2019 Innovation for Cool Earth Forum (ICEF)

Concurrent Sessions 2: Green Urbanization

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United Nations Industrial Development Organization (UNIDO)
UNIDO’s Background

• 1961: Centre for Industrial Development (CID) created
• 1966: UNIDO established as autonomous body within the UN
• 1985: UNIDO became a specialized agency of the United Nations

• Today UNIDO is a specialized agency with:
  • 170 Member States
  • 3 policymaking organs
  • 1 executive head
  • Own regular budget
  • 48 regional hubs, with regional and country offices covering 156 countries
UNIDO’s Mandate:
Inclusive & Sustainable Industrial Development (ISID)

Thematic Areas:
- Creating shared prosperity
- Advancing economic competitiveness
- Safeguarding the environment

Achieving equitable & sustainable social, economic and environmental growth while mainstreaming women and youth.
Industry, SDGs and Climate Action

Promoting sustainable energy solutions for developing productive capacities, industrial competitiveness and climate action:

- Jobs Creation
- Business Models
- Technology Transfer
- Partnerships
UNIDO and sustainable cities

• Synergies can be created between sustainable and inclusive industrialization and city development, such as decoupling economic growth from environmental degradation, while creating employment and fostering clean energy innovation.

• UNIDO’s approach in supporting climate action at the urban scale is centered on urban-industry synergies for promoting low-carbon infrastructure and resource efficient urban economies.

UNIDO’s comparative advantage:

1. Clean energy innovation
2. Economic empowerment
3. Low-carbon industrialization
4. Climate action
What UNIDO offers for sustainable cities?

**Low Carbon Infrastructure and Services**
- Energy systems and smart grids
- Standards for carbon neutral infrastructure
- Low-carbon urban mobility
- Reduce hazards and develop energy recovery from waste streams

**Urban Industrial Systems**
- Green value chains and cluster approaches
- Eco-industrial parks and urban industrial symbiosis
- Renewables and industrial energy efficiency
- Food-security, safety and agro-processing

**Hubs of Innovation**
- Clean tech and smart city solutions
- Start-up incubators and entrepreneurship
- Foreign and local investment promotion
- Creative and cultural industries development

**Inclusivity:** Gender mainstreaming and youth employment

**Resilience:** Adaptation and managing climate risk

**Partnerships:** Engaging cities, stakeholders, and the private sector
UNIDO Renewable Energy for Sustainable Cities

Demonstration & business models

Waste-to-Energy
- Municipal SW (thermal recovery for electricity / district heat)
- Sewage sludge / Organic waste (biogas for electricity and as CNG)

Rooftop Solar PV
- Unused urban space as power plants
- Also, solar PV (and wind micro turbines) for electric vehicle charging, paired with storage

Solar thermal
- Industrial applications
- Water heaters

Key elements of sustainable urban energy systems

Source: OECD/IEA 2016
UNIDO Energy Management Systems for Cities

City
1. Municipal Corporation
2. Municipal/Public Companies
3. Private companies providing regulated services
4. Private companies
5. Citizens/Households
6. Others

Industry
1. Public companies
2. Private companies
3. Others

Rationale
• EnMS-ISO 50001 also for Public & Municipal organizations
• Cities authorities responsible for large energy consumption as well as for energy planning
• Cooperation between cities authorities & industry for integrated energy planning & sustainable development
UNIDO Energy Infrastructure for Electric Mobility

Power Generation (clean coal or RE)

Smart grid

Charging infrastructure

Electricity flow

Information Communication Technology

Information flow

EV

ITS
Sustainable Cities Integrated Approach Pilot in India

- **GEF Grant:** 13.5 M USD  
  **Co-Financing:** 100 M USD
- **GEF Implementing Agency:** UNIDO
- **Executing Partners:** Ministry of Urban Development, Municipal Corporations

**Objective/s**

- Integration of sustainability strategies into urban planning and management, to create a favorable environment for investments in infrastructure and service delivery
- Contribute to national cities missions: Swachh Bharat, 100 Smart Cities, AMRUT
Integrated Adoption of New Energy Vehicles in China

- GEF Grant: 9 M USD  Co-Financing: 116 M USD
- GEF Implementing Agency: UNIDO
- Executing Partners: Ministry of Industry and Information Technology (MIIT)

- Objective/s
  - Facilitate and scale up integrated development of New Energy Vehicles (NEVs), by developing the charging infrastructure system in the cities of Shanghai and Yancheng
Outlook: Cities as hubs of Innovation

• Cities will continue to be on the frontlines of development and climate action
• The convergence of concepts and technology:
  • Deep decarbonization of industry
  • Circular economy
  • Industry 4.0
• The entrepreneurial city: meeting demand for jobs and innovation through supporting the creation of SMEs
Thank you

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“If urban and industrial challenges are addressed jointly by urban and industrial stakeholders, policies and interventions can be better coordinated and aligned for achieving common purposes.”

**Nexus of Common Urban and Industrial Issues**

<table>
<thead>
<tr>
<th>URBAN</th>
<th>INDUSTRIAL</th>
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<tbody>
<tr>
<td>Urban infrastructure: electricity, transport, water and sanitation,</td>
<td>Infrastructure for industry: electricity, transport, logistics etc.</td>
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<td>Employment clusters and urban jobs</td>
<td>Clustering of competitive sectors</td>
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<tr>
<td>Cities in a nursery role, firm churning</td>
<td>Industrial innovation</td>
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<tr>
<td>Urban-based R&amp;D, IT and training institutions, education, human capital</td>
<td>Industrial upgrading</td>
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<tr>
<td>Clustering; proximity; co-location of industries; urban efficiency</td>
<td>Agglomeration economies</td>
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<td>Urban systems and SEZ</td>
<td>Industrial location matching</td>
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<tr>
<td>Urban land market functionality</td>
<td>Access to land</td>
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</tbody>
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Source: Urbanization and Industrialization (2017) . UNECA.
Urbanization-Industrialization Nexus

Key opportunities:
• Urban demand can be a driver of industrial development
• Diverse and connected system of cities can provide industrial location options
• Better functioning cities can provide larger productive benefits

Key priorities:
• Industrial policies should enable sector targeting
• Spatial considerations are fundamental for industrial policies
• Addressing the gaps—finance, institutions, knowledge and implementation
• Urban policies in support of industrialization

(Source: UNECA 2017)
Agenda 2030: Interlinkages between SDG 11 and other SDGs

(Source: UN Habitat 2018)
Paris Agreement and IPCC SR1.5

- Urban and industrial systems are intertwined through a number of connections and interdependencies (economic activity, tax income and employment)
- Necessary materials for mobility, buildings and food create connections between cities and industry
- Industrial-urban symbiosis exists when urban areas connect industrial parks/clusters within urban boundaries through exchange of heat, waste, materials and water
- Need for increased rate of material recycling and substitution of high carbon intensity products towards renewable materials to advance industrial transitions in urban areas

(Source: C40 and Global Covenant of Mayors for Climate and Energy 2018)