EmiratesGBC Technical Workshops

by Farnek

COP28 Insights -Energy Transition for the Built Environment

Presented by

Muna Alnahdi ,

Head of Sustainability & Consultancy

20 of Feb ,2024

Company Introduction

SINCE 1980 IN THE UAE

FARNEK

B2B

Farnek is the UAE's **leading Smart and Green facilities management** company.

Company Overall

active in all 7 Emirates

43 years of expertise in UAE

280+

9,000+ employees

3,000+ customers

FARNEK Hospitality

HITEK

Smashing! Cleaning Services

FARNEK Sustainability

H&G HITCHES & GLITCHES

B2C

Compliance & Quality

Training Center

24/7 Command Room/ Customer Care Centre

ISO Certfcaton

ISO 9001 | 14001 | 18001 | 41001 | 45001

Technology | Sustainability | Innovation | Cleaning |Maintenance | Security | Consultancy | Hospitality | Hitches & Glitches | Smashing

Supported more than 100 clients in their sustainability Journey for more than a decade

Leveraging our diverse team experience of more than 20 in various sustainability domains

Energy Management

- Energy Audits
- Energy Saving Retrofits (ESCO)
- Energy Management Strategy and Programs

Carbon Management

- Carbon Footprint Assessments
- Decarbonization Plan
- SBTi- net zero roadmap

Sustainability Certification

- Green Globe Certification
- Green Buildings (LEED)

Sustainability Tools

- Carbontek
- Powertek
- Hotel Optimizer
- Wastek

Muna Alnahdi

Head of Sustainability & Consultancy at Farnek

An award winner Energy and Sustainability expert with more than 14 years of experience in energy, green buildings, and decarbonization. Through her versatile experience and thought leadership, Muna has been assisting organizations to become real players in the field of sustainable development.

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Agenda

- COP28 Insights
- Why Energy Transition
- Energy Transition in the UAE
- Energy Transition and Decarbonization for the built environment
- Case Studies

I would like to learn more about you

Name , function and organization

1 word about you

Why you are here today ?

By 2030 , Energy Efficiency should be ?

A –double

B –triple

C- quadruple

D – the same

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Energy Efficiency improvement targets?

A –1% per annum

B –2% per annum

C – 3% per annum

D –4% per annum

By 2030 , Renewables should be ?

