Call to Action
The 9th Green Standards Week
"Connecting Smart Sustainable Cities with the Sustainable Development Goals"
1-4 October 2019, Valencia, Spain

Smart sustainable cities utilize a wide variety of information and communication technologies (ICTs) to address the growing environmental and socio-economic pressure exerted by human and natural induced factors. ICTs are the catalyst that enable the communication function of the Internet of Things (IoTs) and other data driven applications including, digital platforms, wireless sensor networks, intelligent systems, Big Data analytics and more. It is through the use of ICTs and citizens' participation that smart sustainable cities are able to fuel innovation, solve local problems, and drive efficiency in an inclusive and sustainable manner. By tackling the persistent digital divide, the benefits of smart sustainable cities will reach everyone everywhere.

Smart sustainable cities hold great potential in accelerating progress towards the achievement of Sustainable Development Goals (SDGs). By harnessing the potential of ICTs, buildings in smart sustainable cities consume less energy and generate less waste. Traffic congestion is reduced with optimized routes for public transportation and parking spaces. Energy consumption and other basic utilities supply are optimized based on real-time information. Financial and social services are made more accessible to many citizens. Citizen participation in decision making processes is enhanced through open data, crowdsourcing and digital portals. Many cities such as Valencia have already taken their steps to develop clear pathways to become a smart sustainable city and have enjoyed great successes.

The 9th Green Standards Week (GSW) dedicated to the theme "Connecting Smart Sustainable Cities with the Sustainable Development Goals" was held between 1 to 4 October 2019 in Valencia, Spain. Participants of the GSW discussed the opportunities that smart sustainable cities bring and acknowledged that the transition to smart sustainable cities is the cornerstone of achieving the SDGs.

In particular, smart sustainable cities can contribute to the achievement of the following SDGs; SDG 7 "Affordable and Clean Energy"; SDG 8 "Decent Work and Economic Growth"; SDG 9 "Industry, Innovation, and Infrastructure"; SDG 11 "Sustainable Cities and Communities"; SDG 12 "Responsible Consumption and Production" and SDG 13 "Take urgent action to combat climate change and its impacts".

However, there are still important challenges that need to be overcome before the vision of smart sustainable cities is fully realized. International standards will be instrumental in disseminating best practices and generating key consensus that would address these challenges and build a more sustainable future for all with open and interoperable ICT and IoT technologies. Efforts are required to build digital skills, capacity and inclusion to ensure that all, especially marginalized groups, are included in the smart sustainable cities vision.

We the participants of the 9th Green Standards Week have acknowledged that:

1. Cities act as engines of national economic development. Strong urban economies are essential for poverty reduction and the provision of adequate housing, infrastructure, education, health, safety, and basic services.

