

ECO-CYCLE MODELS AS SUPPORT IN URBAN PLANNING FOR A CIRCULAR ECONOMY LEADING TO ECO-CITIES

Björn Frostell

*KTH Royal Institute of Technology
Sweden*

Abstract

The rapid development of population and economic development challenges resource supply and waste management in the global economy. This has led to the increasingly popular concept of a circular economy. In a circular economy, physical resources (materials and energy) circulate to a great extent – waste materials are recycled into new products and energy is used at different levels, all in an effort to decrease the material and energy input per product and service unit delivered to society. With an increasing fraction of the world population living in cities, this concept is especially important in reshaping cities to become eco-cities. Eco-cities are here understood as cities that function in harmony with ecosystems and having a sustainable physical resource supply, a sustainable infrastructure and a sustainable waste management – all based on circularity. This challenging future requires new approaches to urban development, revised planning methods, new infrastructure solutions and new (proactive) monitoring approaches and new means of handling rest materials, waste and effluents. The session Systems Thinking for Innovation in Urban Planning for a Circular Economy – The Eco-City gathers researchers, city officials and industrial representatives interested in future urban development with an emphasis on creating ecologically sustainable urban areas. The intellectual basis for the session is to look at the city as a complex organic system, metabolizing physical resources under the influence of social forces and where the physical metabolism will have to become more efficient in the future.