A –double

B –Triple

C- quadruple

D – the same

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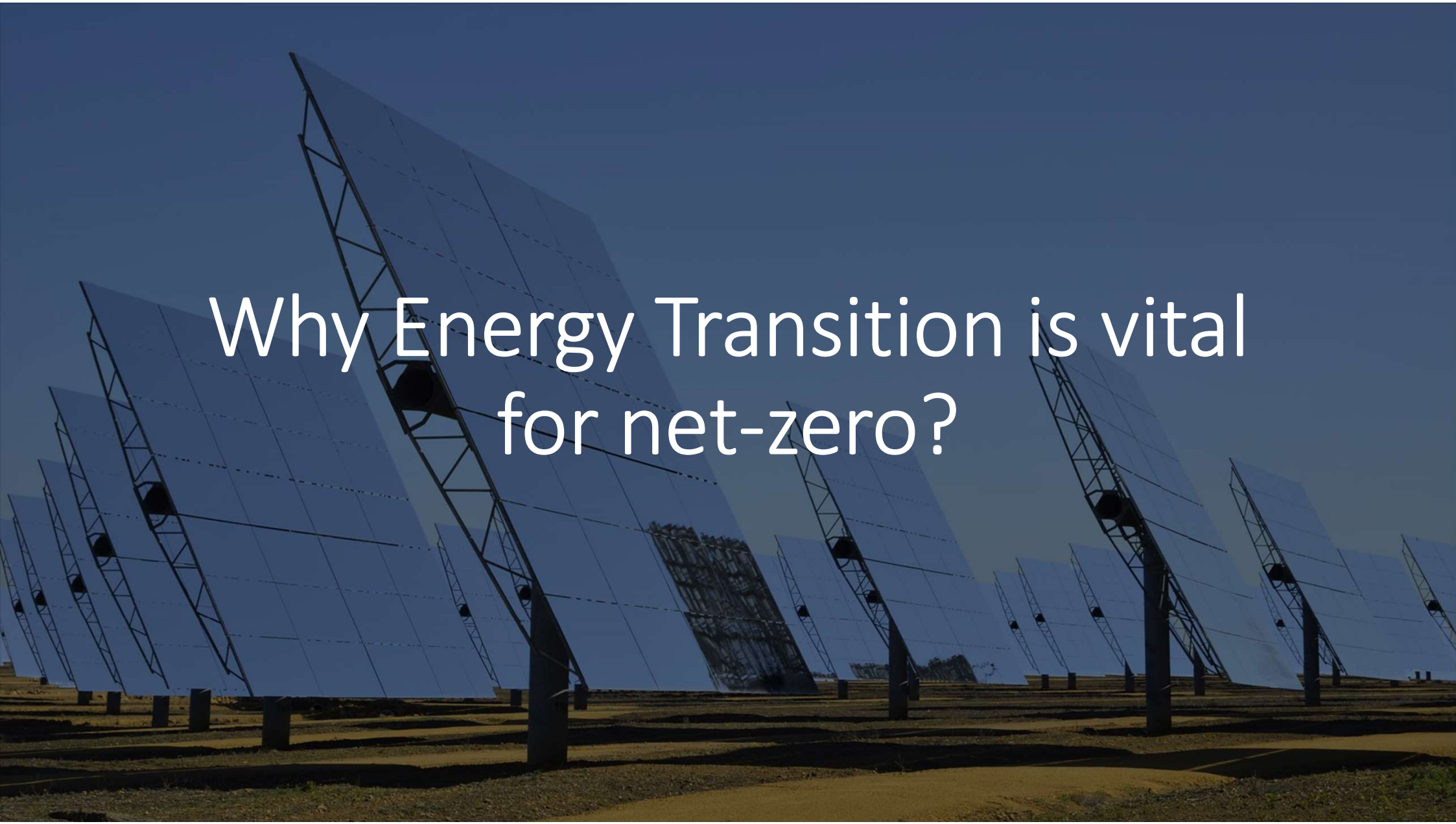
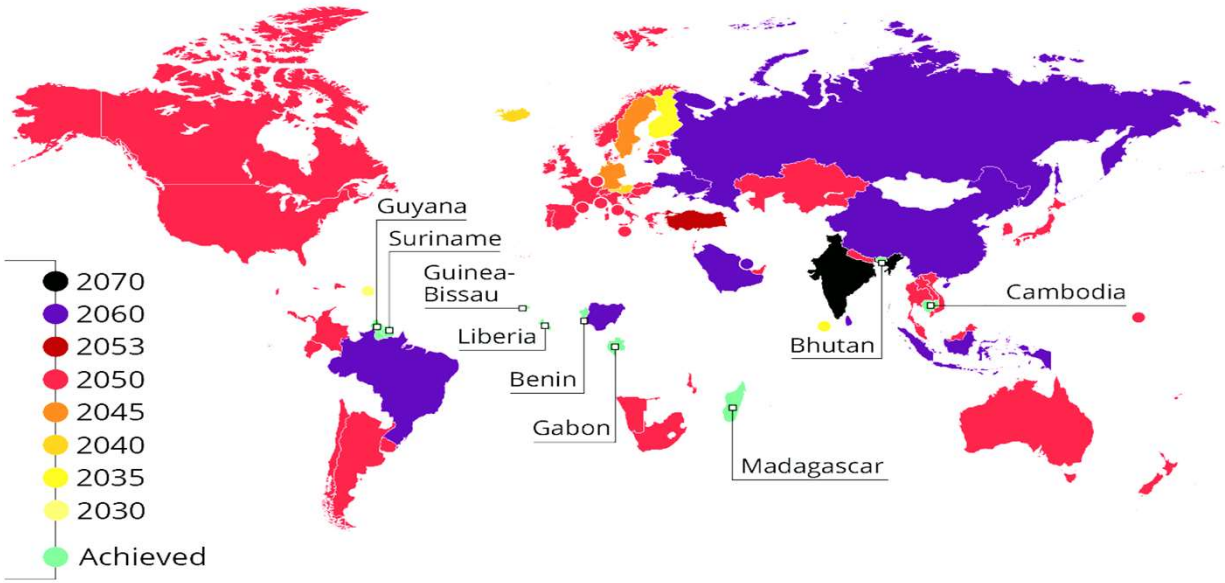

Why Energy Transition is vital
for net-zero?



