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## BRAZILIAN COLD CHAIN PANORAMA

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**ABSTRACT**

This paper presents an overview of relevant aspects concerning the Brazilian cold chain, such as its infrastructure, energy sources and expenditures, legislation and technology. Some refrigerated products with nationwide relevance were selected to assess the cold chain. Their production and consumption is presented based on available data from the Brazilian Institute of Geography and Statistics (IBGE). An overview of the cold chain infrastructure is presented and described, followed by the estimation of its required storage capacity and the associated refrigerated fleet size. Energy consumption and system efficiency are assessed for livestock products based on both the Final and Useful Energy, based on the Brazilian Useful Energy Balance. An overview of the country legislation and government ordinances are presented, followed by R&D actions and industrial structure. Data assessment shows an expanding of the volumetric capacity, from 5.7 Mm<sup>3</sup> in 2010 to 16.0 Mm<sup>3</sup> in 2014, but still below the required capacity of 54.6 Mm<sup>3</sup>, calculated in this paper. The 38.5 Mm<sup>3</sup> deficit is an opportunity for new industrial investment followed by an effort in quality improvement of the installed infrastructure. Refrigerated vehicle fleet is estimated to be around 7500 vehicles for internal distribution, with a 43% share for long-haul trucks and 57% for short-haul trucks. Electricity drives the cold chain, with 24.5 TJ in 2014. The energy efficiency index indicates an improvement on the cold chain quality due to replacement of old refrigerated systems by new ones. An overview of the Brazilian legislation, composed by a set of laws and

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