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District Energy

LATAM Conference 2023

SEP 27 - 29 | CARTAGENA | CO



Cartagena

| 27, 28 y 29 de septiembre |

Contribution of Energy Districts to the sustainability: Dubai - an example for other cities

Ahmad Bin Shafar
CEO – Empower Dubai

28/09/2023



Ahmad Bin Shafar

Chief Executive Officer of Empower, Dubai, the world's largest district cooling services provider.

Special Advisor on District Cooling to the United Nations Environment Program (UNEP)

Member of the board of directors of the International District Energy Association (IDEA).

Frequent speaker and lecturer on district cooling on global platforms.



“The woman is half of the society; any country which pursues development should not leave her in poverty or illiteracy.”

– Sheikh Zayed (The founding father of the UAE)

Empower takes pride in fostering gender balance across its organization, attracting top women talents to the vital district cooling industry, and preparing them to lead sustainable development.

#DTenColombia
#LalgualdadDeGéneroEsConmigo



Space Cooling & Carbon Emission

Global Demand for Space Cooling

Increasing global demand for air conditioning



Increasing concerns about carbon emissions.

Driven by heat waves, population growth, and urbanization, emissions from cooling are expected to double by 2030 and triple by 2100.

Energy Utilization for Cooling: Middle East region

- **Around 70% of energy consumed by buildings is for air conditioning in ME.**
- **Limited scope for passive/natural cooling due to the region's climate.**
- **Air conditioning has become a necessity rather than a luxury in the region.**

Climate Awareness and Energy Efficiency

- **The Middle East has been increasingly aware of climate change and global warming.**
- **There's a common trend in the region to focus on energy efficiency.**
- **Cleaner and more efficient active cooling systems are crucial.**

District Cooling as a Strategic Solution

- A strategic climate solution, particularly in warmer climates.
- Achieves up to 50% energy savings compared to conventional systems.
- Reduces annual CO2 emissions significantly.



Dubai is at the forefront of District Cooling technology

World's largest markets with around 2 million refrigeration tons (RT) capacity.



Dubai: Global Leader in District Cooling

Solid Macroeconomic Fundamentals of Dubai

Resilient Economic Growth

Resilient and healthy economy with one of the fastest-growing economies in the region.

Healthy Demographic Profile

Growing population, continuous expat inflows and increasing number of households.

Strong Growth in Residential Real Estate Supply

Expanding residential real estate economy & High density residential units.

Dubai's Sustainability Strategies

Dubai Integrated Energy Strategy 2030

Dubai Supreme Council of Energy:

- Dubai Clean Energy Strategy
- Demand Side Management (DSM) Strategy
- DC Operators Association, Dubai



Targets annual savings of 30% in Electricity and 30% in Water by 2030

District cooling is one of the key 11 pillars

Aims for 40% DC penetration by 2030

Empower

- **Established in 2003, by a Decree from the Government of Dubai.**
- **An end-to-end DCS provider (designs, builds and operates)**
- **Exponential Growth in a span of a decade and became the World's Largest District Cooling Services Provider.**
- **Listed on Dubai Financial Market in November 2022.**

Empower



Market share
in Dubai DC
Market



Total connected
capacity of more
than **1.5M RT**



More than
110,000
customers



1400+ buildings



86 District
Cooling plants



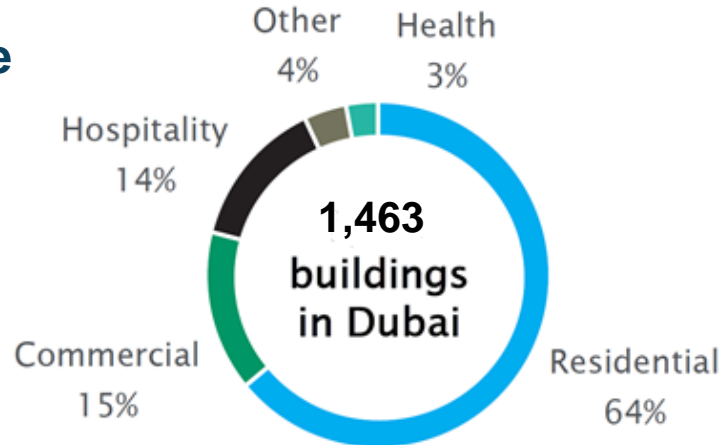
370+
kilometers
pipe network

Robust Business Strategy

- **Hybrid approach (public-private partnership)**
- **Utility services business model.**
- **Growth - organic and inorganic (acquisitions).**
- **Planned phased deployment.**
- **Optimizing cost of distribution network construction.**
- **Anchor clients (25-year concession contract).**
- **Backward Integration (ELIPS)**

Large and Diversified Customer Base

- Preferred DCS provider for Dubai's most iconic and landmark projects.
- Dynamic project portfolios
- Diversified Customer Base



World Class Integrated End-to-End Solutions

Design - Low Cost Modular Approach.