THE PATH TO NET ZERO

Countries with laws, policy documents or concrete timed pledgees for carbon neutrality by targets year

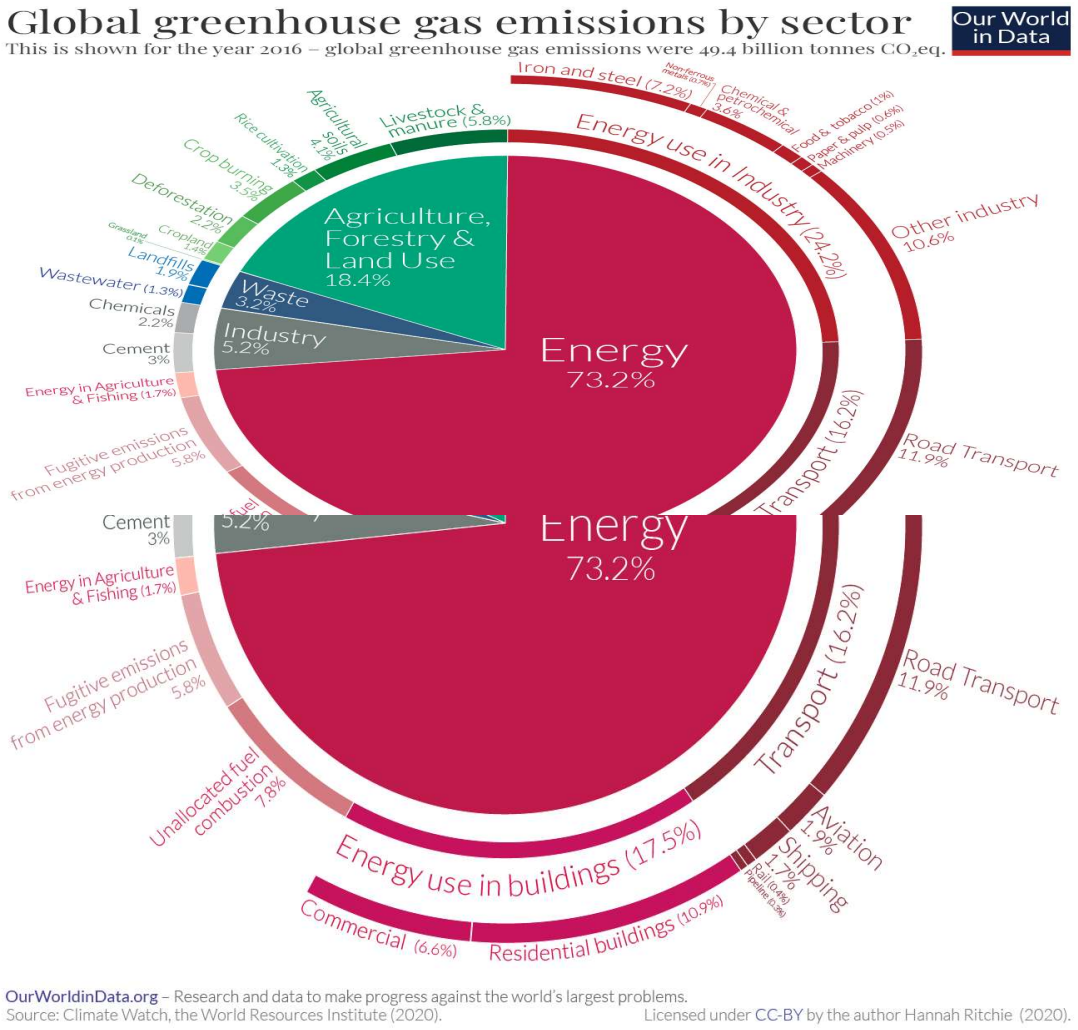
Net- Zero 2050 targets will transform the market towards a greener economy

