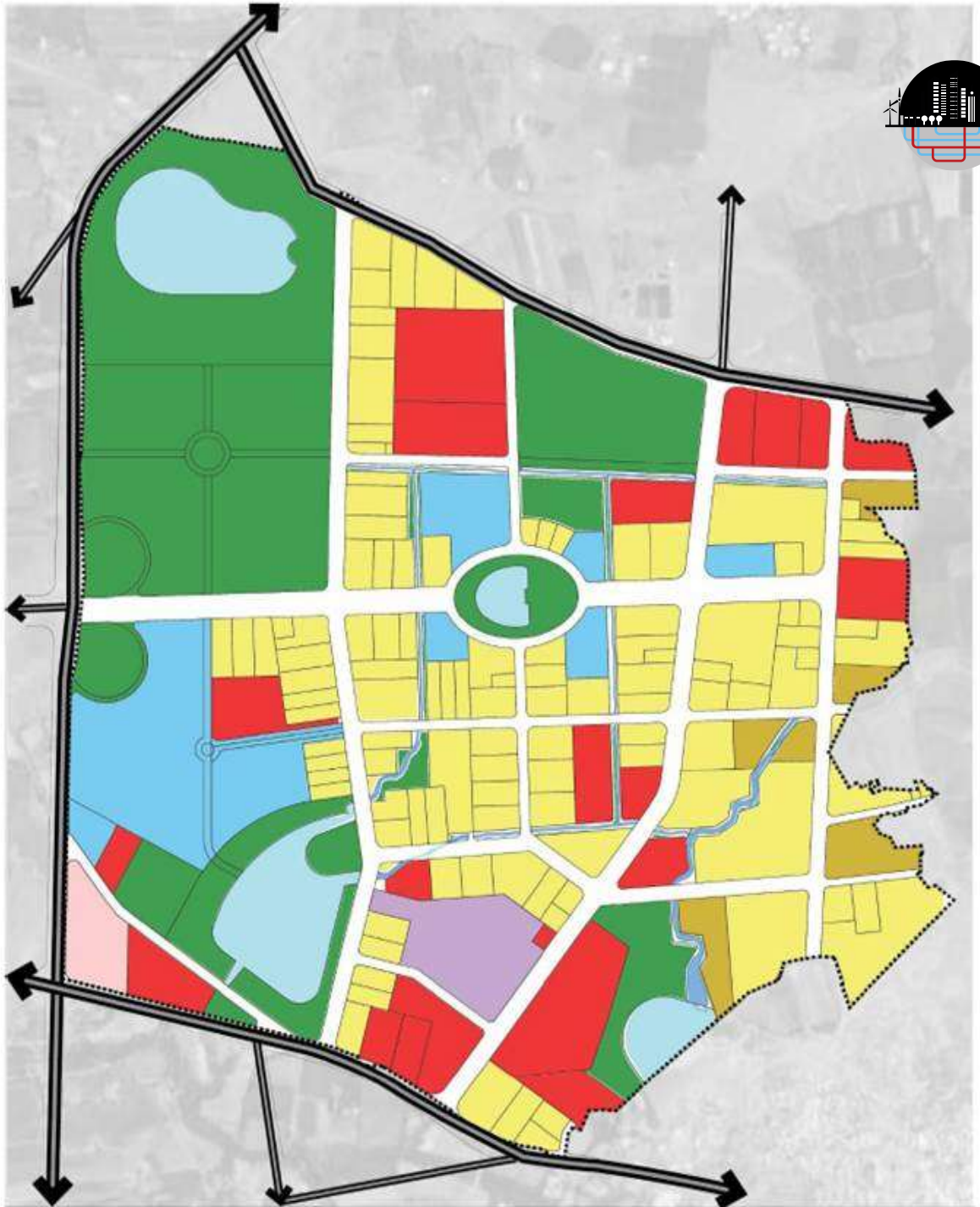


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Smart City Area, Rajkot

1. **FSI Allocation**



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Smart City Area, Rajkot

1. Land use plan

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Smart City Area, Rajkot

1. District cooling network plan

First city to incorporate DCS in smart city project

$50 million investment
32,000 TR

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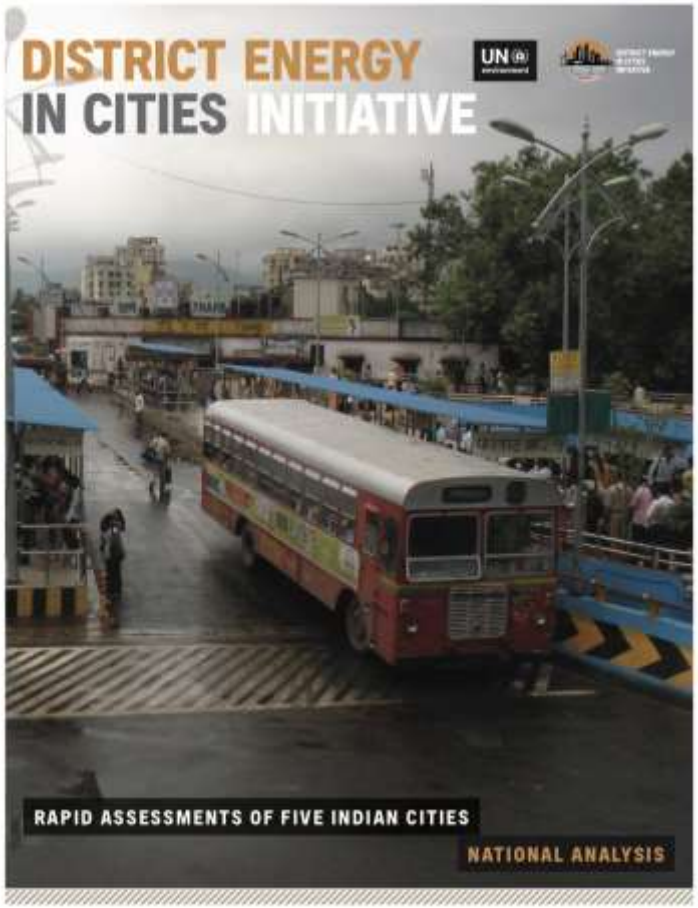
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Key finding: Supportive policy framework in exchange for high sustainability standards and public benefits

Public support to projects is crucial for long-term expansion

Can return higher environmental standards and connection of priority consumers

