



**DIGITAL  
FOR  
PLANET**

# **THE CLIMATE-NEUTRAL AND SUSTAINABLE SMART CITIES D4P WORKING GROUP**

Dr Giovanni Rimassa

Vice President Digital for Planet – D4P

Chief Innovation Officer Martel Innovate

*[giovanni.rimassa@digital4planet.org](mailto:giovanni.rimassa@digital4planet.org)*



## ICT FOR SUSTAINABLE DEVELOPMENT

Across several sectors - *smart energy/grids, connected mobility, smart factories, smart buildings, smart farming, smart water*, digital technologies and solutions allow for:

- › More efficient use of resources
- › Optimisation of processes
- › Environmental impact monitoring
- › Access to essential (and not only) services, e.g., education, health care...



***“ICT has the potential to maintain global CO<sub>2</sub> emissions at 2015 levels, decoupling the past pattern where each 1% of growth in GDP equated to an 0.5% increase in CO<sub>2</sub> emissions, and promote sustainable growth through 2030”.***

SMARTer 2030, GESI

# > BUT AS WE KNOW



**DIGITAL TECHNOLOGIES AND  
THEIR OVERCONSUMPTION  
ARE ALSO A BIG PART OF  
THE PROBLEM**

## **Technology drives electricity demands**

- › Estimates show that ICT could consume 20% of global electricity by 2025, generating 5.5% of CO<sub>2</sub> emissions - with 25 billion “connected things” by 2021 (!)

## **Technology is damaging the environment**

- › Production, use and disposal have direct effects
- › Mining rare minerals destroys natural ecosystems
- › eWASTE - 53.6 million tonnes only in 2019 (!)

## **Technology is inducing overconsumption**

- › Enforcing culture of disposability
- › Replacement rather than repair approach
- › Software development vs. hardware upgrades



# WORKING GROUPS OVERVIEW

# > D4P WORKING GROUPS

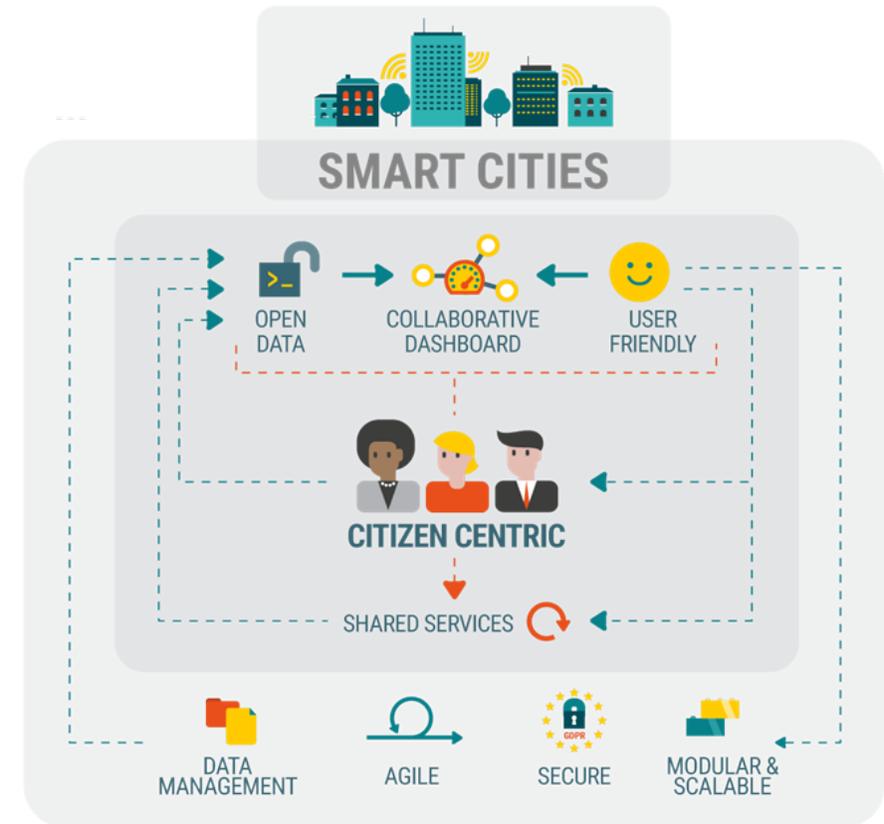
- Green Cloud-Edge-IoT Computing WG
- **Climate-Neutral and Sustainable Smart Cities WG**
- Sustainable Next Generation Internet WG
- Sustainable 5G/B5G Networks and Services WG



