



Cool down

Why investors should consider district cooling when it comes to supporting the energy transition

by Max Burke

The world has a growing need to cut down on its fossil fuel usage. The goal of reaching net zero by 2050 is increasingly imperilled by the relatively slow progress of the energy transition from more polluting forms of energy to cleaner fuels. Until now, much attention has been focused on the way clean energy can help accelerate that transition by replacing fossil fuels, such as coal, when it comes to providing power to homes and businesses around the world. But there is also a need to find more sustainable ways of cooling premises particularly in hotter regions.

One form of infrastructure that enables this to happen is district cooling. The technology

delivers chilled water to cool premises such as homes, offices and factories that might otherwise be forced to depend on individual air conditioning units. In district cooling, a central refrigeration plant, equipped with industrial-scale chillers, uses electricity to cool water, sending it to customers through underground pipes. Once at the customer's location, the water is used to cool air, which is then circulated around the building to keep temperatures down. Carrying out this operation centrally is far more energy- and cost-efficient than using individual air conditioning units at each location. The sustainability of the operations can be further increased by harnessing clean energy, such as solar panels

or wind turbines, to generate the power required to make the electricity at the central cooling location.

Earlier this year, Actis purchased a 50 percent stake in Emirates District Cooling Company — otherwise known as Emicool — with Dubai Investments remaining in the deal as the co-owner. Established in 2003, Emicool's district cooling system connects more than 22,000 customers in more than 2,000 buildings across the United Arab Emirates (UAE), including homes, shops, commercial buildings, hotels, hospitals and educational establishments. It has 17 plants currently in operation across the UAE — primarily in Dubai — and its customers span major developments, including Dubai Expo, Dubai Investment Park, Dubai Motor City and Dubai Sports City. The company is looking to grow its portfolio of plants.

Centralized cooling can not only help meet a country's energy needs, but it can also play an important role for investors who are seeking of the stable, predictable returns typical of infrastructure, while helping drive the energy transition. Centralized cooling systems are essential for societies across the Middle East if they are to build resiliency against climate change. The systems drive reductions in energy usage and are up to 50 percent more efficient than conventional cooling. They are therefore the preferred means for air conditioning in the region.

These investments generate long-term, stable returns based on long-life concessions, which offer exclusive rights throughout a dedicated service territory, much like a traditional electricity utility.

THE NEED FOR DISTRICT COOLING

Demand, especially in areas such as the Middle East, is consistent given the climate, essentially tracking the outside temperature, making it a very stable form of core infrastructure. District cooling is an essential service; consumers, business and others will continue to need it to meet their needs for years to come. These are the kinds of characteristics infrastructure investors seek as they try to access assets, which offer dependable yields in excess of what is available elsewhere in the traditional fixed-income market.

Of course, there is always a need to drive further improvements, both for operational efficiency and climate protection. This is at the heart of a sound strategy. An example of this is installing real-time leak

detection using distributed temperature-sensing technology. This enables the operation to spot water leaks at an earlier stage, reducing water loss in a region where water resources are scarce. Emicool is also increasing the amount of treated sewage effluent that the plants circulate as cooled liquid in lieu of potable water, again saving on valuable water resources.

Countries that adopt district cooling can see significant benefits. For the UAE and other warm, sunny countries where both supply and demand make it viable, the technology brings significant reductions in energy consumption. That not only reduces power costs to the consumer, but it also reduces the carbon footprint. This is particularly valuable in the UAE, which wants to implement a 40 percent improvement in energy efficiency by 2050. Technology such as district cooling can play a critical role in helping meet those goals.

Not every location in the world is suitable for the technology, however. For many countries, the weather is not hot enough for long enough to warrant large-scale projects. The pipeline infrastructure required to circulate the cooled water also can make it difficult to retrofit in existing urban areas. New developments, in contrast, offer a far more suitable environment in which to build such systems, provided they are integrated into the overall construction plans.

THE BOTTOM LINE

District cooling is an affordable way for cities to help provide better living conditions. It offers a cheaper, more sustainable way of keeping people and buildings cool, and can help a country meet its decarbonization goals. Because district cooling systems are able to support many of these ambitions, this technology is likely to play a growing role around the world, including in hot, sunny locations in Latin America, Asia and Africa.

For investors, the case is compelling. District cooling offers the same kind of returns that other decarbonization infrastructure assets provide. The market for district cooling may still be in its infancy, but the opportunity for investors to allocate capital to the technology will only grow, benefitting not only investors but the world's climate as well. ❖

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