

دائرة الطاقة
DEPARTMENT OF ENERGY



Abu Dhabi Demand Side Management Strategy 2030

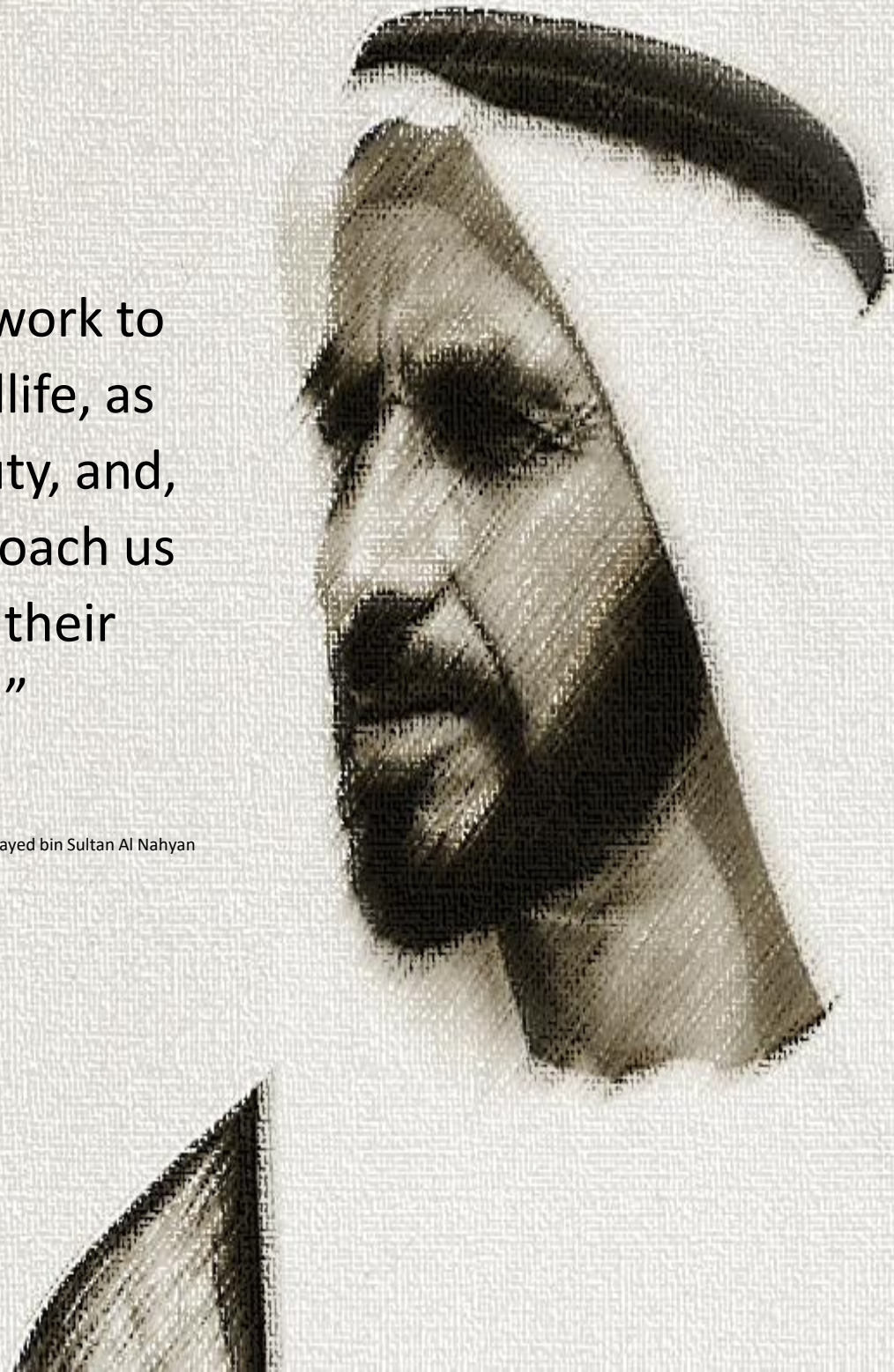
*Enabling Energy Efficiency as part of Abu Dhabi's
Energy Transition*