!!! AND DIGITAL FOR PLANET  
IS HERE TO HELP!

# CLIMATE-NEUTRAL AND SUSTAINABLE CITIES

- + By 2050 about 70% of the people will be urban
- + Urbanization can impact the environment and citizens' health
- + 2030 Agenda for Sustainable Development, Goal 11 *Make cities and human settlements inclusive, safe, resilient and sustainable*
- + Make better use of ICT to address urban challenges: climate change and sustainability rank very high
- + Global Smart City revenue to grow to \$88.7B by 2025
- + This is a core topic for several European initiatives
  - Dedicated mission in Horizon Europe
  - European Green Deal
  - Digital Europe, Connecting Europe Facility 2, ...



A black and yellow surveying level instrument is shown resting on a wooden boardwalk in a field of green weeds. The instrument has a black top with yellow accents and a black base with yellow accents. The text "WG GOALS AND ACTIVITIES" is overlaid in white, bold, sans-serif font across the center of the image. On the right side of the instrument, there is a white logo consisting of a circle with a dot inside, followed by a right-pointing chevron, and the number "17" below it.

# WG GOALS AND ACTIVITIES

# > D4P CNS-SMART-CITIES WG

- + Address **the technological aspect of building smart cities** and **provide sustainable and integrated solutions** to reach European climate and energy goals
- + **D4P CNS-Smart-Cities WG** is active on:
  - Roadmap and R&I agendas definition
  - Facilitate entry points for SMEs as key market players in Europe
  - Engage experts and stakeholders from multiple industries and disciplines
  - Inject in EU Green Deal objectives / EC policies as relevant
  - Facilitate liaisons and dialogue across relevant initiatives



# > CNS-SMART-CITIES WG: OBJECTIVES

## THREE MAIN ACTIVE GOALS

- › Programs to innovate for climate-neutrality and sustainability
- › Models, standards, infrastructure for intelligence and sustainability
- › Policy development guidelines on carbon emissions and environmental footprint



# > CS-SMART-CITIES WG: ACTIVITIES (1/2)

## INNOVATION PROGRAMS

- Horizon Europe and more
  - Discussion forum on HEUROPE mission
  - Networking and liaison across initiatives
  - Consortia and proposal incubator
- Scouting and expert engagement
  - Climate-neutrality is the core topic
  - Wider sustainability scope welcome
  - Review and contribution to roadmaps
- Analyse, connect, and participate



# CNS-SMART-CITIES WG: ACTIVITIES (2/2)

## **MODELS, STANDARDS, INFRASTRUCTURE**

- Open and organic sustainable systems
  - Open source, open data, open APIs
  - Complexity-friendly organic development
  - Platforms to ecosystems in the continuum
- Leveraging data and Artificial Intelligence
  - Urban emissions smart measurements
  - Multi-domain simulation & optimisation
  - Collective behaviour assistance
- Both facilitation and direct innovation

## **POLICY DEVELOPMENT GUIDELINES**

- Urban life: resilient, inclusive, sustainable
  - Strategic topics for Europe now
  - R&I effort underway in H2020 GD already
  - High importance in HEUROPE, DEP, etc.
- Pipeline from research to market
  - R&I feeds into research agendas
  - Research combined with business/market feeds into policy recommendations
- Assess, discuss, propose approaches

