Building Smart Sustainable Cities

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Let us imagine....

Transforming tomorrow…

… smart thinking is here already!

Tomorrow's cities, today's technologies

Santiago, Chile

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

Bilbao, Brazil

Torino, Italy

Turin Roadmap:
Towards a Planet of Smart Sustainable Cities

- 8th Symposium on ICTs, the Environment and Climate Change (6-7 May 2013)
  - Outcome document: Roadmap
  - Calling on ITU to promote the use of smart technologies in cities and tasking it with developing a set of key performance indicators (KPIs) to assess the impact of ICTs in cities and countries.

"Rapid urbanization and high-density populations foment innovation and economic growth but also give rise to social, economic and environmental challenges, as cities' infrastructures develop slower than the influx of new inhabitants.

ICTs can make our cities safer, cleaner, and more convenient places to live."

Dr Hamadoun I. Touré, Secretary-General, ITU

Turin Roadmap:
Towards a Planet of Smart Sustainable Cities

1. **Defining**: Smart sustainable cities.
2. **Engaging cities**: Charter for Smart Sustainable Cities with measurable objectives.
3. **Adopting a holistic approach**: enhance cooperation among all relevant smart city stakeholders.
4. **Standardizing**: methodology for assessing the environmental impact of ICTs in cities in collaboration with relevant organisations and experts.
5. **Developing**: set of key performance indicators (KPIs)
6. **Best practices and lessons learned**: exchange platform of successful practices.
7. **Behavioural change** for sustainable development.
8. **Advocacy**: on-going dialogue on cities and smart sustainable city policies.
9. **Measuring success**: create pilot demonstration and business models
10. **Mobilizing expertise**: in relevant ITU Study Groups, and other groups as appropriate to pursue work in this important area.

Smart Sustainable Cities in Latin America

Sustainable development is one of the key priorities for policy makers in Latin America.

- According to UN-HABITAT, Latin America is the most urbanized developing region in the world with 80% of Latin Americas living in cities. These cities increasingly affect surrounding natural resources due to the growing pressure of urban consumption.

- If Latin America succeeds in finding solutions to the environmental, cultural, economic and political challenges of creating more sustainable cities, its example could have global implications as other emerging regions beings the urbanization process.

Curitiba, Buzios & Santiago
Smart Sustainable Cities

Latin America is no stranger when it comes to using ICTs to further sustainable development.

- **Curitiba**, Brazil has an urban planning which offers up to 600 square feet to its 3.5 million residents. Its public transport system has over 70% of the population depends upon, yet without significant C02 emission or transport dysfunction.

- To further its energy efficiency, **Buzios**, along with the energy company Enel, initiated the **Cidade inteligente Buzios** project in 2011. This project aims to help Brazil achieve its energy targets by the use of ICTs such as smart meters, network automation to renewable energy integration, electric mobility and efficient street lights.
- Similarly, the city of **Santiago**, Chile, has installed an electric public transportation system in which electric buses are running on a closed city circuit with multiple charger outlets setup for private cars and taxies.

Smart Sustainable Cities Worldwide

- Smart sustainable development has received worldwide attention in recent years. Thus, examples of smart sustainable cities can be found worldwide.
  - Example #1: **Amsterdam, Holland->**
  - Example #2: **Seattle, USA->**


Transportation
Airports & Rail
Public Safety
ITU Activities on Smart Sustainable Cities
Social Services
Education
Healthcare
Economic
Development
Transportation
Traffic
Energy & Utilities

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.

First meeting of the Focus Group on Smart Sustainable Cities

Turin, Italy, 8 May 2013

Highlights:

- Establishment of FG-SSC structure and deliverables:
  - 4 working groups
  - work plan
  - future meetings
- Presentation of contributions received;
- Liaison statements sent to other bodies engaged in smart-city studies and development (e.g. ETSI);
- **Next meeting: Madrid, Spain, on 17 September 2013**

Contributions are needed!