September 2022



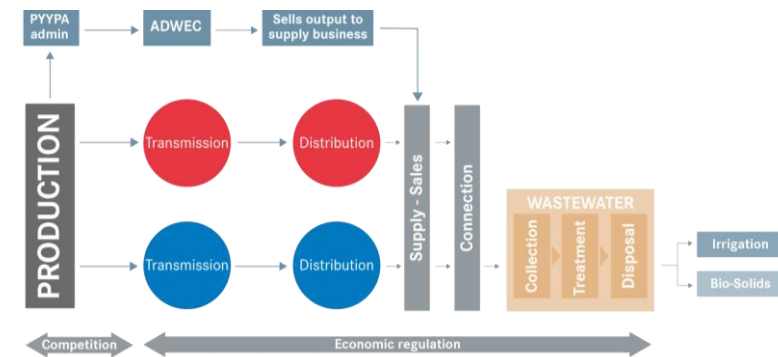
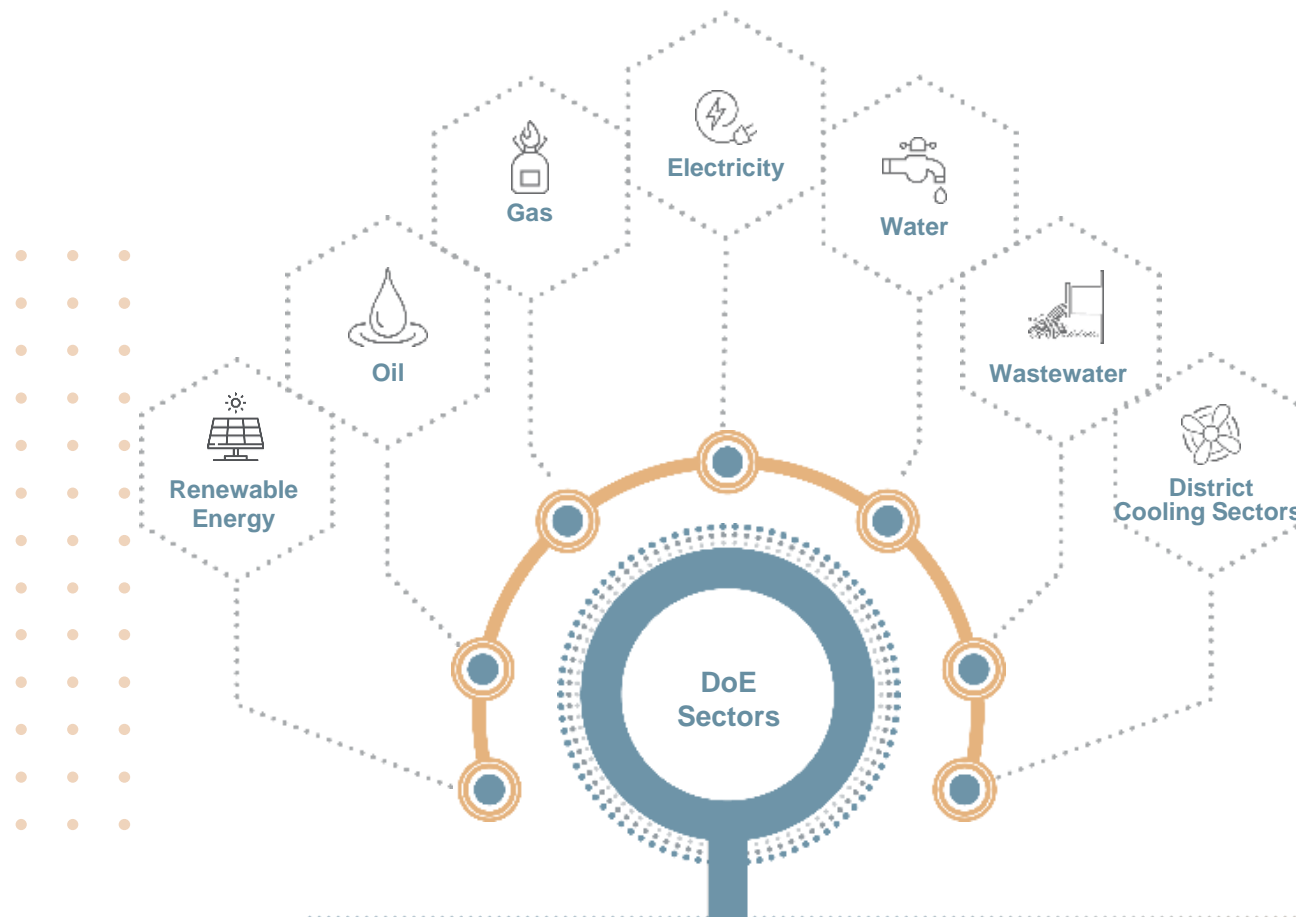
“With God’s will, we shall continue to work to protect our environment and our wildlife, as did our forefathers before us. It is a duty, and, if we fail, our children, rightly, will reproach us for squandering an essential part of their inheritance, and of our heritage.”