+48%

66 out of 135

Nov 2021

> 73% global emissions from Energy



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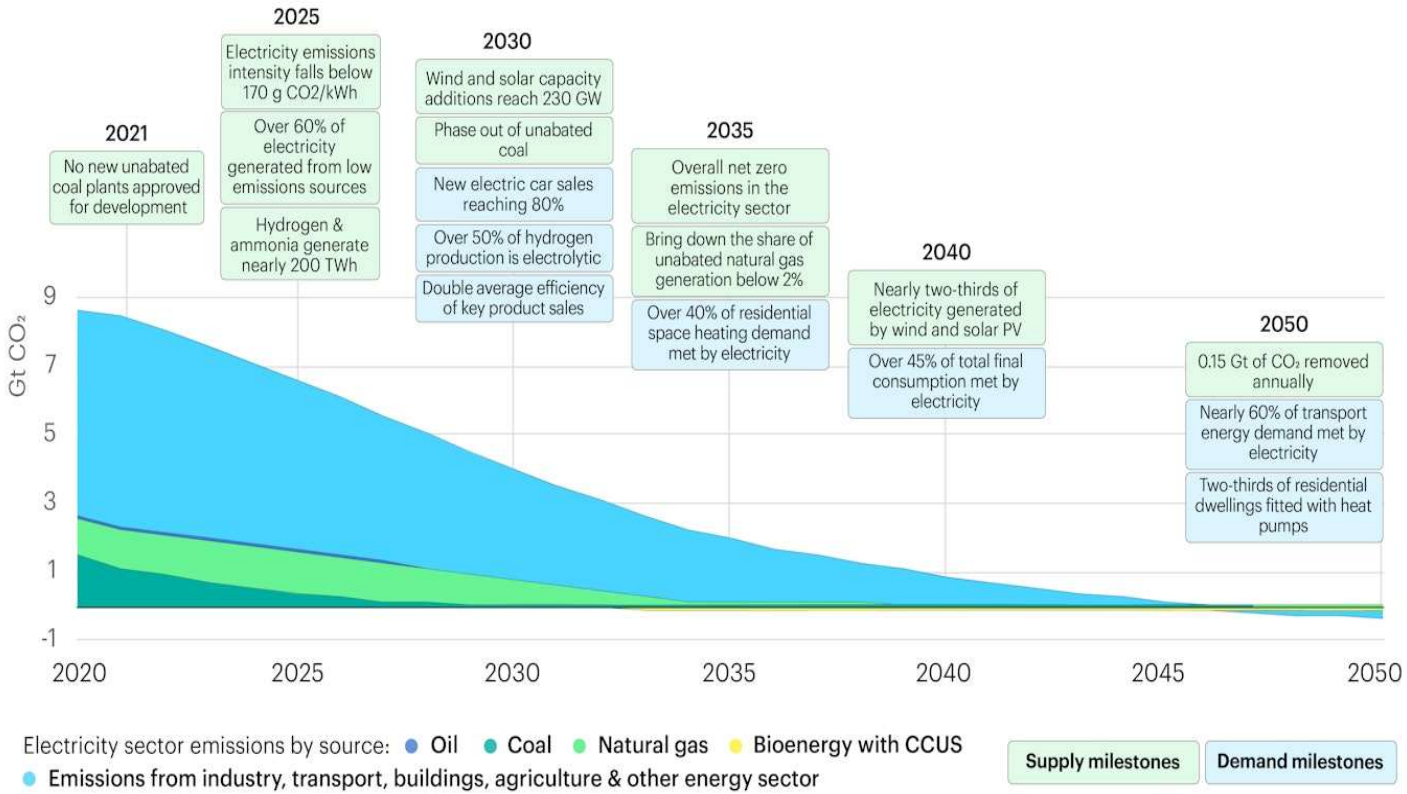
Energy Transition is key for achieving net-zero

