Building Smart Sustainable Cities

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# Envisioning a Sustainable Future...

"The industrial revolution saw huge changes in the way people socialised, worked and organised their family life and communities.

I see this opportunity through smarter cities as being the next revolution."

Dave Smith,
Chief Executive of
Sunderland City Council

International
Telecommunication
Union

Why Do People Move to Cities?

Cities and Population Trends
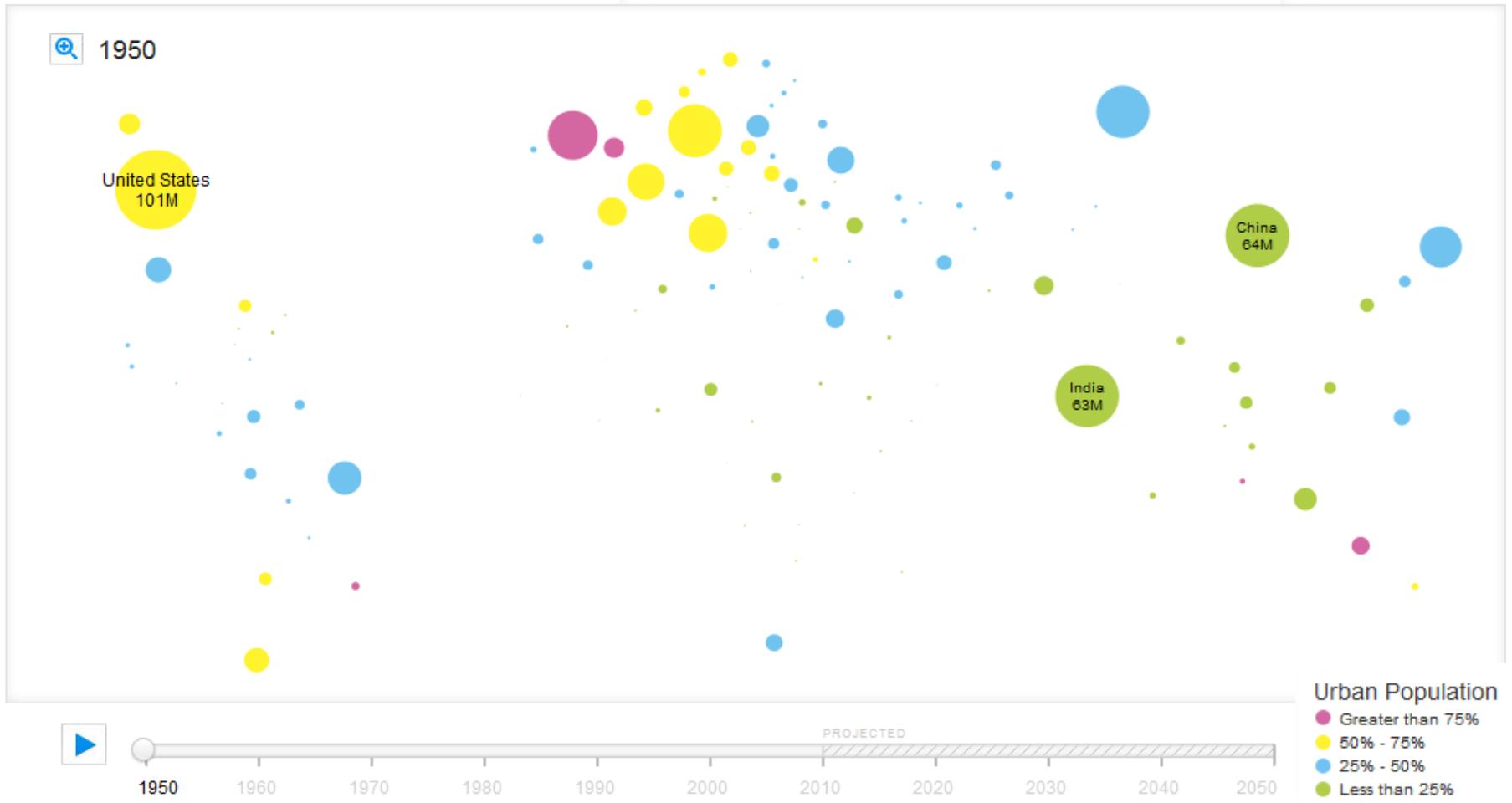
* UNICEF 2012: an urban population

Let us imagine....

Transforming tomorrow...