-Sheikh Zayed bin Sultan Al Nahyan



Championing the Energy Transition

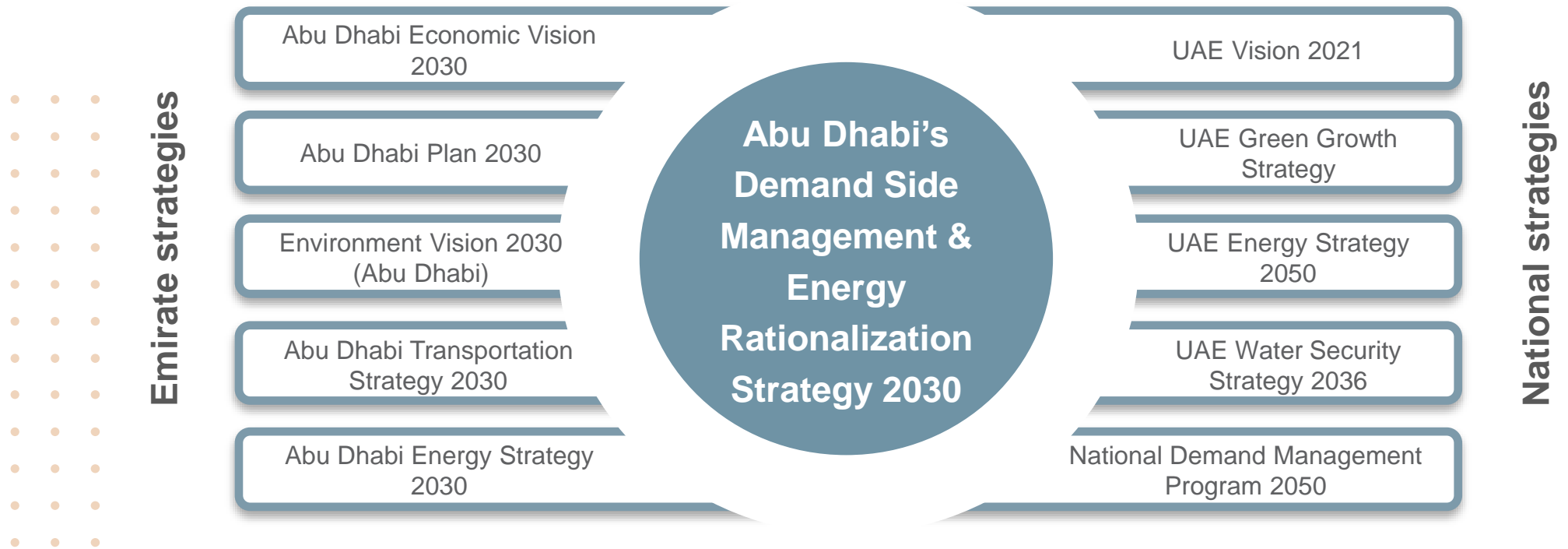
The Department of Energy works on developing strategic initiatives that diversify and secure energy sources for economic, environmental, and social sustainability.