- 60% CO2 Energy Emissions since 1992
- 80% of current energy is from fossil fue

Energy transition refers to the global energy sector's shift from fossil-based systems of energy production and consumption — including oil, natural gas and coal



G7 energy-related emissions and electricity sector milestones in the Net Zero Emissions by 2050 Scenario, 2020-2050

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Energy Transition in the UAE

An ambitious journey

The climate action journey in the energy sector to reach net zero by 2050

2017 — Launch of the UAE Energy Strategy 2050, a quantum leap in the UAE's energy sector

2020 — COVID-19 pandemic

2020 — Operation of the first nuclear power reactor, while the second and third reactors came online in 2022 and 2023, respectively

2021 — The launch of the UAE Net Zero by 2050 Strategic Initiative

2021 — Launch of the UAE Hydrogen Leadership Roadmap at COP26

2022 — Converting the Hassyan Power complex to produce electricity from natural gas, instead of clean coal

2022 — Starting the update of the UAE Energy Strategy 2050

2022 — Starting the development of the National Hydrogen Strategy 2050

2023 — Launch of

2023 — Declaring 2023 as the Year of Sustainability by the UAE President, HH Sheikh Mohamed bin Zayed Al Nahyan

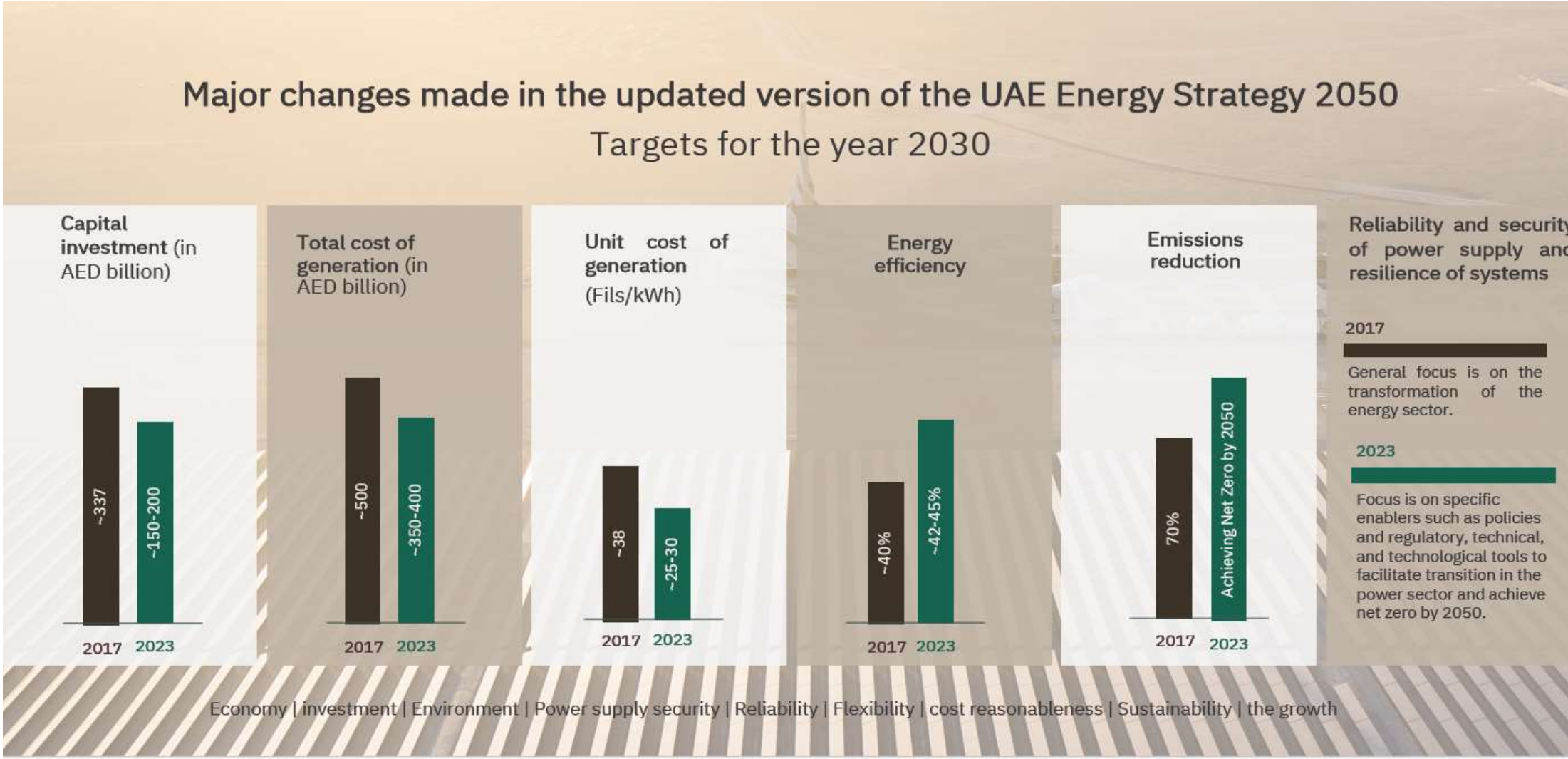
2023 — Hosting COP28

2050 — Achieve Net Zero by 2050

2071 — UAE Centenn 2071

Major changes made in the updated version of the UAE Energy Strategy 2050

Targets for the year 2030



Economy | investment | Environment | Power supply security | Reliability | Flexibility | cost reasonableness | Sustainability | the growth