Wide-range of policy frameworks globally – at this stage focus on getting projects done

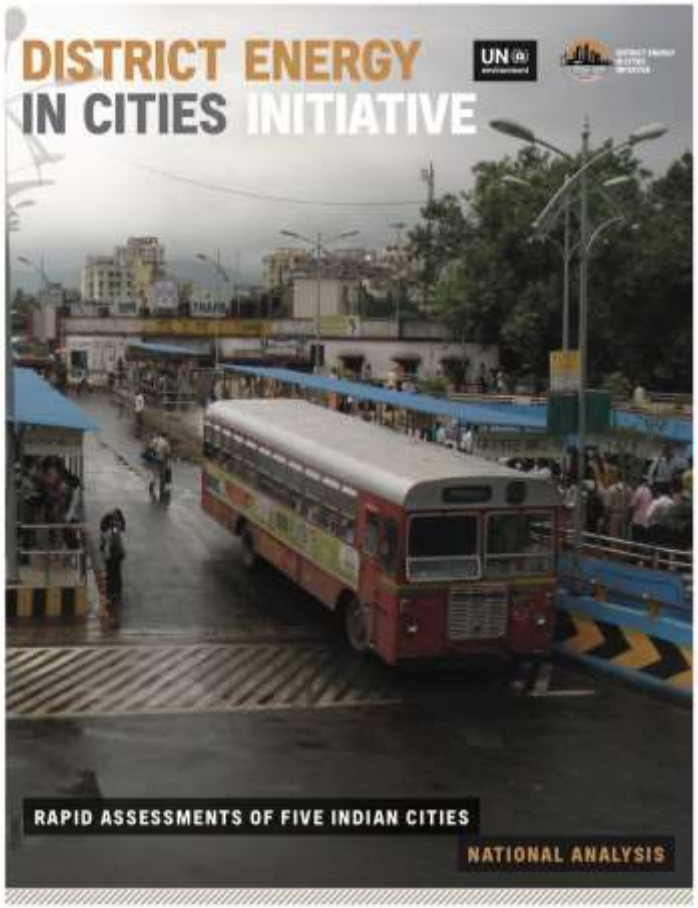


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Quick-win recommendations:

1. District cooling guidelines to smart cities, planners, real estate etc.
2. GST incentive on chilled water sales linked to efficiency
3. Incentivise thermal storage and trigeneration
4. Central government support and advisory unit
5. Dedicated grants and finance
6. Incorporate into national programs



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Thank you!

For more information on the District Energy in Cities Initiative and to become a partner, please visit the website or contact:

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http://www.districtenergyinitiative.org