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

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 th use of ICTs in cities to reduce the GHG emissions of other sectors

Approval expected in 2013

KOREA COMMUNICATIONS COMMISSION

KAIT
Korea Association for ICT Promotion

RRA
NATIONAL RADIO RESEARCH AGENCY

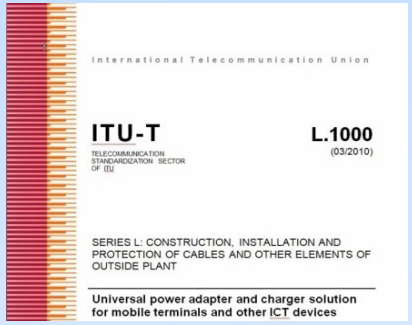
SK telecom

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

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

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

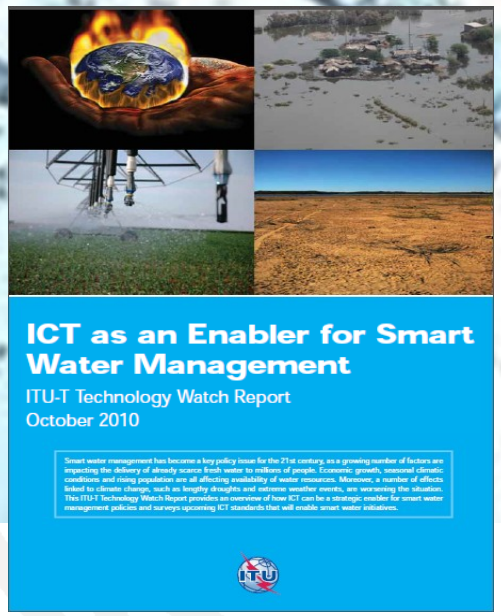
Waste Management with Smart ICT Standard



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

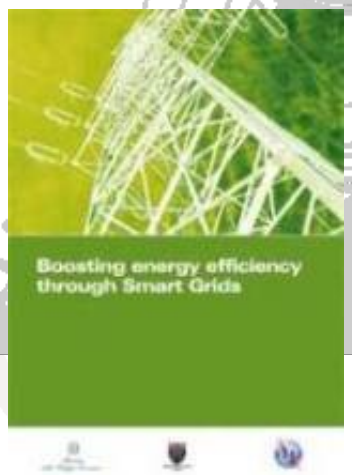
Focus Group on Smart Water Management:

- Established by the ITU-T TSAG meeting in Geneva, 4-7 June 2013
- Will work in close collaboration with the FG-SSC
- 1st Meeting: 10 December, Lima, Perú

- Main tasks and deliverables:
  - Collect and document information on national, regional and international smart water management initiatives; reporting on current activities and technical specifications.
  - Specify the roles to be played by ICTs in smart water management.
  - Develop a list mapping key stakeholders involved in the area of ICTs and smart water management.
  - Develop Key Performance Indicators (KPIs) to assess the impact achieved through the use of ICTs in water-management systems.
  - Develop a set of methodologies for estimating the impact of ICTs on water conservation.
  - Identify water-management ICT applications and services with the potential to ensure interoperability and the benefits of economies of scale.
  - Draft technical reports that address standardization gaps and identify new standardization work items to be taken up by its parent group, ITU-T Study Group 5 (Environment and climate change).