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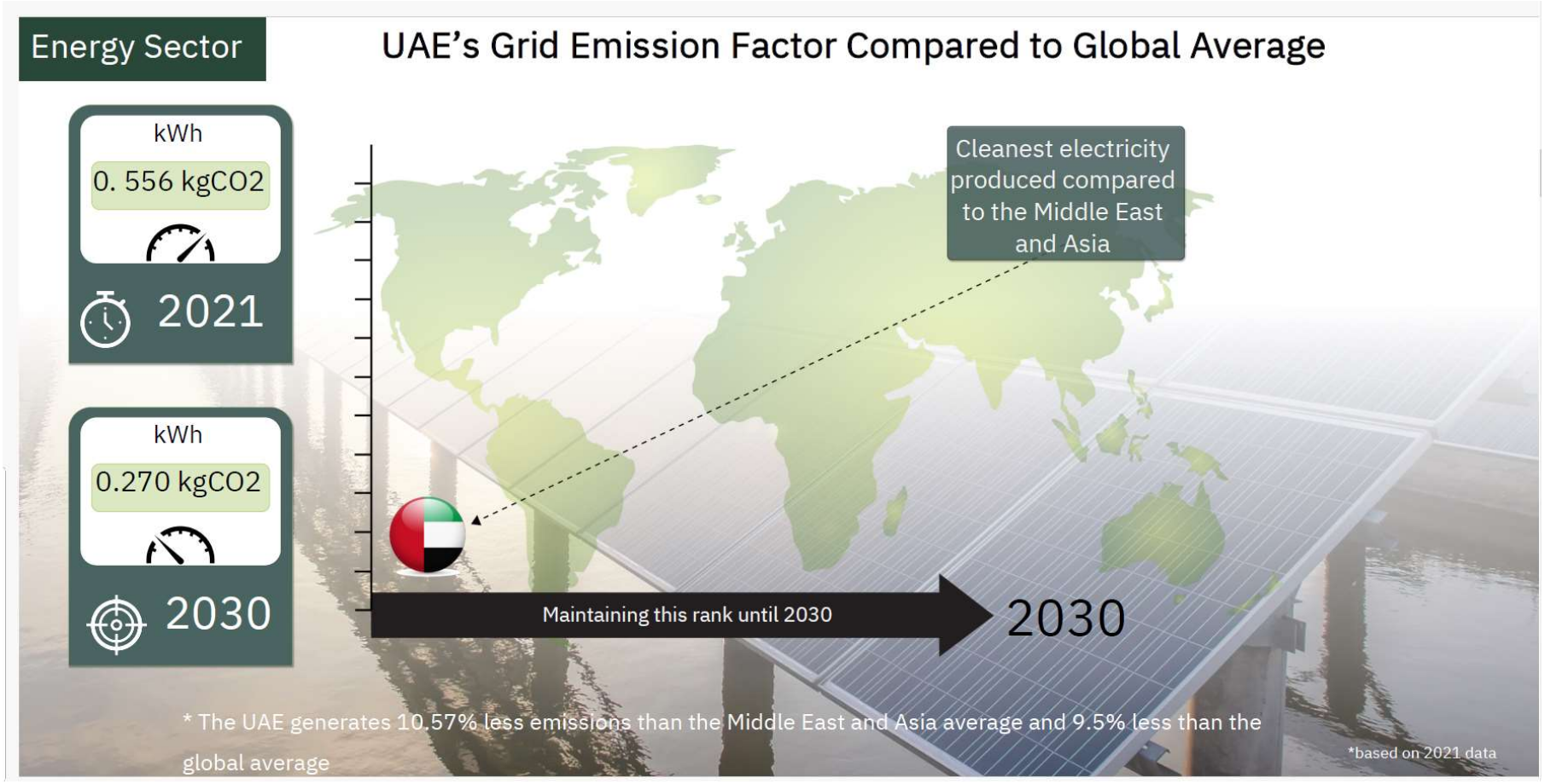
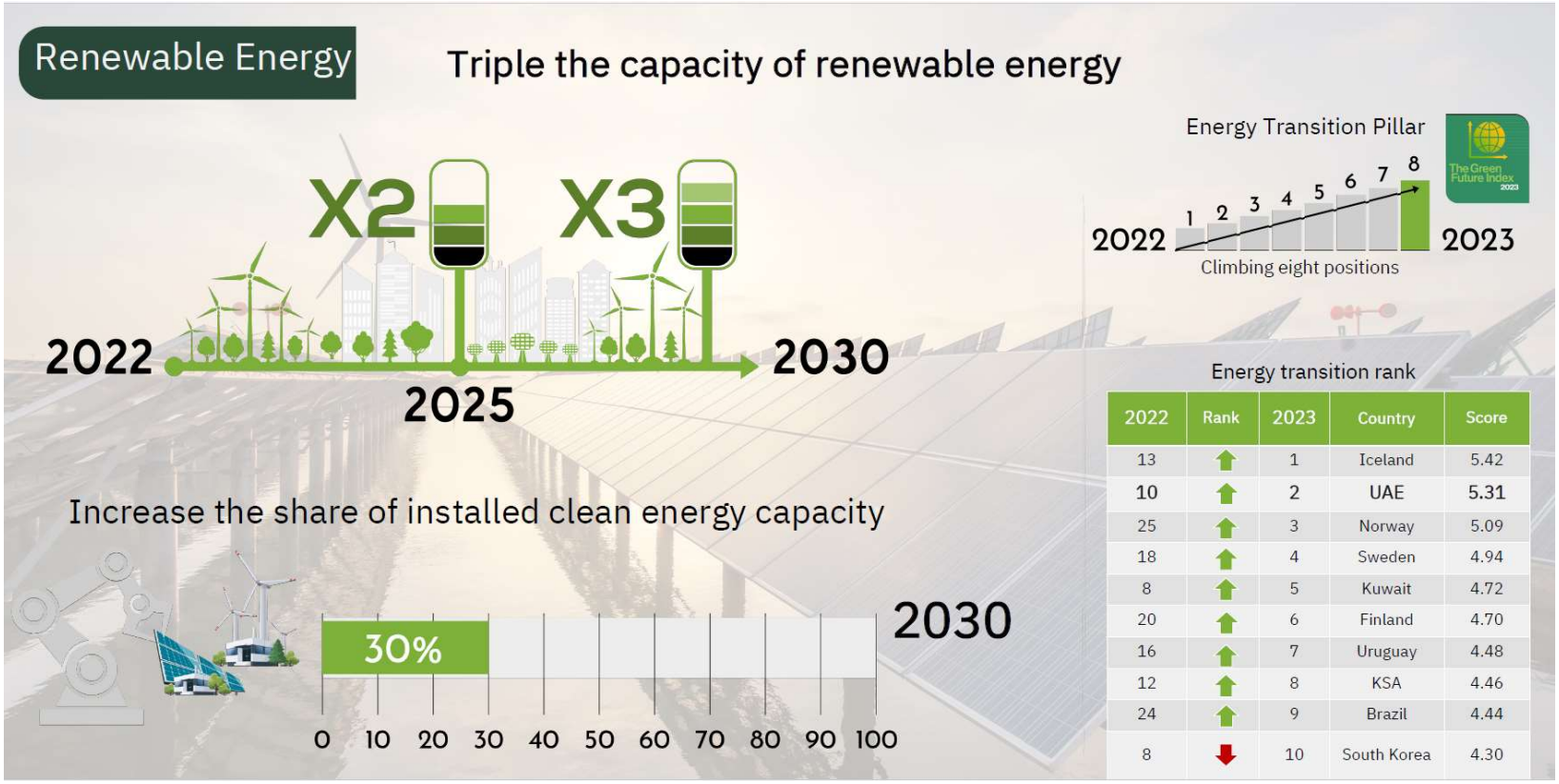
UAE Net- Zero Strategy – Grid Decarbonization