Procure & Build - In-house Project Management. Rapid deployment capabilities for pipe network construction

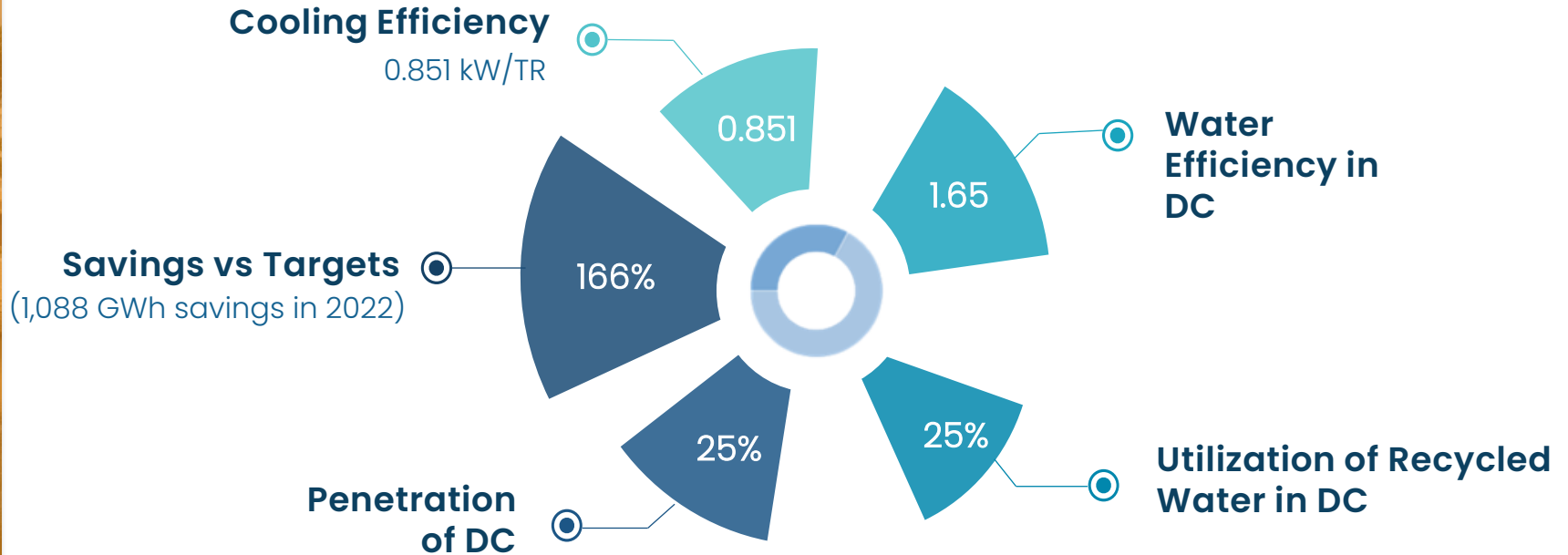
Operation & Maintenance - In-house dedicated 24/7 plant operators. Computerized maintenance management systems. Emergency solutions. Advanced Technologies including AI.

Command & Control Centre - Best-in-class Command and Control Centre

Metering & Billing solutions - Full Deployment of Smart Meters. End-to-end billing Solutions.

Customer Care - Multi-channel Customer Care

Dubai's District Cooling Leadership



JVC Plant 50,000 RT



DLRC Plant 47,000 RT



DIFC Plant 90,000 RT



DHCC Plant 133,000 RT



Za'abeel Plant 50,000 RT



Business Bay 1 Plant 45,000 RT



Business Bay 2 & 3 Plants 45,000 RT



Palm Jumeirah Crescent Plant 120,000 RT



Discovery Gardens Plant 102,600 RT



Palm Jumeirah Trunk Plant 105,000 RT





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Thank You!



EMPOWER

ENERGY
SOLUTIONS