

Environmental Future and Fourth Industrial Revolution

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Abstract

Sustainable Development (SD) is the biggest challenge to the 21st century and transition to the Fourth Industrial Revolution (4IR). The United Nations Food and Agriculture Organization (FAO) has estimated that global demand for food will increase 60% between 2006 and 2050[1], this will require the world's farmers to produce more food in the next 40 years than they have done in the last 10,000 years[2], The International Energy Agency (IEA) forecasts that an increase in global energy consumption approximately 30% by 2040[3], with a 71% increase in non-OECD economies[4] this will lead to a 34% rise in global energy-related CO₂ emissions by 2040 compared to 2012.[5] Meanwhile, the OECD's International Transport Forum forecasts that there will be approximately 2.5 billion cars on the road by 2050, up from just over 1 billion today.[6] Aircraft manufacturer, Boeing, estimates that global demand for commercial airliners will reach almost 40,000 in the next two decades [7], which is double today's total fleet. New technologies are enabling societal shifts by affecting economics, values, identities and possibilities for future generations.

The smartphone has become essential; in 2016 approximately 3.8 billion people had a smartphone subscription, a figure that is projected to rise to approximately 6 billion by 2021,[8] by smaller and more powerful sensors that are becoming ever cheaper, and characterized by artificial intelligence and machine learning as the Fourth Industrial Revolution.

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Biography

Ahmed Tawfik has diverse experiences in chemistry, environmental control and treatment. He has worked in Egyptian Environmental Affairs Agency since 2000 as an environmental researcher and has several papers in environmental treatment and green chemistry. Ahmed has

established environmental system management for different organization to implement, monitor and control the environment in Egypt and UAE. Dr Ahmed has received many appreciation awards from the Egyptian minister and UAE ministers.