

# Get smart

## Carlo Alberto Nucci tells the Parliament Magazine that smart cities development can help tackle many of the urban challenges facing Europe's municipalities

In Europe, says Carlo Alberto Nucci, almost three quarters of the population live out their lives in cities, “consuming over 70 per cent of the EU’s energy”.

Nucci, head of the university of Bologna’s power systems laboratory, also highlighted the increasing “global awareness towards the importance of a clean and sustainable world” as a factor expected to drive Europe towards the “exploitation of renewable energy sources, especially concerning their deployments in cities”. The Italian professor said that, taking into account Europe’s large urban populations, “It is likely that smart cities will play a pretty important role in the EU’s future power/energy scenario.”

One of the major factors facing the integration of renewables is their relative lack of “flexibility”, stressed Nucci, saying, “wind and solar energy have random availability”. “For the electricity network, this means that their use requires a smarter management or control of the network itself. Smarter grids will be badly needed to cope with renewable energy sources and dispersed generation and the use of energy storage units is expected to increase, as that will render the management of renewable energy units more ‘flexible’.” To achieve this aim, Nucci said, “massive ICT deployment, especially at the distribution level, is expected to take place and incentives and government-supported research programmes are also expected to increase and to be financially supported across all the member states.”

Professor Nucci, however, was critical of the focus on electrical grids with “limited attention to other energy

infrastructures”, citing thermal and gas grids as complementary options. “Techniques to interconnect these apparently decoupled



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individual energy systems need to be fostered,” he added. “In such a system, electricity, thermal and gas grids could be combined and managed in order to exploit

synergies among them with the aim of accomplishing an ‘optimal’ solution for the overall smart energy system”

Nucci also pointed to the need to engage the “demand side, which must make efforts towards the improvement of energy efficiency and lifestyles that avoid the unnecessary waste of energy”. This process was helped, he said, by “the widespread diffusion of smart devices, such as phones and tablets, enabling the potential involvement of citizens towards the accomplishment of the smart city concept”. However, this proliferation of smart devices and the use of ICT in energy delivery systems would also “dramatically increase the importance of cyber security”.

The Italian academic highlighted the “extremely important role for the EU in promoting the development of smart urbanisation and energy infrastructure”. The need for the actors involved in renewables exploitation “to – probably more than in any other endeavour – strictly cooperate towards a common goal” afforded the EU a “crucial role of fostering and monitoring such types of coordination”. Nucci highlighted the European commission’s smart cities and communities European innovation partnership, which “aims at merging resources to support the demonstration of energy, transport and information and communication technologies (ICT) in urban areas”. “The energy, transport and ICT industries,” he said, “receive a strong motivation to work with municipalities to combine their technologies to address the relevant cities’ requirements. This is expected to foster the development of innovative, integrated and efficient – smart – technologies, which place cities at the centre of innovation.”

For Nucci a focus on smart cities development can deliver answers to many of problems facing our municipalities. “Smart cities represent a great economy enabler and a business opportunity”, he said, adding that “smart urban technologies can provide a key role in facing many urban challenges”.

**Carlo Alberto Nucci is a member of the IEEE smart cities initiative steering committee**