Focus Group on Smart Sustainable Cities

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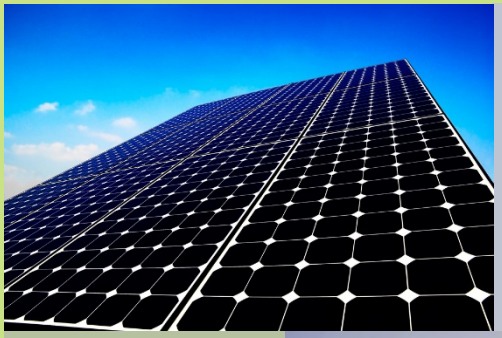
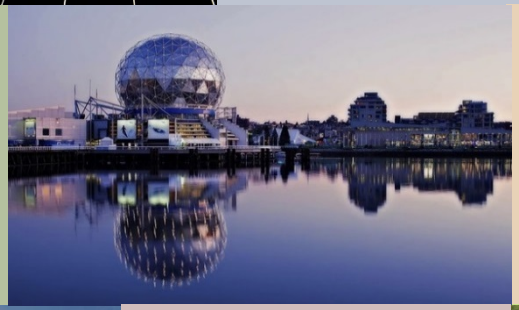
Some city facts…



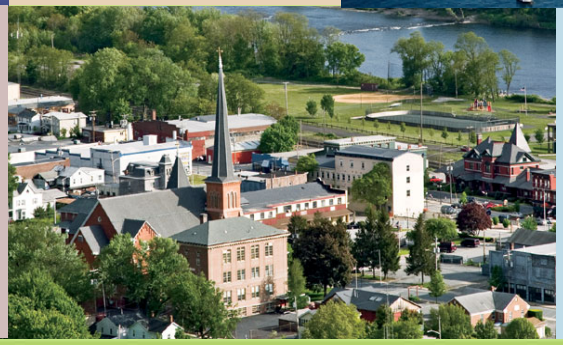
Cities account for about two-thirds of **global energy demand**.

Buildings produce a fifth of the world's **CO2 emissions**.



Cities produce up to 70% of global **greenhouse gas emissions**.

Buildings account for roughly 40% of the world's **energy use**.

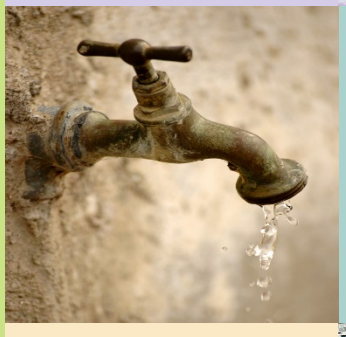


An estimated 80% of global **GDP** is generated in cities.

Some population facts...

Every second, the **urban population** grows by 2 people.

More than half of the world's population will be living in **urban areas** by 2008.



In the world, over 750 million live in urban areas without adequate shelter and **basic services**.

By 2050, it is expected that **70% of the world population** will live in urban areas.

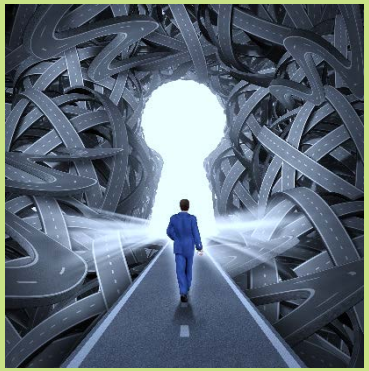
1/3 of people in developing countries living in cities, live in **slum/squatter settlements**.

Almost 180,000 **people** are added to the urban population each day.

Should cities be built to ensure a sustainable future and make people's life fulfilling?

"At its most fundamental level, when infrastructure is well planned, designed, and built, it provides the physical framework for a modern, healthy, and prosperous society."

Madeleine Albright



ICT can help… let's move further!

Focus Group on Smart Sustainable Cities (FG SSC)

- Established at ITU-T Study Group 5 meeting in Geneva in February 2013.
- Lifetime: one year from the first meeting held on 8 May 2013. Extented to May 2015.
- As an **open platform** for smart-city stakeholders to exchange knowledge in the interests of identifying the standardized frameworks needed to support the integration of ICT services in smart cities.
- **Participation is open to all**.

