



Status, challenges and countermeasures of demand-side management development in China



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ABSTRACT

Demand-side management (DSM) is an effective means to construct low-carbon electricity system, improve energy efficiency and fastly enhance the sustainable development of economy. DSM in China has entered a period of rapid development. A series of policies and regulations related to DSM have been issued by some national ministries in China. However, some problems exist in the implementation of DSM. In view of that, the current situation of DSM development in China is analyzed in this paper from the three aspects of policies and regulations related to DSM, DSM organizational management and DSM development of representative regions. Following that, the challenges faced in DSM implementation are discussed and feasible measures are proposed based on the challenges. This paper is conducive to give impetus to the development of DSM in China.

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1. Introduction

China has become the world's biggest energy-consuming country nowadays. However, it is still a country with low energy utilization efficiency ironically. Accordingly, energy conservation,

low-carbon economy and greenhouse gas emissions reduction are major strategic goals of China's social and economic development for a long period of time in the future. China has made resources conservation as a basic state policy, and stresses on both developing and saving, with priority given to saving. The “five-in-one”

Table 1
Programmatic documents for energy saving.

Publishing time	Issued department	Document name
2010.02.06	the State Council	Notice on further accelerating the elimination of backward production capacity
2010.03.26	State-owned Assets Supervision and Administration Commission	Interim measures for the supervision and management of energy saving and emission reduction on central enterprises
2010.04.08	Ministry of Industry and Information Technology, Ministry of Finance and Ministry of Science and Technology	Notice on the construction of resource-saving and environment-friendly enterprises
2010.04.14	Ministry of Industry and Information Technology	Guidance on further reinforcing energy conservation of small and medium enterprises
2010.05.04	the State Council	Notice on further intensifying the efforts to ensure the realization of emission reduction targets during “The Eleventh Five” period
2010.07.01	Six ministries including National Development and Reform Commission and Ministry of Science and Technology	Policy framework of resources comprehensive utilization technology in China
2010.09.14	Seven ministries including National Development and Reform Commission and Ministry of Finance	Management measures for clean development mechanism fund in China
2011.03.16	the State Council	“Twelfth Five-Year Plan of Economic and Social Development”
2011.06.20	Ministry of Finance and Ministry of Transport	Management rules of energy conservation special funds for transportation
2011.06.21	National Development and Reform Commission and Ministry of Finance	Management measures for fund management of financial incentives on technology-improving of energy saving (edition 2011)
2011.06.22	National Development and Reform Commission and Ministry of Finance	Comprehensive demonstration guidance on fiscal policy for energy conservation
2011.08.31	the State Council	Program of energy conservation and emissions reduction during twelfth five-year
2011.10.09	National Development and Reform Commission, Ministry of Finance, Ministry of Housing and Urban–Rural Development as well as National Energy Administration	Guidance on the development of natural gas distributed energy
2011.10.17	the State Council	Comments on strengthening the main part of environmental protection
2011.11.01	Five ministries including National Development and Reform Commission and Ministry of Commerce	Roadmap of gradually phasing out incandescent
2011.11.11	Ministry of Agriculture	Comments on further strengthening energy conservation of agriculture and rural areas
2011.12.01	the State Council	Program of controlling greenhouse gas emissions during twelfth five-year
2011.12.05	National Energy Administration	Twelfth Five-Year Plan of National Energy Technology
2011.12.07	Twelve ministries including National Development and Reform Commission and Ministry of Education	Implementing program of energy saving and low-carbon activities for million enterprises
2011.12.15	the State Council	Twelfth Five-Year Plan of National Environmental Protection
2011.12.29	National Development and Reform Commission	Implementing program of comprehensive utilization of bulk solid wastes
2011.12.29	National Development and Reform Commission	Guidance on comprehensive utilization of resources during twelfth five-year
2012.01.15	Ministry of Commerce	Guidelines on energy saving demonstration of retail sector
2012.01.31	Seventeen ministries including National Development and Reform Commission and the Propaganda Department of the Central Committee	Implementing program of nationwide campaign on energy conservation and emissions reduction during twelfth five-year
2012.04.27	Ministry of Finance and Ministry of Housing and Urban–Rural Development	Implementing guidance on accelerating the development of green building construction
2012.06.16	the State Council	Development plan of the industry of energy-saving and environmental protection during twelfth five-year
2012.07.09	the State Council	Development plan of national strategic emerging industries during twelfth five-year
2012.07.11	Ministry of Industry and Information	Comments on further strengthening industrial energy conservation
2012.08.06	the State Council	Twelfth Five-Year Plan of Energy Saving
2012.11.06	National Development and Reform Commission, Ministry of Finance as well as Ministry of Industry and Information	Implementing regulations of energy-efficient distribution transformers promotion from energy-saving products benefits the mass project
2012.11.28	National Development and Reform Commission and Certification and Accreditation Administration	Notice on enhancing energy management system construction for million enterprises

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