

에어컨에 대한 에너지 효율적인 규격의 제정 -중국의 경험

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Energy Efficiency Standard Development for Air Conditioners -China Experience

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요 약

To address the urgent situation of electricity shortage, China realizes the need to promote the air conditioning equipment with a higher energy efficiency rating. Organized by the China National Institute of Standardization (CNIS) three committees have been working on the new energy efficiency standards in the last two years. As described in the Paper the backbone of these standards is the energy efficiency labeling system. Defined by the Level 1 through Level 5, Level 1 being the most efficiency, the standards outline the energy efficiency levels for the unitary air conditioning equipment, the chillers, and the room air conditioners. The standard committees also adopted the least life cycle cost (LLCC) models to determine the proper energy efficiency levels. The life cycle cost, which includes the initial consumer equipment purchase price and the lifetime running cost, is used to see how the each energy efficiency level will cost the country from the natural resources point of view.

This paper illustrates the technical challenges these Chinese GB committees faced during the time of standard development. In order to build the LLCC models the committees conducted a large number of experiments using the air conditioners currently available on the market. To complement the experiments, the committee members also ran computer simulations on various cost options to determine the most cost effective approaches on the air conditioner designs. It was decided in the committees that the second highest level, Level 2, should have the least life cycle cost with today's technology.