Management team

Chairman:

- Silvia Guzman

Secretariat:

- Cristina Bueti, Adviser, ITU

Vice-chairmen:

- Flavio Cucchietti, Telecom Italia
- Pablo Bilbao, Federation Argentina de Municipios, Argentina
- Franz Zichy, USA
- Nasser Saleh Al Marzouqi, UAE
- Ziqin Sang, Fiberhome Technologies Group
- Sekhar Kondepudi, National University of Singapore

Terms of reference

Main tasks and deliverables:

- Defining the **role of ICTs** in environmentally sustainable smart cities;
- Identifying or developing a set of Key Performance Indicators (**KPIs**);
- Identifying future smart-city **standardization** projects;
- Developing a **roadmap** for the ICT sector's contribution to smart sustainable cities.

Establishing relationships with:

- Within **SG5**: Q7, Q13, Q14, Q15, Q16, Q17, Q18, and Q19, etc.;
- All **ITU-T Study Groups**, especially SG11, SG13, SG15, SG16 and SG17;
- Other **international, regional and national SDOs**, such as ISO, IEC, IEEE, CEN/CENELEC, ETSI, etc.;
- **Relevant entities** including: municipalities, federation of municipalities, NGOs, policy makers, industry forums and consortia, companies, academic institutions, research institutions, etc.

Past meetings

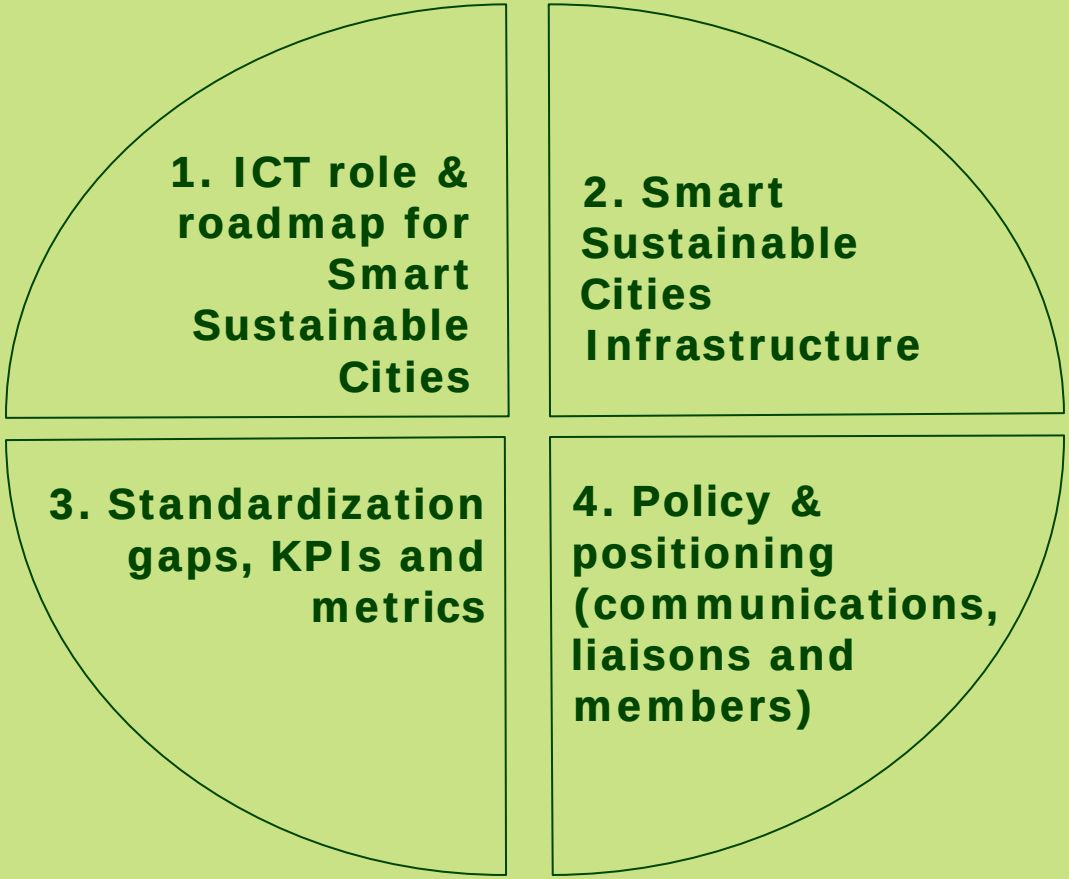
1st meeting: Turin, 8 May 2013 (Telecom Italia) >50 participants
2nd meeting: Madrid, 17 Sept 2013 (Telefónica) >50 participants
3rd meeting: Lima, 6 Dec 2013 (Gov. of Peru) >60 participants
4th meeting: Geneva, 5-6 March 2014 (ITU) >30 participants
5th meeting: Genoa, 19-20 June 2014 (Genoa Municipality) >45 participants