... smart thinking is here already!

Tomorrow's cities, today's technologies

Chengdu, China. Image: Imagined car-free 'Great City'. © Adrian Smith + Gordon Gill Architecture.

The Solaris Fusionopolis building in Singapore, an example of vertical greening.

Toyota City, Japan

Torino, Italy

International Telecommunication Union

ITU Activities on Smart Sustainable Cities
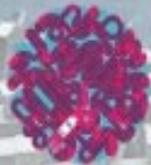
ITU-T Study Group 5
"Environment & Climate Change"

Q 13/5 - Environmental impact reduction including e-waste

Q 14/5 - Setting up a low cost sustainable telecommunication infrastructure for rural communications in developing countries

Q 15/5 - ICTs and adaptation to the effects of climate change

Q 16/5 - Leveraging and enhancing the ICT Environmental sustainability

Q 17/5 - Energy efficiency for the ICT sector and harmonization of environmental standards

Q 18/5 - Methodologies for the assessment of environmental impact of ICT

Q 19/5 - Power feeding systems

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Methodologies for ICT in Cities

ITU-T Study Group 5, Question 18

- General principles on
    - How to evaluate the environmental impact of ICTs in cities, or other urban areas with a focus on GHG emissions
    - How to assess the impacts of the use of ICTs in cities to reduce the GHG emissions of other sectors

CO_2

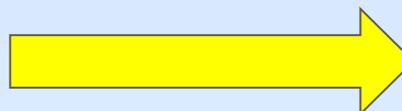Approval expected in 2013

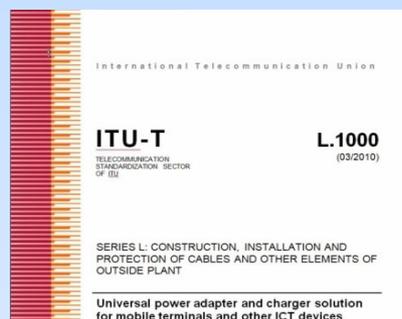International Telecommunication Union

Best Practices for Green Data Centers Recommendation ITU-T L.1300

Energy efficiency metrics and measurement for telecommunication equipment Recommendation ITU-T L.1310

Waste Management
with Smart ICT Standard

The case of Korea:
the quantification of GHG reduction effects achieved by ICTs

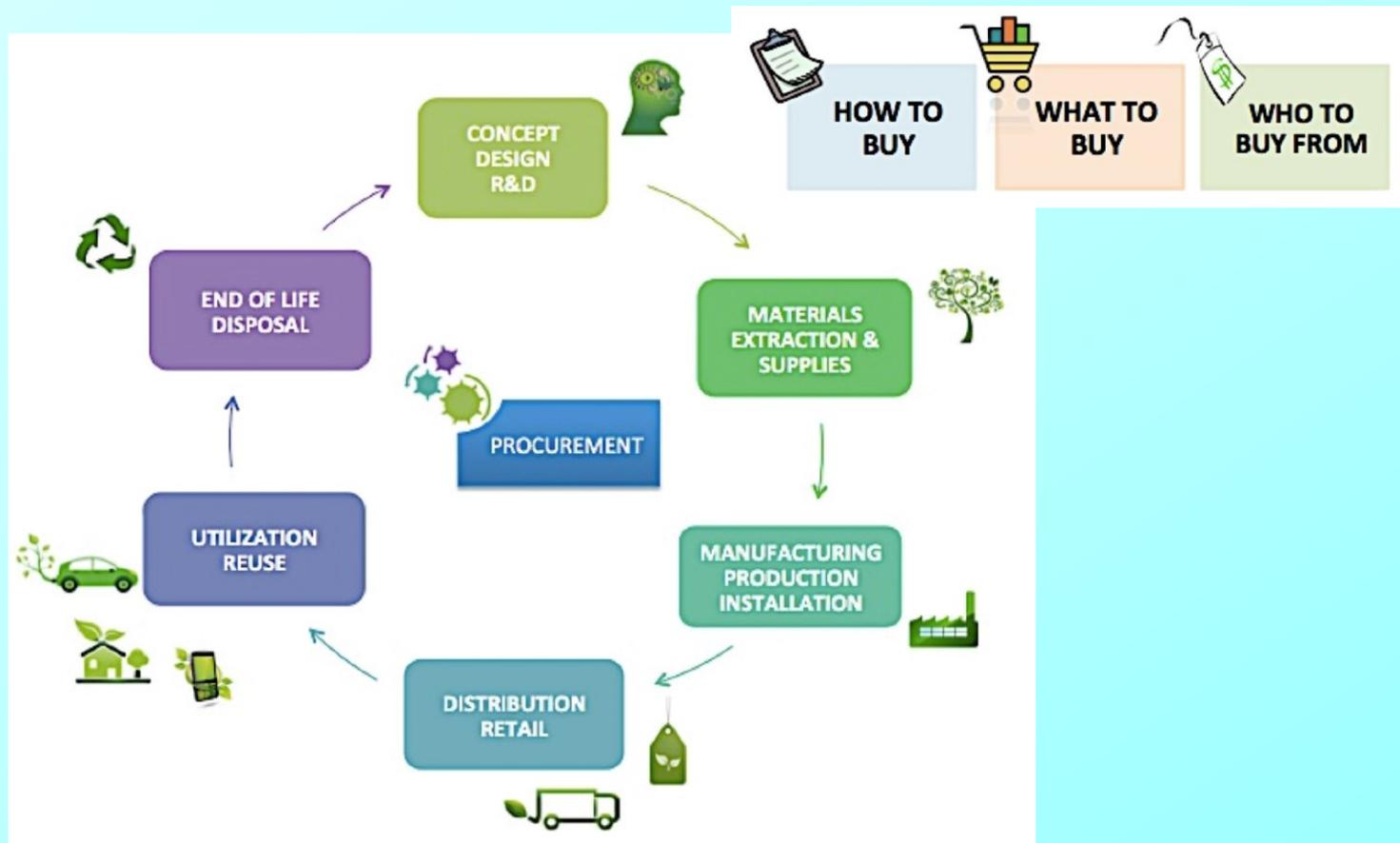# Italian Ministry of Economic Development-Genoa University-ITU report on