- Electricity and Water use the central buyer model – EWEC
- EWEC is the single procurer of electricity generation / water production in Abu Dhabi, with objective of achieving least cost procurement solution and reduce sector costs
- Capacity procurement based on IWPP model – PPP financing structure

Maximizing value through the “very first fuel”*

The Abu Dhabi’s Demand Side Management & Energy Rationalization Strategy ensures alignment with the Emirate's strategies and the relevant national strategies



Abu Dhabi Demand Side Management and Energy Rationalization Strategy (DSM) 2030

 **Reduce electricity consumption by 22% by 2030**
*Against the 2013 BaU Scenario (baseline)
Electricity Saving: More than 19,000 GWh

 **Reduce water consumption by 32% by 2030**
*Against the 2013 BaU Scenario (baseline)
Water saving: More than 480 Mm³

Objectives

- 1** Conserving the emirate's resources by rationalizing consumption and raising energy efficiency
- 2** Enhancing energy security by reducing dependence on external natural gas
- 3** Conservation of the environment by reducing greenhouse gas emissions and conserving water



Building Regulations
Department Of Urban
Planning and Municipalities



Street lighting
Department Of Urban Planning
and Municipalities



Rebates & Awareness
Al Ain Distribution Company /
Abu Dhabi Distribution
Company



District Cooling
Department of Energy



Energy Storage
Emirates water & Electricity
Company



Standards & Labels
Abu Dhabi Quality Conformity
Council



Building Retrofit
DOE/ADES



Demand Response
Emirates water & Electricity
Company



Water Use & Reuse
Al Ain Distribution Company /
Abu Dhabi Distribution
Company



Abu Dhabi Cooling Demand

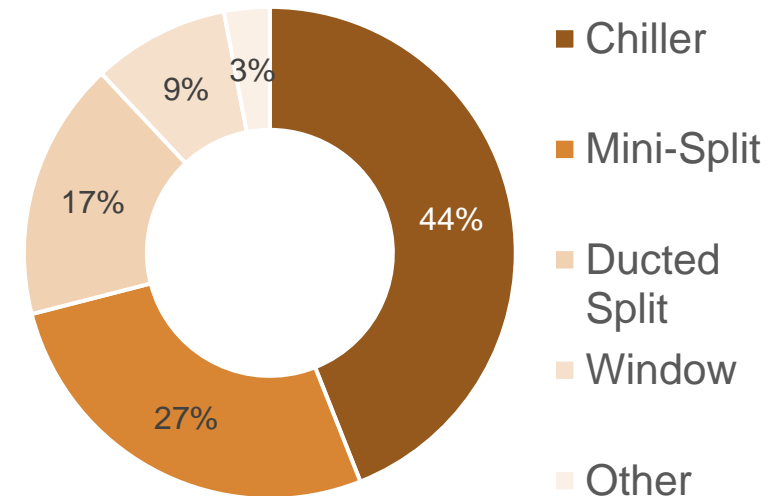
>3 TWh of electricity could be saved by DSM measures in cooling systems. This represents 16% of the 2030 target and **AED900m** in savings.



400,000 cooling units in Abu Dhabi's buildings and villas, of which 44% of cooling demand is met by chillers and 53% by room air-conditioners

11% of cooling demand is met by district cooling and 95% of cooling demand in high-rise buildings is met by chillers

75% of A/C systems are oversized



Leading by Example

Building Retrofits Pilot Project



New Chiller



New VFD controlled chilled water pumps



LED Lighting



Smart Thermostats



Smart Metering



Chiller Evaporative Cooling Membrane



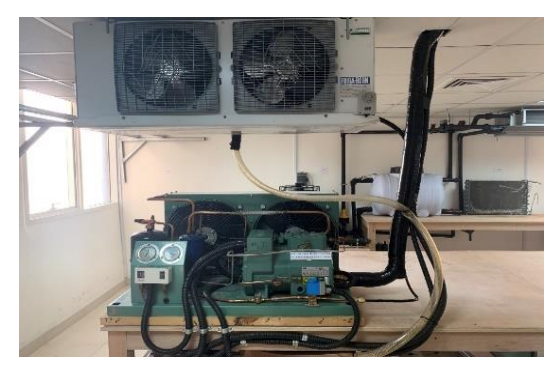
Artic Master for DX units



LED Lighting

Efficient Cooling Program

| Challenges | DSM Initiatives |
|---|---|
| Harsh environment where ~60% of summer peak demand is for cooling | <ul style="list-style-type: none">• Review/enhance MEPS enforcement• Enhance building and A/C systems design standards• Enable local testing capabilities• Improve HVAC technicians capacity through QCC certification scheme• Enhance awareness through behavioral change initiatives• Explore innovative solutions (e.g. CaaS, Refrigerants Management Strategy) |
| Electricity and water subsidies | |
| Enforcement of standards | |
| Technicians competence and capabilities | |
| Market gaps compared to international benchmarks | |





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