Main achievements

- Establishment of FG SSC structure and working methods,
- Creation of 4 working groups, and appointment of the respective coordinators;
- Creation of technical groups within WG2, WG3 and WG4, and appointment of the respective leaders;
- Extension of the FG SSC mandate until May 2015;
- Agreement on definition of SSC:

  "**A smart sustainable city is an innovative city that uses information and communication technologies (ICTs) and other means to improve quality of life, efficiency of urban operation and services, and competitiveness, while ensuring that it meets the needs of present and future generations with respect to economic, social and environmental aspects**"
- Development of a Roadmap for SSC (including technical specifications) to be submitted for approval in December 2014;
- 16 technical reports under development;
- Liaison statements sent to other bodies engaged in smart-city studies and development, such as ISO, IEC, IEEE, ETSI, EC DG Connect, UNECE, UNU, StEP, CEDARE, UNESCO, UN-Habitat, WMO, UNEP and UNFCCC.

Working groups



Working group 1

1. ICT role & roadmap for Smart Sustainable Cities

WG1 coordinator:
Sekhar Kondepudi (National University of Singapore)

Plan and deliverables:

- Technical report on overview of SSC and the role of ICT;
- Technical report on definitions and attributes of a SSC;
- Roadmap for SSC implementation.

TR1/WG1 Technical report on overview of smart sustainable cities and the role of ICT

Objective	▪ To provide an overview of a SSC and establish what the role of ICT is in relation to such an urban environment.
Highlights	▪ Sourced over 100 definitions and descriptors for smart sustainable cities from academia, government, corporations, non-profits, SDOs etc; ▪ Detailed analysis of different key words and attributes.
Important dates	▪ Approval to be sought at the next FG SSC meeting: 13-16 October 2014
Document	▪ [fg-ssc-0029-r8]

TR2/WG1 Technical report on definitions and attributes of a smart sustainable city

Objective	▪ To provide a basis for understanding the most common features of SSC.
Highlights	▪ Analyses over 120 different definitions of SSC; ▪ Makes a proposal for a comprehensive definition for SSC as part of the work conducted by WG1.
Important dates	▪ Approval to be sought at the next FG SSC meeting: 13-16 October 2014
Document	▪ [fg-ssc-0100-r5]

TR3/WG1 Roadmap for smart sustainable cities implementation

Objective	▪ To give municipalities and interested stakeholders a general overview to apply SSC concepts to their cities; ▪ To present a guide for the implementation of SSC based on an intensive use of ICTs (Information and Communication Technologies).
Scope	▪ It is intended to be as general and inclusive as possible, so it can be of used by any city in the world whether its size or location, both in developed and developing countries; ▪ The concepts and definitions presented in this document are in alignment with the rest of technical reports produced by the FG SSC.
Highlights	▪ Includes the definition, attributes and technical specifications for a SSC; ▪ Proposes a vision for SSC implementation.
Important dates	▪ Approval to be sought in December 2014
Document	▪ [fg-ssc-0184-r1]

Working group 2

2. Smart Sustainable Cities infrastructure

WG2 coordinator: Paolo Gemma (Huawei)

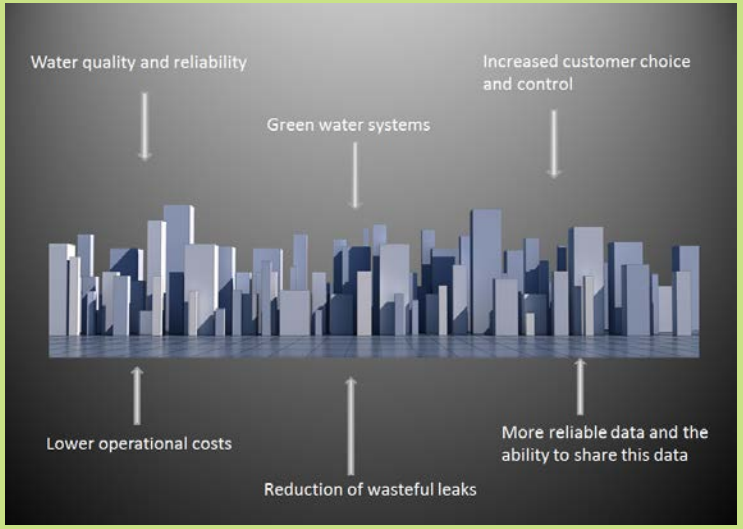
Plan and deliverables:

- Providing an overview of the use of ICT in cities;
- Looking at future trends;
- Identifying standardization's need;
- 8 technical reports under development.