# STAY CONNECTED



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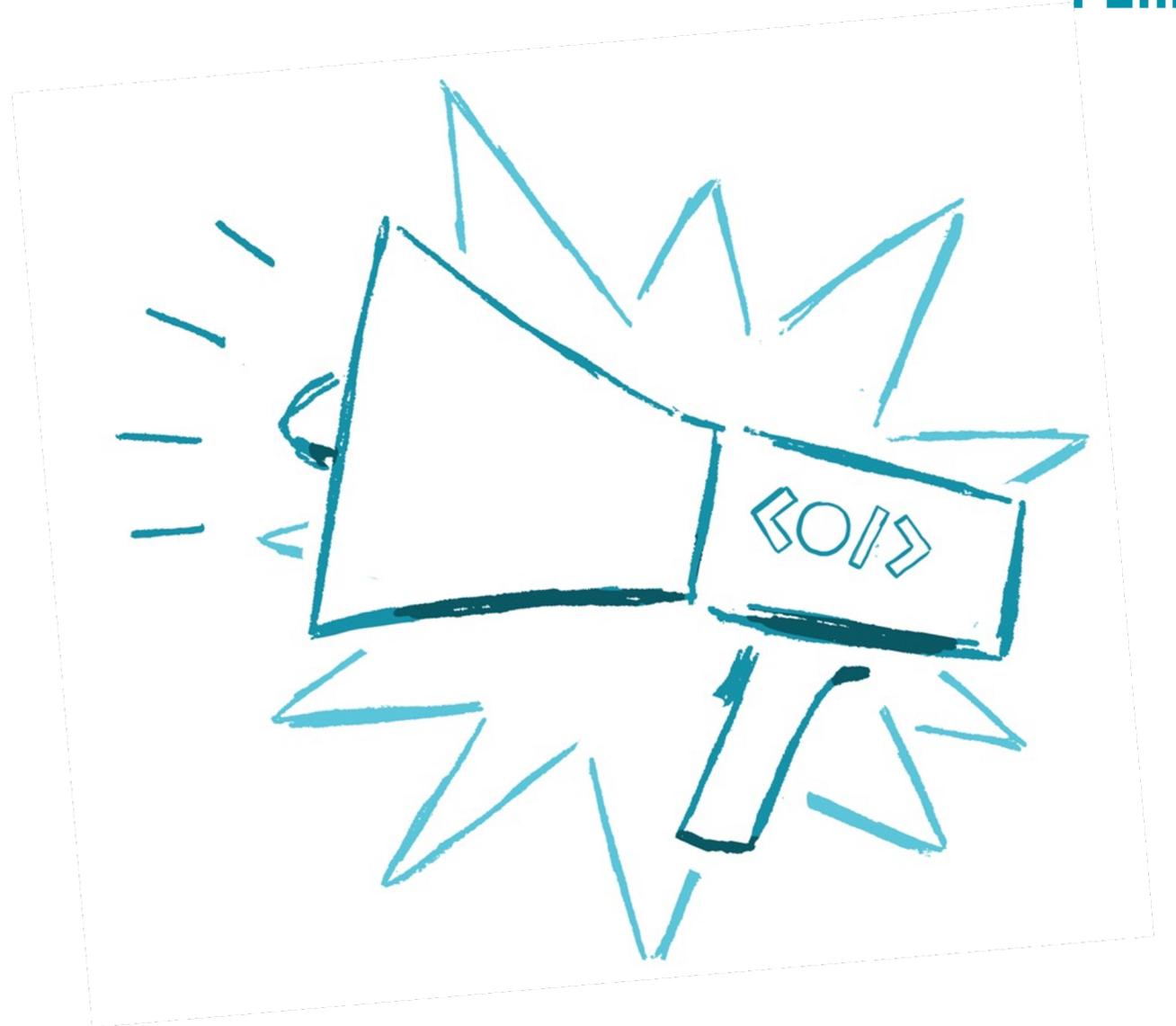
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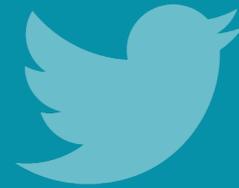
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