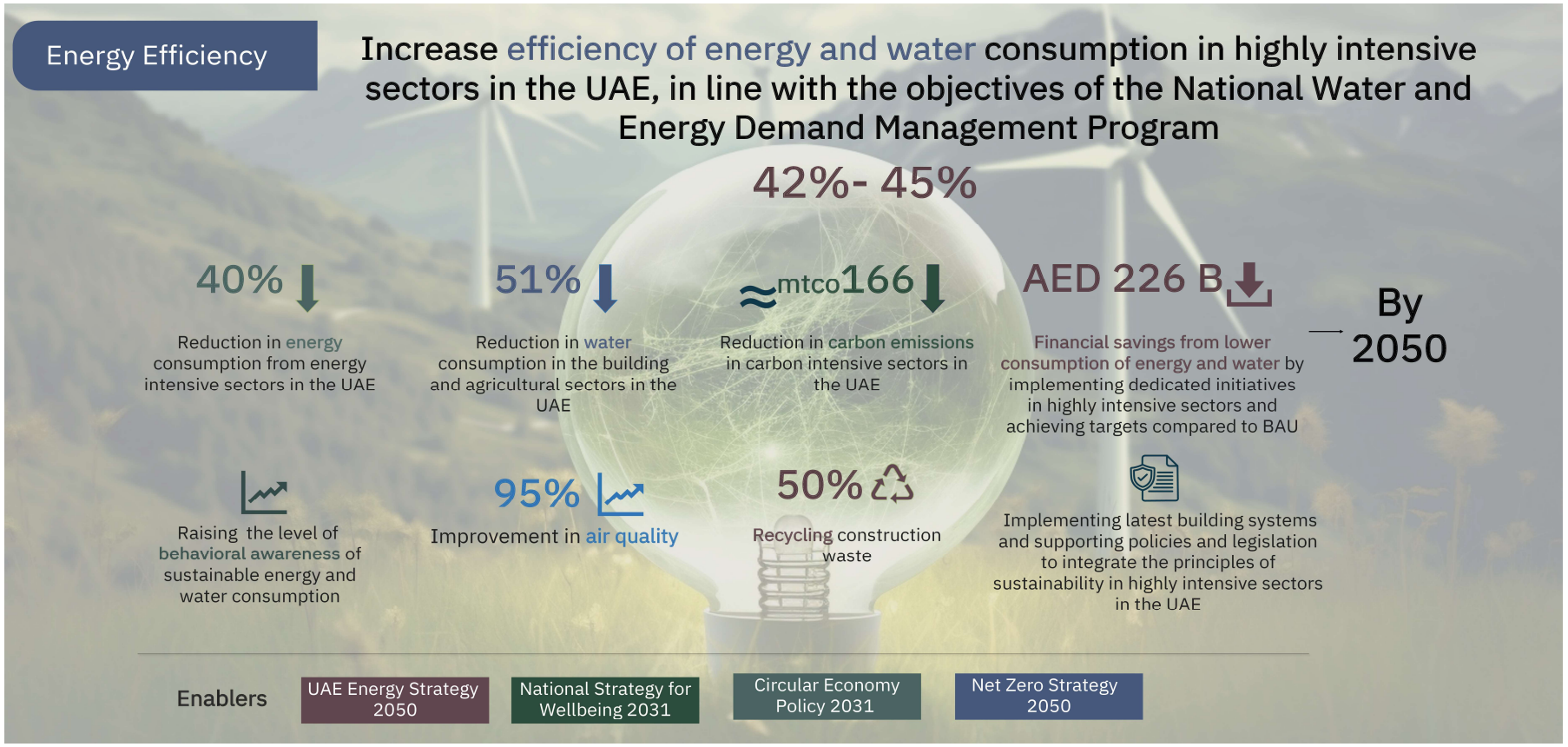


UAE Net- Zero Strategy – Renewables

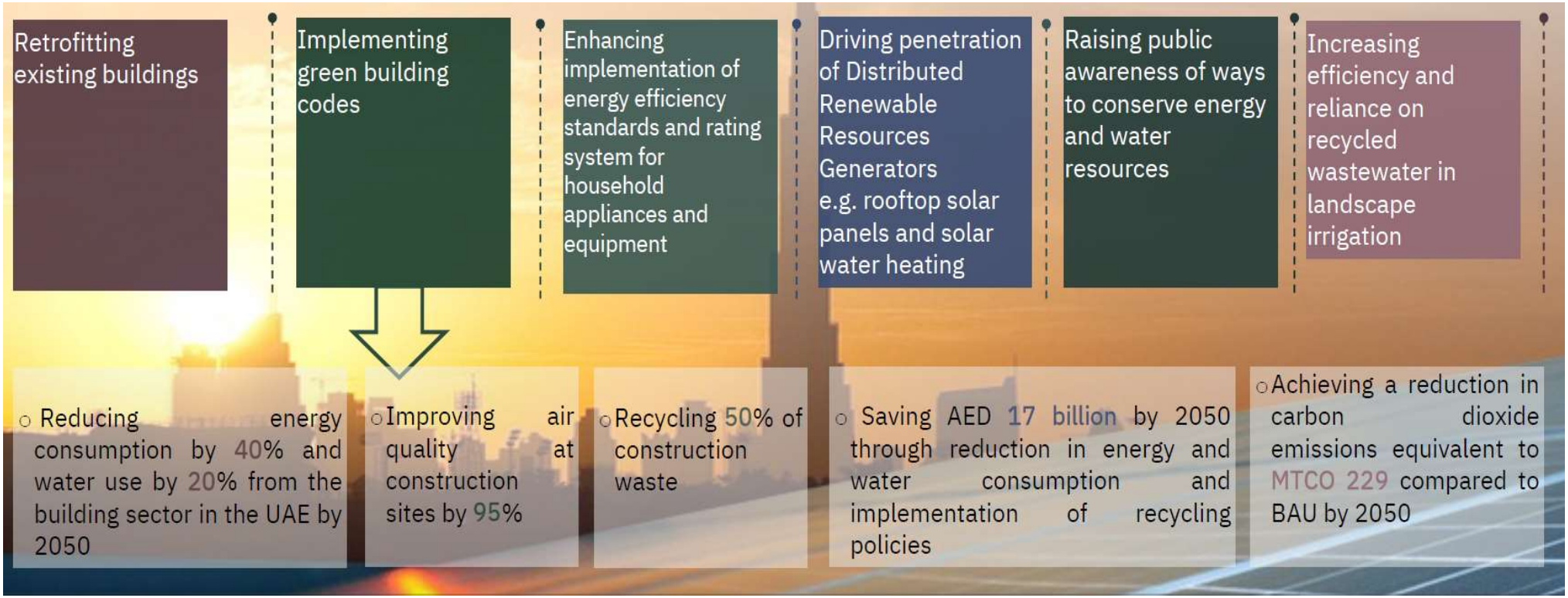


2022	Rank	2023	Country	Score
13	↑	1	Iceland	5.42
10	↑	2	UAE	5.31
25	↑	3	Norway	5.09
18	↑	4	Sweden	4.94
8	↑	5	Kuwait	4.72
20	↑	6	Finland	4.70
16	↑	7	Uruguay	4.48
12	↑	8	KSA	4.46
24	↑	9	Brazil	4.44
8	↓	10	South Korea	4.30