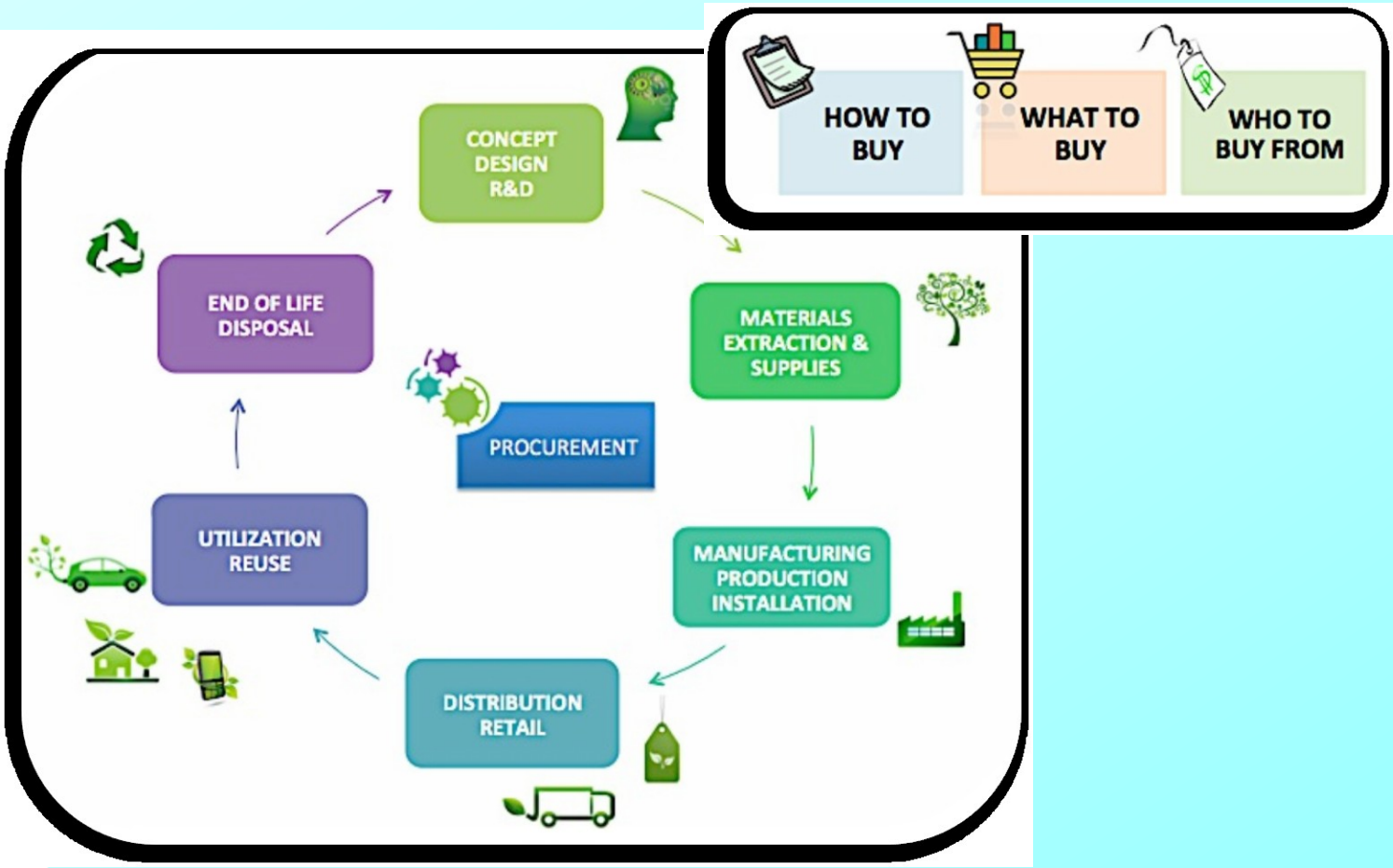
Italian Ministry of Economic Development-
Genoa University-ITU report on

Boosting Energy Efficiency through Smart Grids



ETNO-ITU report on

Guidance on GREEN ICT Procurement



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

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

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

Award Ceremony: 18 September 2013, during the ITU Green Standards Week in Madrid (Spain)

Prize: 5000 USD

Organizers:

Telefónica

Committed to connecting the world

ITU International Telecommunication Union

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

Envisioning a Sustainable Future…

- 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.

"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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Committed to connecting the world

International Telecommunication Union

Moving forward on Smart Sustainable Cities…

- ITU Workshop on E-waste
  Quito, Ecuador, 13 August 2013
- 3rd ITU Green Standards Week
  Madrid, Spain, 16-20 September 2013
- Greening the Future: Bridging the Standardization Gap on Environmental Sustainability
  Colombo, Sri Lanka, 3-4 October 2013
- ITU/CITEL Workshop on Environmentally sound management of E-waste
  Mendoza, Argentina, 9 October 2013