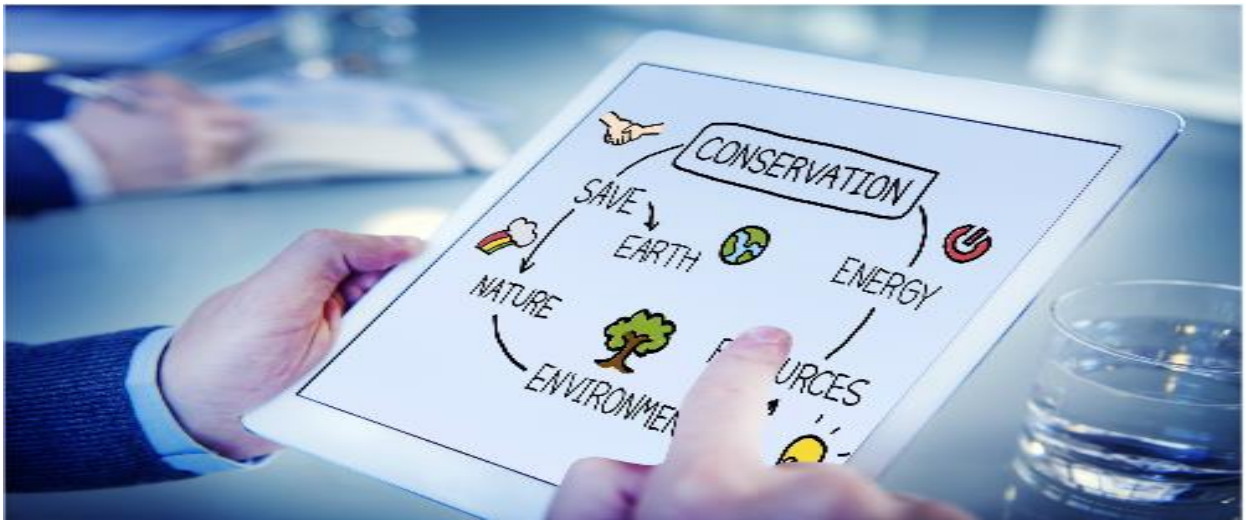
2. Cities worldwide are facing increasing challenges brought on by urbanization, climate change, accelerated globalization among others. Cities are facing increasing risks from rising sea levels, powerful storms, excessive heat, loss of biodiversity. Sprawling cities are also struggling with heightened energy consumption, deepening social and economy inequality, unsustainable consumption/production patterns, traffic congestion, increasing trends of urban poverty, climate risks, air pollutions, loss of biodiversity and more. Solving these challenges requires new models of citizen engagement, new ways of cooperation between various institutions and new ways of decision making

3. The growing environmental footprint of the ICT sector cannot be overlooked. Cities are already responsible for 60 to 80% of all energy consumption. Over 70% of energy-related carbon dioxide (CO2) emissions can be traced back to urban areas, and cities produce between 37% to 49% of overall global greenhouse gas (CO2 equivalent) emissions. Rapid innovation and decreasing costs are encouraging the production of an increase number of electronic products, in turn, leading to more such products being disposed of. E-waste has already become the fastest growing waste stream with over 50 million tonnes of e-waste recorded in 2018. Only around 20% of this e-waste is managed in an environmentally sound manner.

4. There is increasing concern surrounding the environmental performance of frontier technologies. The number of data centers that are built to power cloud computing, different IoT applications, 5G infrastructures, AI, or blockchain is increasing at an alarming rate. Data centers are some of the biggest consumers of energy. Compounded by the growing number of ICTs, there is an urgent need to study the environmental impacts of frontier technologies with active support from the research community.

5. Other issues including interoperability of digital systems, cybersecurity, privacy and the rising concerns over data ethics, responsibility and ownership are also barring cities from fully realizing the vision of a smart sustainable city. In addition, close to half of the world's population remain offline and the digital skill gaps are growing wider as cities are moving towards a data-driven future.

6. Smart sustainable cities harness the full potential of ICTs and frontier technologies to address these challenges, offering the clearest pathway to achievement the SDGs. Smart sustainable cities are the foundation of reaching the SDGs.



Therefore, we the participants of the 9th Green Standards Week declare a call to actions, including:

1. **Connecting smart sustainable cities with the Sustainable Development Goals (SDGs)**: The SDGs provide a concrete and measurable framework that city stakeholders can use as guidance to adopt a people-centric approach to smart sustainable cities. Initiatives, such as the United for Smart Sustainable Cities (U4SSC) have developed useful guidelines and effective tools that support cities in aligning their smart strategies with the SDGs, including the Key Performance Indicators for Smart Sustainable Cities. They also offer a collaborative platform where stakeholders can gather to engage in global dialogues and generate consensus on key issues that would help overcome the challenges of smart sustainable cities.

2. **Making cities lead the way in the application of frontier technologies to protect the environment and tackle climate change:** Cities are the hubs for innovation and hold great

potential to lead the way in applying frontier technologies to combat climate change. Artificial intelligence is being applied to enhance traffic management, estimate real-time precipitation to hydrological risk, and to manage e-waste. The Internet of Things is improving energy infrastructure to reduce carbon dioxide and Greenhouse Gas emissions. 5G water supply system is reducing water loss and distribution inefficiency. Digital twins are enhancing disaster risk planning and environmental resilience in cities. Robotics are also helping to monitor underwater climate change impacts and observing marine life to protect biodiversity.