Boosting Energy Efficiency through Smart Grids

Boosting energy efficiency
through Smart Grids
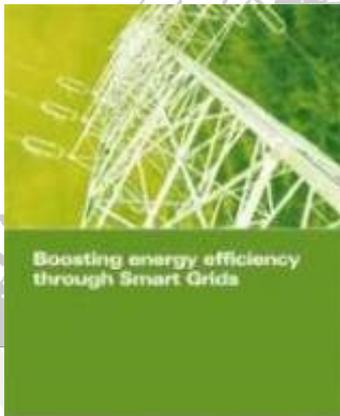
ETNO-ITU report on

Guidance on GREEN ICT Procurement

Smart Water Management through ICTs

ITU-T Study Group 5, Question 15 on

ICTs and Adaptation to Climate Change

Building a Water Resource Efficient Green Economy:

Luxor Call to Action

ICT as an Enabler for Smart Water Management
ITU-T Technology Watch Report
October 2010

Smart water management has become a key policy issue for the 21st century, as a growing number of factors are impacting the delivery of already scarce fresh water to millions of people. Economic growth, seasonal climatic conditions and rising population are all affecting availability of water resources. Moreover, a number of effects linked to climate change, such as lengthy droughts and extreme weather events, are worsening the situation. This ITU-T Technology Watch Report provides an overview of how ICT can be a strategic enabler for smart water management policies and surveys upcoming ICT standards that will enable smart water initiatives.

Toolkit on Environmental Sustainability for the ICT Sector

In Collaboration with ICT Industry and UN Agencies

Toolkit content:

Document	Summary
Introduction to toolkit	A business-led perspective on the use of sustainability in ICT organizations
Sustainable ICT in corporate organizations	Sustainability issues with the use of ICT products and services
Sustainable products	Sustainability-led design principles and practice for ICT products
Sustainable buildings	Sustainability management of the construction, use and decommissioning of ICT buildings
End-of-life management	Support in dealing with the various end-of-life stages of ICT equipment
General specifications and KPIs	Environmental KPIs that can be used to manage and evaluate sustainability performance
Assessment framework	Mapping the standards and guidelines applying to the ICT industry

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Call to Action on Smart Sustainable Cities

Key priorities to boost the development of sustainable smart cities:

1. Mitigation to Climate Change & Reduction of the ICT Footprint in Cities
2. Energy Efficiency
3. Waste Management
4. Water Management
5. Adaptation to Climate Change and Urban Planning
6. Smart Architecture and Infrastructure
7. Smart Mobility
8. Suburban Areas
9. Community Engagement and Environmental Justice
10. Sustainable Cities

