

District Cooling in Egypt: An Introduction

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Introduction

District cooling systems aim to distribute cooling capacity through chilled water or other media from a central source to multiple buildings through a network of underground pipes for use in space and process cooling.

The pipelines deliver chilled water to offices, residential and industrial buildings to cool the indoor air of the facilities within a district.

The advantages of the district cooling systems include:

- Energy-efficiency: District cooling systems are energy efficient; they consume (i) 35% less electricity than traditional air-cooled air-conditioning systems; (ii) 20% less than individual water-cooled air-conditioning systems using cooling towers.
- Reduction of greenhouse gases emissions: Given the decrease in fossil fuel use for power generation, greenhouse gas emissions are also reduced.
- Reduction of noise pollution: With the removal of chiller plants and heat-rejecting condensers from individual buildings, noise, vibration, and waste heat pollution are significantly reduced. Equipment in central district cooling systems may be kept under better acoustic, vibration, and waste heat control.

District Cooling in Egypt

District cooling has been implemented in many projects in Egypt, and the market is expected to grow locally and regionally due to the increasing demand for energy-efficient cooling technologies.

Legal framework

The umbrella legislation covering district cooling as a construction project is the Construction Law no. 119/2008,

which has covered the competencies of the Ministry of Housing, Utilities and Urban Communities, urban planning and development, as well as the licensing processes in construction projects.

Additionally, Presidential decree no. 63/2005 re-organises the Housing and Building National Research Centre, an independent body supervised by the Ministry of Housing, Utilities and Urban Communities, to set out the most recent policies and research plans in the field of construction. The Centre is competent to specify international standards for design, construction conditions, and building materials specifications. The Centre also sets guidelines and methods to achieve better performance, lower cost, improve safety rates, and protect the environment.

Decree no. 250/2015 was issued to establish a permanent supervisory committee and a drafting committee of nine members to prepare the district cooling code (the "**District Cooling Code**"). Finally, decree no. 977/2018 issued by the Ministry of Housing, Utilities and Urban Communities put the District Cooling Code into force in Egypt.

The committee comprises scientists, engineers, consultants, and contractors specialised in district cooling. The District Cooling Code includes seven chapters and covers all technical aspects from system manufacturing requirements to implementation.

Licensing

The District Cooling Code highlights that district cooling projects need to be licensed and approved before implementation by the competent authorities. The authorities may differ according to the project location. In addition, a license by the Ministry of Housing, Utilities and Urban Communities is mandatory. Furthermore, the developer or the contractor should obtain a construction licence in addition to other permits from the relevant municipality or the New Urban Communities Authority ("**NUCA**").

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