WWF Climate & Energy

CITIES WORK TO CLOSE THE GIGATONNE GAP

WWF believes that cities are set to play a crucial role in closing the gigatonne gap by 2020. For the first time in history, more than half the world's population lives in cities and they are responsible for over 70% of global greenhouse gas emissions[1].

Cities are the main growth centres of population, consumption, resource use, and waste generation. This makes them hot spots of global climatic change in terms of generating emissions and vulnerability to impacts. However, cities are also providing innovative ways to change to renewable and more efficient energy use. Networks of cities are taking the lead and setting more ambitious goals for greenhouse gas emissions than their governments.

This independent action is pushing governments to follow suit and there is great potential to scale up these actions further if these innovations are taken to areas beyond the jurisdiction of cities, most significantly in energy supply, and in the provision of financing and capacity building on climate mitigation and adaptation issues.

Cities meeting the climate change challenge

WWF's Earth Hour City Challenge[2] highlights the role that cities can play in fighting climate change and supporting the transition to a 100% renewable and sustainable future.

The initiative is designed to raise awareness and spread good ideas that, if replicated, have a significant potential to help to close the gigatonne gap.

The Challenge is also being used as a platform to lobby cities to be even more ambitious, especially through scaling up renewable energy and energy efficiency in the pre-2020 period.
The 163 cities that participated in 2014 have already reported 386 targets for emissions reductions, energy efficiency and renewable energy, 381 GHG inventories, and over 2,000 mitigation actions.

These cities are part of the 422 reporting cities on ICLEI's carbon*n* Cities Climate Registry (cCCR)[3] from which 63% of the emissions reduction targets have 2020 or an earlier year as their target date[4]. Based on their targets and reported community inventories, these cities have committed to an aggregate of 706 million tCO2e of emissions reductions until 2020[5].

The examples[6] below present a few illustrations of how cities are acting to reduce emissions. They illustrate the significant role that cities are playing in implementing innovative and replicable actions that can contribute to closing the gigatonne gap:

1. **Earth Hour Global Capital 2013 Vancouver's Neighbourhood Energy Strategy**
   Vancouver is implementing a pioneering Neighborhood Energy Strategy as a means of promoting renewable energy systems. The strategy targets areas of the city with the greatest potential to reduce carbon emissions. One Neighborhood Energy Utility is already up and running, and eight new Neighborhood Energy Systems are now being planned or developed. It is estimated that these systems will reduce greenhouse gas emissions in these neighborhoods by up to 70% by 2020.

2. **Earth Hour Global Capital 2014 Cape Town's Large-scale retrofit programmes**
   Cape Town has undertaken large scale retrofit programs to enhance energy efficiency of its current buildings and infrastructure stock. Initiatives include ceiling retrofits, lighting retrofits for buildings and street lighting. For example, the city's 2010 Traffic and Street Lighting Retrofit Program by June 2012 had successfully retrofitted all city traffic lights. Since project implementation, almost 40,000 LEDs have been installed, saving 8144 MWh of electricity annually and avoiding 8,115 tCO2 emissions.

1. International Energy Agency (2008), World Energy Outlook 2008, IEA, Paris, 569 pages.
2. See www.panda.org/ehcc.
3. See http://citiesclimateregistry.org/.
4. Data provided by ICLEI's cCCR.
5. As above and as reported on the cCCR by March 2014
6. These examples can be found on WWF's Urban Solutions inventory of 100+ case studies on sustainable urban development, including examples of best practice emissions mitigation actions. See http://wwf.panda.org/what_we_do/footprint/cities/urban_solutions/.

3. **National Earth Hour Capital 2014 Seoul's Sunlight City**
The Sunlight City Project has ambitious aims to make the entire city a PV plant with the use of fuel cells to ensure self-sufficient energy supply for key public facilities, the reuse of waste heat, and further on-site renewable energy generation facilities for new buildings. The project aims to reduce 1 million tonnes of CO2 and reduce the city's energy demand by the equivalent of one nuclear power station and is a key strategy to meet its commitment of increasing renewable energy capacity by 20% from 2000 by 2020.

4. **National Earth Hour Capital 2014 Chicago's Retrofit Chicago program**
This project aims to accelerate energy efficiency throughout Chicago's buildings sector. Retrofit Chicago has developed a special infrastructure trust to attract private capital for energy efficiency projects. Retrofit Chicago's Residential Partnership has already enabled nearly 5,000 residents to make energy efficiency upgrades. The project is also targeting its largest buildings, thus far around 3,500 commercial, municipal and residential buildings, to benchmark their energy use and track and verify their energy consumption. Emissions reduction potential from the retrofit programme for commercial buildings alone has been estimated at over 939 000 tCO2e.

5. **National Earth hour Capital 2014 Semarang's Public transport strategy**
Semarang, Indonesia, started its BRT initiative in 2009 and the system currently operates two corridors, while a further six corridors are planned for completion by 2020. The system is part of a wider strategy to encourage its population to switch over from using private vehicles and to using its large-scale public transportation system. The strategy also includes wider application of parking fees and a Car Free Day program on every Sunday. The government seeks to reduce 48,000 tCO2e from the projected total emission from this sector of 1,802,000 tCO2e

Policy activities

Cities have shown that they are ready to take up more ambitious action in the pre-2020 period, and beyond that.

In many cases, cities are applying pressure at the national and international levels as they take climate action over and above national emission reduction commitments. Cities are making it clear that they need stronger financial support mechanisms, and that their contributions need to be vertically integrated into national frameworks, to realise their climate ambitions.

These activities reflect how cities are approaching the upcoming multilateral climate negotiations as an opportunity to push for international consensus for the creation of international and national frameworks that can help tackle key barriers to scaling up city-level action on climate change. The main hurdle remains lack of access to innovative financing mechanisms that can encourage cities to switch from high-carbon urban infrastructures and towards mainstreaming low-carbon, green infrastructure.

The world's fast developing and small cities, especially those located in Africa and Asia, where 1.7 billion are expected to move to cities in the next 30 years[7], in particular would require up-front investments for capacity building support with formulating and implementing long-term climate strategies. All cities would also need access to transformational technological solutions to ensure widespread access to zero carbon energy services. Thus any international climate agreement needs to provide incentives to rapidly reduce deployment costs of such technologies (even if some are close to being competitively priced) while bolstering mechanisms for technology transfers towards the fast growing cities of the Global South

7. 'Reinventing the City – Three Prerequisites for Greening Urban Infrastructure' (2010), WWF International and Booz & Co

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