Areas of technical reports

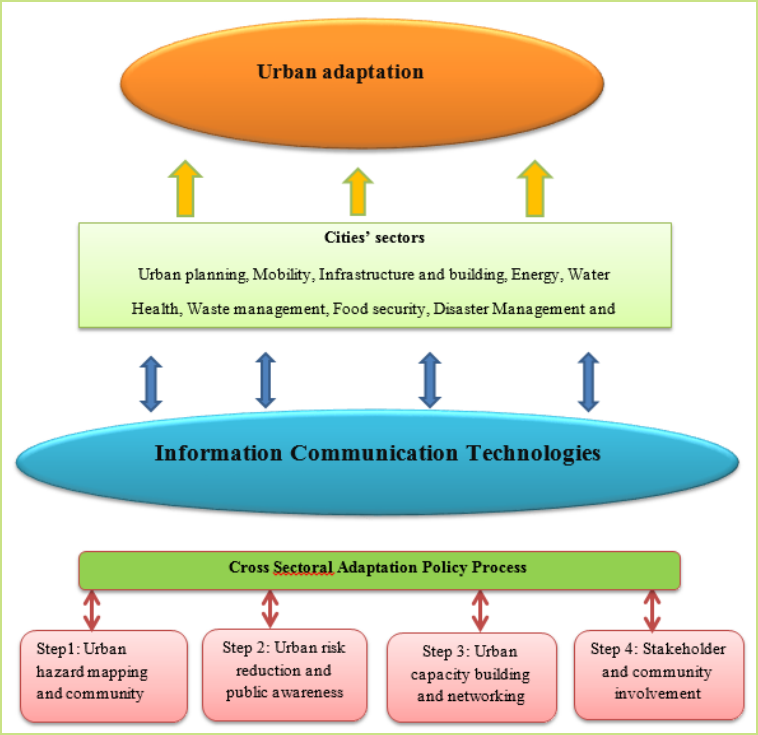
TR1/WG2 Technical report on smart water management for smart sustainable cities

Highlights	▪ Smart Water Management (SWM) in cities seeks to alleviate challenges in the urban water management and water sector through the incorporation of Information and Communication Technologies (ICTs) products, solution and systems in areas of water management and sanitation.
Important dates	▪ Approval to be sought at the next FG SSC meeting: 13-16 October 2014
Document	▪ [fg-ssc-0122-r3]



TR2/WG2 Technical report on ICTs for climate change adaptation in cities

Highlights	▪ Describes in general terms the impacts of climate change in cities and highlights the reasons for cities to improve their capacity to respond to the challenges posed by climate change; ▪ Further expands by identifying the role of ICTs in helping cities to adapt to climate change.
Important dates	▪ Approval to be sought at the next FG SSC meeting: 13-16 October 2014
Document	▪ [fg-ssc-0107-r2]

