Energy and Economy Transition in China under the Global 1.5C target

Kejun Jiang
Senior Researcher, Energy Research Institute in China

■Abstract

Energy supply play most important role in the deep cut future. Recent IPCC reports clearly presents rapid transition in energy system. By 2050, renewable energy and nuclear will dominate energy supply. This is same story for China. Figure 1 show the primary energy demand in China based on IPAC results. The energy industry will shift largely to renewable energy and nuclear. Figure 2 give power generation in the 1.5°C scenarios. All these show the energy sector transition is significant, and they present one part of economic transition.

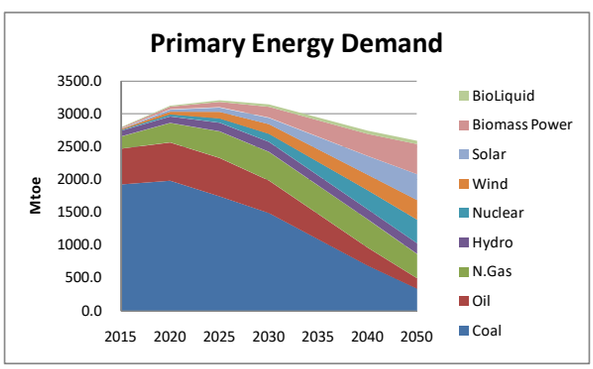

Figure 1 Primary energy demand in China, 1.5 scenario

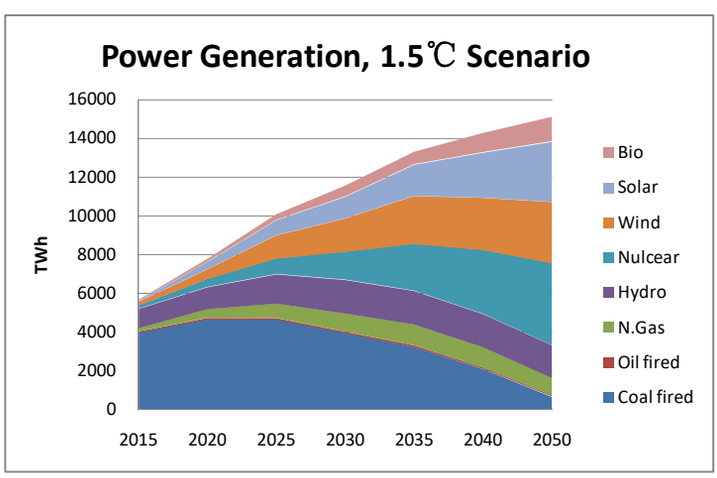

Figure1 Power generation scenarios for China, 1.5 scenario

Clear reduction targets will ask industries and consumer to response. Policies for reduction could change the production structure. New industry process including hydrogen as feedstock and reduction materials to make steel, chemical products; new technologies including advanced battery for vehicles and power storage, advanced nuclear power generation etc.; new materials which could replace high emission products, such as plastic

from renewable materials; new consumption behaviors including carbon labeling, carbon footprint life, which can change manufacture industry significantly; new energy use pattern to be zero emission energy supply, or even negative emission energy supply. Due to GHG emission reduction, the whole economic system has to make the transition to match the requirement for deep cut of GHGs.

■Biography

Kejun Jiang's research focus is energy, climate change mitigation and air pollution prevention policy assessment by using IPAC modeling, to support national five year plans, and long-term planning. He began his research in ERI from 1990, and led the development of Integrated Policy Assessment Model for China (IPAC). IPAC modeling team is now a leading research team on China's 2050 energy transition studies by providing benchmark research results. Major research focus includes energy and emission scenarios, energy policy, energy system, energy market analysis, and climate change, local environment policies and international negotiation. He also was authors of IPCC for Special Report on Emission Scenario from 1997, and Working Group III Third Assessment Report, leader author for IPCC WGIII AR4 Chapter 3, and leader author for GEO-4 Chapter 2, CLA in WGIII of IPCC AR5, LA for IPCC AR5 Synthesis Report, CLA of IPCC Special Report on 1.5℃ Warning, Vice Co-Chair of GEO6. From 2010, he is author for UNEP Emission Gaps and authors of WEOs, Emission Gap reports by now. Now he is lead author of IPCC AR6 WGIII. He also joined international research collaboration projects such as EMF, FP6, FP7 and H2020 research projects. He is member of Scientific Panel of UNEP CCAC, and Scientific Committee of IAMC. He got his Ph.D in Social Engineering Department of Tokyo Institute of Technology.