Led to the creation of the Focus Group on Smart Sustainable Cities

Focus Group on Smart Sustainable Cities:

- Established at SG5 meeting in Geneva, 29 January to 7 February 2013

- As an open platform for smart-city stakeholders

- 1st meeting to be held on 8 May 2013 in Turin, Italy

- Main tasks and deliverables:
  - Defining the role of ICTs in environmentally sustainable smart cities, and identifying the ICT systems necessary to the development of a Smart Sustainable City;
  - Collecting and documenting information on existing smart city initiatives and technical specifications, focusing in particular on the identification of standardization gaps;
  - Identifying or developing a set of Key Performance Indicators (KPIs) to gauge the success of smart-city ICT deployments;
  - Establishing relationships and liaison mechanisms with other bodies engaged in smart-city studies and development;
  - Identifying future smart-city standardization projects to be undertaken by its parent group, ITU-T Study Group 5;
  - Developing a roadmap for the ICT sector's contribution to Smart Sustainable Cities, providing cohesion to the development and application of technologies and standards.

Moving forward on Smart Sustainable Cities...

- [ITU/UNEP session on Environmentally Sound Management of E-Waste @ WSIS Forum 2013](#)
  Geneva, Switzerland, 14 May 2013

- [ITU Workshop on Environmentally Sound Management of E-waste](#)
  9 July 2013, Durban, South Africa

- [ITU Workshop on Building a Sustainable Future Through Green ICT Standards](#)
  15-16 July 2013, Ouagadougou, Burkina Faso

- **[ITU Workshop on Smart Sustainable Cities in Latin America](#)**
  22 July 2013, Montevideo, Uruguay

- [ITU Workshop on Human Exposure to Electromagnetic Fields (EMFs)](#)
  25 July 2013, Montevideo, Uruguay

- [Information Session on Green ICT Standards](#)
  26 July 2013, Montevideo, Uruguay

- [ITU Workshop on E-waste](#)
  13-14 August, Quito, Ecuador

- [3rd ITU Green Standards Week](#)
  16-20 September 2013, Madrid, Spain

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3rd ITU Green Standards Week

- To bring together leading specialists in the field, from top policy-makers to engineers, designers, planners, government officials, regulators, standards experts and others.

- To raise awareness of the importance and opportunities of using ICT standards to build a green economy.

Programme:
- 16/09: ITU, UNEP, UNU, CEDARE Workshop on E-waste
- 17/09 (morning): Information Session on Green ICT Standards
- 17/09 (afternoon): **High Level Segment on Smart Sustainable Cities**
- 18/09: Meeting of the Focus Group on Smart Sustainable Cities
- 19/09: 3rd Workshop on Submarine Communications Networks For Climate Monitoring and Disaster Warning
- 20/09: Meeting of the ITU/WMO/UNESCO -IOC Joint Task Force on Submarine Communications Networks For Climate Monitoring and Disaster Warning

SEE YOU IN MADRID, on 16-20 September 2013

ITU GREEN ICT APPLICATION CHALLENGE
3rd edition

Objective: To find the best and most innovative Concept Paper for an ICT application to help build **Smart Sustainable Cities** and achieve environmental sustainability in urban areas.

Topics:
- Energy management
- Water management and sanitation
- Waste management
- Transport and mobility
- Urban planning, including smart buildings
- Adaptation to climate change
- Smart societies, community engagement and environmental education

Organizers:

Developers are called to submit Concept Papers.
Deadline: **30 June 2013**

Prize: **5000 USD** + invitation to present the winning ICT application during the ITU Green Standards Week in Madrid, Spain.

Apply now:
http://itu.int/ITU-T/climatechange/greenict/

Cities should have long-term sustainability ambitions

- Importance of assessing GHG emissions and energy consumption.
- City leaders to partner effectively with other levels of government.
- Smart sustainable city should be seen as a "System of Systems".
- The role of international standards and policies is key.

International Telecommunication Union

"Do not be afraid to dream of great things!"

26 April 2013, Pope Francis

Links & Additional Information

- ITU-T and climate change
  http://www.itu.int/ITU-T/climatechange

- ITU and climate change
  http://www.itu.int/climate

- ITU Symposia & Events on ICTs and Climate Change
  http://www.itu.int/ITU-T/worksem/climatechange

- Contact Cristina Bueti: greenstandard@itu.int

Thank YOU

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