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Ingenuity for life

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Siemens CyPT Seoul 2020

Transition toward sustainable city of Seoul:
Infrastructure technology analysis

Siemens Cities Center of Competence Asia

Seoul is well on its way to becoming a more energy independent city meeting its objectives in the One Less Nuclear Power Plant and the Seoul Sustainable Energy Action Plan.

Our study has modeled the impacts of some unprecedented investments in 46 transport, buildings and energy technologies that deliver over 23% greenhouse gas savings by 2020. This is by far the most rapid emissions reductions in any city that the CyPT model has been deployed.

Executive Summary

When it comes to progress in reducing greenhouse gas emissions amongst megacities, Seoul leads the way. In just two years, between 2012-2014 the city managed to reduce energy consumption by 2 million TOE and 10 million tons of greenhouse gas by 2020, compared to 2005. The city has even greater ambitions and has engaged with Siemens' City Performance Tool (CyPT) to identify further savings through the deployment of new transport, energy and building technologies. Transition toward sustainable city of Seoul: Infrastructure technology analysis provides an in

depth analysis of the greenhouse gas savings for each of these technologies. Overall Siemens tested the performance of over 46 infrastructure technologies. The report does not argue that all technologies will be implemented simultaneously but it gives a basis for the city to compare the efficiency of each technology. The report also showcases infrastructure technologies that have been deployed in global cities that are striving towards a more independent and greener energy future.

This report has found:

1. By mobilising its public investment and private capital, the city of Seoul can reduce its greenhouse gas emissions by an unprecedented 23% in just six years from the period 2014 to 2020.
2. Through the CyPT, Seoul is modelling a green transport revolution with planned public investments in metro lines, BRT lines, E-buses and the introduction of a city tolling network. Our model estimates over 2.4 Mton of greenhouse gas savings arising from these investments or 4.9% reductions of total citywide emissions adding nearly 1.5 million full time equivalent jobs to the local economy.
3. In the buildings sector, the replacement of commercial and residential lights and technologies that optimise the use of spaces and automate functions can deliver nearly 3.6 Mton of greenhouse gas savings or 7.6% of citywide emissions.
4. In the energy sector, accelerating Seoul's current investments in renewable energy installations (such as solar photovoltaic etc.) and increasing distributed energy through a combined heat and power system will add nearly 2.8% of savings by 2020
5. Furthermore, by enhancing the implementation rate to maximize the impact of different infrastructure levers, there are more emission reduction potentials in 2025 for a lower carbon and more sustainable Seoul.