3. **Using international standards as guidance for the development of smart sustainable cities**: International standards such as ITU-T Recommendations provide requirements, specifications, best practices and other important guidelines that support the deployment of ICTs and frontier technologies in smart sustainable cities. These standards offer guidelines that coordinate the development of the next generation network, define the capability of IoT-based emergency response systems, set common requirements of the interoperability of smart city platforms and IoT application, identify the characteristic of IoT services, evaluate the role of ICTs in smart sustainable cities and more.

4. **Adopting the circular economy principles to reduce e-waste:** The circular economy (CE) model presents the most effective blueprint for managing ICTs sustainably. By implementing policies that encourage reusing, recycling, remanufacturing and refurbishing, the use of resource in the production of ICTs would be minimized and the value of each component will be retained in the product's lifecycle for as long as possible. International standards including ITU-T Recommendations play an important role in accelerating circular actions. They contain guidelines that support the implementation of extended producer responsibility, development of a sustainable e-waste management system and more.

5. **Implementing a smart city platform to integrate smart technologies:** Smart city platforms are crucial in collecting and analyzing data from traffic lights, smart sensors, and other open sources before identifying patterns and delivering insights that would relieve congestion at peak hours, optimize routes for public transportation, enhance citizen participation in the decision making process, improve public and social services, as well as government responsiveness to citizen' demands, maximize resource efficiency and more. International standards provide an important source of guidance to ensure interoperability between platforms and their functionalities.

6. **Taking a proactive stance to study the environmental performance of frontier technologies:** The environmental impacts of artificial intelligence, blockchain, IoT, Big Data, and digital twins among other frontier technologies are a growing concern that demands further

investigation. Dedicated groups such as ITU-T Focus Group on "Environmental efficiency of artificial intelligence and other emerging technologies" provide the ideal platform for city stakeholders, field experts, representatives from civil society, the academia, the research community, service providers, and other to raise awareness of this key issue and to study the potential impacts that frontier technologies bring.

7. **Involving citizens, researchers and other relevant stakeholder in developing standards and technologies to meet end user needs:** Innovative technologies, such as crowdsourcing applications, privacy-by-design applications, and other co-creation activities can contribute to better align the technology with the need of the citizens.

8. **Adopting digital rights principles that ensure the inclusion of all people in the development of smart sustainable cities:** Principles related to privacy, freedom of expressions and non-discrimination should be incorporated by design into digital platforms to ensure the participation of all people, including the marginalized, women, youth and people with disabilities. We will work towards ensuring that everyone has access to to affordable and accessible digital services as well as the digital skills to make use of digital platforms and overcome the digital divide.

9. **Accelerating the transformation of smart sustainable cities by establishing a circular strategic approach.**
   To leverage the sustainable transformation of a community into a smart sustainable city, it is paramount to understand the smart city not as a project but as a continuous change process and technology as an enabler. Three action steps form a continuous cycle that promotes the successful advancement of a community towards becoming a smart sustainable city and systematically accelerates the ecosystem of smart sustainable city solutions in a community. First, perform a status quo analysis implementing the U4SSC Key Performance Indicators to achieve the SDGs in order to get a clear overview of the current ecosystem of smart sustainable solutions. Second, assess needs and opportunities to foster smart sustainable development and prioritize potential solutions. Third, select and implement smart sustainable city solutions. Re-start with the circular strategic approach to assess results and to advance the transformation process over time.

10. **The 2030 Agenda can only be met if we work together by boosting partnerships and mobilize expertise:** Enhance cooperation at international, regional, national and local levels, between organizations, research institutes, academia, governments, industries, small medium enterprises (SMEs) and civil society to build a smarter and more sustainable world.

We call on all concerned city stakeholders to act together in transitioning to a smart sustainable city and achieving the Sustainable Development Goals.

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