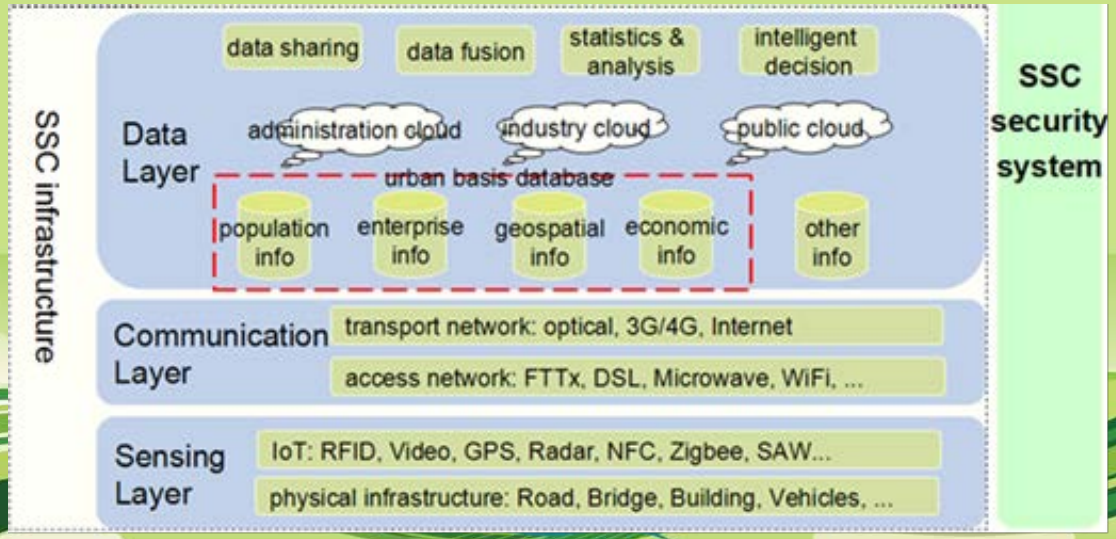


TR3/WG2 Technical report on cyber-security, data protection & cyber-resilience in smart sustainable cities

Highlights	▪ Explores the requirements and challenges of creating a secure, reliable and resilient smart city; ▪ Considers how to provide innovative, resilient "smart" solutions that leverage digital information while protecting against malicious violations, unintentional damage and natural disasters.
Important dates	▪ Approval to be sought at the next FG SSC meeting: 13-16 October 2014
Document	▪ [fg-ssc-0090-r3]

TR4/WG2 Technical report and best practices on smart sustainable cities infrastructure

Highlights	▪ Provides a technical overview on infrastructure related to ICT to develop a SSC; ▪ ICT can provide intelligence to traditional infrastructure, turning it into smart infrastructure; ▪ Two aspects to be considered: the deployment of new ICT infrastructure and the improvement of the current infrastructure; ▪ ICT acts as an enabler to build SSC that use resources efficiently, cut energy costs, foster energy savings, improve quality of life, and reduce environmental footprint.
Important dates	▪ Approval to be sought at the next FG SSC meeting: 13-16 October 2014
Document	▪ [fg-ssc-0097-r4] and [fg-ssc-0226]



TR5/WG2 Technical report on smart buildings for smart sustainable cities

Highlights	▪ Defines a smart / intelligent building in the context of SSC; ▪ Survey of current initiatives around building resiliency; ▪ Outline of potential resiliency protocol.
Important dates	▪ Approval to be sought at the next FG SSC meeting: 13-16 October 2014
Document	▪ [fg-ssc-0136-r1]

Document outline:

- Definition – How to define a smart / intelligent building in the context of SSC
- Current applicable standards / initiatives
- Gap analysis of current standards / initiatives
- Roadmap of standards required
- Recommendations for further work

TR6 / WG2 Technical report on EMF considerations in smart sustainable cities

Highlights	▪ Introduction to SSC and importance of ICT's and EMF considerations; ▪ Based on existing ITU and WHO technical and policy recommendations; ▪ Technical and policy requirements for EMF should be adopted nationally based on international recommendations; ▪ Cities need guidance on implementation that promotes efficient deployment; ▪ Provides a model framework as benchmark. ▪ Smart Sustainability City EMF Checklist
Important dates	▪ Approval to be sought at the next FG SSC meeting: 13-16 October 2014
Document	▪ [fg-ssc-0089-r5]

ICT's connecting our world

TR7/WG2 Technical report on integrated management for smart sustainable cities

Highlights	The integrated management for SSC is to integrate and process the people, events, things and the corresponding information streams intelligently: ▪ access and integration of city information resources; ▪ network service of the model of city analysis and decision-making; ▪ typical applications of comprehensive management and smart decision-making.
Important dates	▪ Approval to be sought in December 2014
Document	▪ [fg-ssc-0210-r1]

TR8/WG2 Technical report on anonymization infrastructure and open data for smart sustainable cities

NEW	▪ Draft table of contents available
Important dates	▪ Approval to be sought in February/March 2015
Document	▪ [fg-ssc-0234-r1]

Working group 3

3. Standardization gaps, KPIs and metrics

WG3 coordinator:
Ziqin Sang
(Fiberhome Technologies Group)

Plan and deliverables:

- Technical report on standardization activities and gaps for SSC and suggestions to SG5
- Technical report on KPIs definitions for smart sustainable cities
- Technical report on KPIs metrics evaluation

TR1/WG3 on standardization activities and gaps for smart sustainable cities and suggestions to ITU-T Study Group 5

Highlights	▪ This technical report aims at developing a standardization framework for SSC taking into consideration the activities currently undertaken by the various standards developing organizations (SDOs) and forums; ▪ It also tries to identify the areas where there is lack of standards and how to fill the gap.
Important dates	▪ Approval to be sought in December 2014
Document	▪ [fg-ssc-0110-r1]

TR2/WG3 on Key Performance Indicators (KPIs) Definitions for smart sustainable cities

Highlights	▪ This technical report aims at developing a set of key performance indicators (KPIs) to assess how the uses of ICTs has an impact on the sustainability of cities; ▪ The intension of KPIs is to publish the criteria for cities to quantify an archievement degree according their goal to make cities smarter and more sustainable; ▪ It also takes into considerations **other works** on KPIs of SSC from global, regional and national organizations as well as academic and company sources.
Important dates	▪ Approval to be sought at the next FG SSC meeting: 13-16 October 2014
Document	▪ [fg-ssc-0162-r3]

TR3/WG3 on Key Performance Indicators (KPIs) metrics and evaluation for smart sustainable cities

Highlights	▪ The set of indicators is the same of the technical report on KPIs definitions for SSC; ▪ It adopts the 100-mark system as the grading method for sets of indicators, and the value of SSC index is the mean value of all the indicators; ▪ The specific method for calculating each indicator is various, so is the metric. And the performance ration of each indicator will be mapped to a value between 0 and 100.
Important dates	▪ Approval to be sought in December 2014
Document	▪ [fg-ssc-0199-r1]

Working group 4

4. Policy & positioning (communications, liaisons and members)

WG4 coordinator:
Daniela Torres
(Telefónica)

Plan and deliverables:

- Technical report on Smart Sustainable Cities stakeholders
- Technical report on assessment of energy & GHG emissions from ICT in cities ***(NEW)***

TR1/WG4 Technical report on smart sustainable cities stakeholders

Highlights	▪ Smart sustainable cities overview and challenges. ▪ Methodology for stakeholders identification. ▪ Stakeholder analysis and roles. ▪ Recommendations to SSC Stakeholders to drive SSC.
Important dates	▪ Approval to be sought at the next FG SSC meeting: 13-16 October 2014
Document	▪ [fg-ssc-0113-r5]

TR1 / WG4 Technical report on smart sustainable cities stakeholders

Objective:

- To help stakeholders identify their roles in the development of the SSC and within SSC

SSC stakeholders:

- Municipalities and city administration (Including different departments).
- Urban Planners
- National and regional governments.
- City services companies and utility providers.
- ICT Companies (Telecom Operators, Start-ups, Software Companies)
- NGOs
- Multilateral Organizations
- Industry associations
- Academia and scientific community
- Citizens and citizen organizations
- Specialized Consulting Firms
- Standardization Bodies

TR1 / WG4 Technical report on smart sustainable cities stakeholders

Steps for stakeholders analysis

IDENTIFICATION

- First list derived from the definition.
- Validation with a general classification by World Bank, other reports from the FG-SSC, literature used for this report.
- Ensuring with the stakeholders visual map developed in this report.

CATEGORIZATION

- Categorization of listed stakeholders in a graph (list)

DETAILED ANALYSIS

- Identifying individual characteristics and expected implications for SSC development
- Studing relationships between stakeholders: map of relations.

TR2/WG4 Technical report on assessment of energy & GHG emissions from ICT in cities *(NEW)*

NEW	▪ Draft table of contents under development: Including consultation of the current draft of the ITU-T Draft Methodology on GHG Emissions accounting of ICTs in Cities.
Important dates	▪ Approval to be sought in December 2014

Conclusions

- **JOIN US: 7th FG SSC meeting**
  (Koichi, India, 10-12 December 2014)

Collaboration and contributions are welcomed.

- ITU-T and Climate Change
  itu.int/ITU-T/climatechange
- Focus Group on Smart Sustainable Cities
  itu.int/en/ITU-T/focusgroups/ssc/
- Symposia & Events on ICTs and Climate Change
  itu.int/ITU-T/worksem/climatechange

Thank you

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