UAE Net- Zero Strategy – Energy Efficiency



UAE Net- Zero Strategy – Buildings



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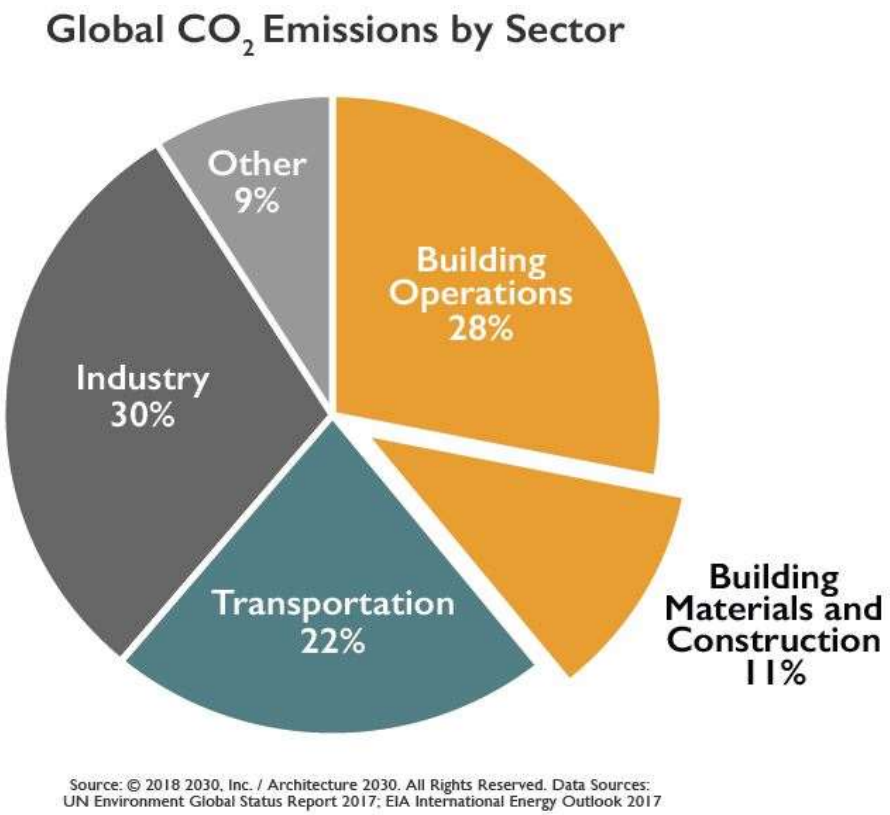
Decarbonization for the Built Environment

Decarbonizing built Environment



How to achieve net- zero in the built environment ?

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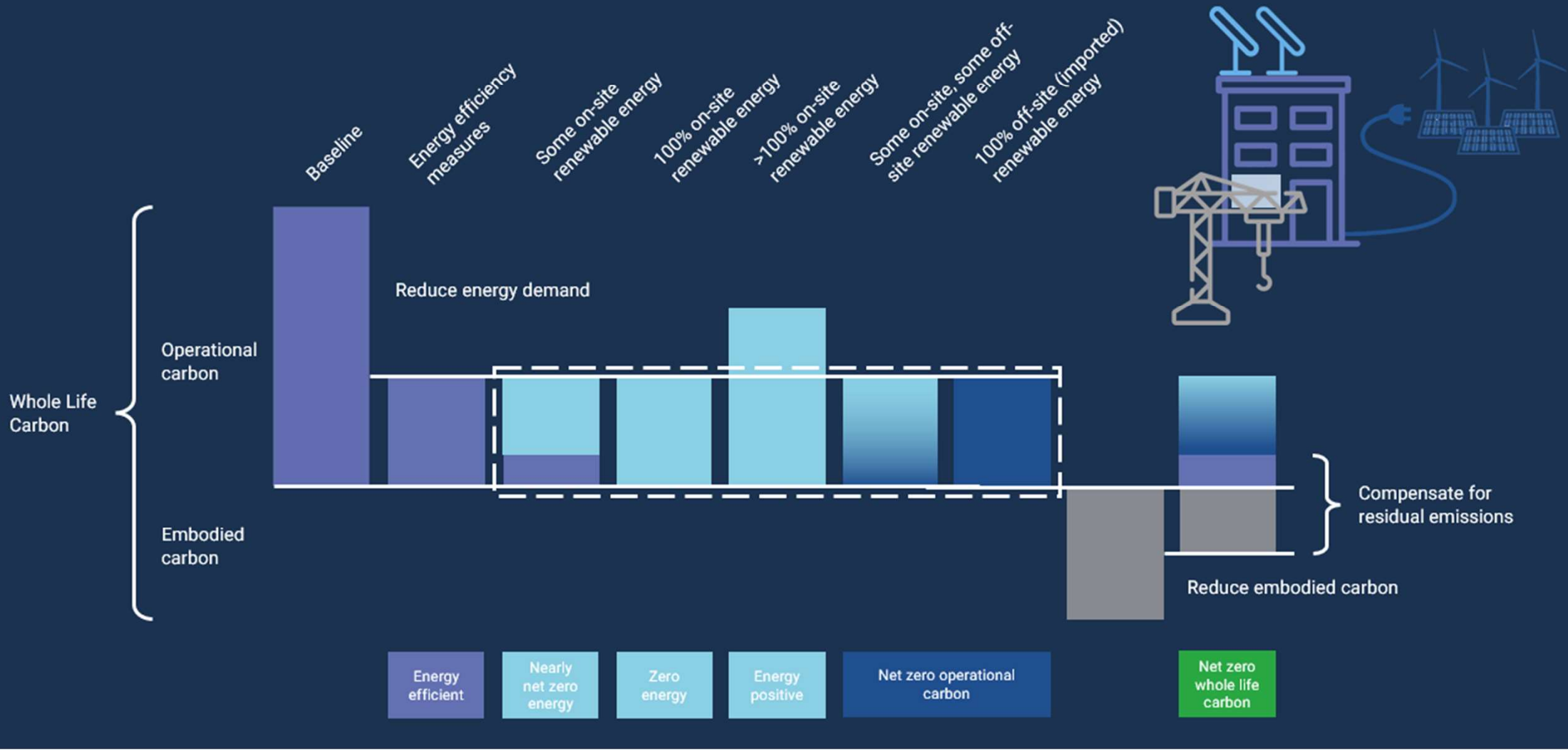
Definitions: Net Zero Carbon Buildings



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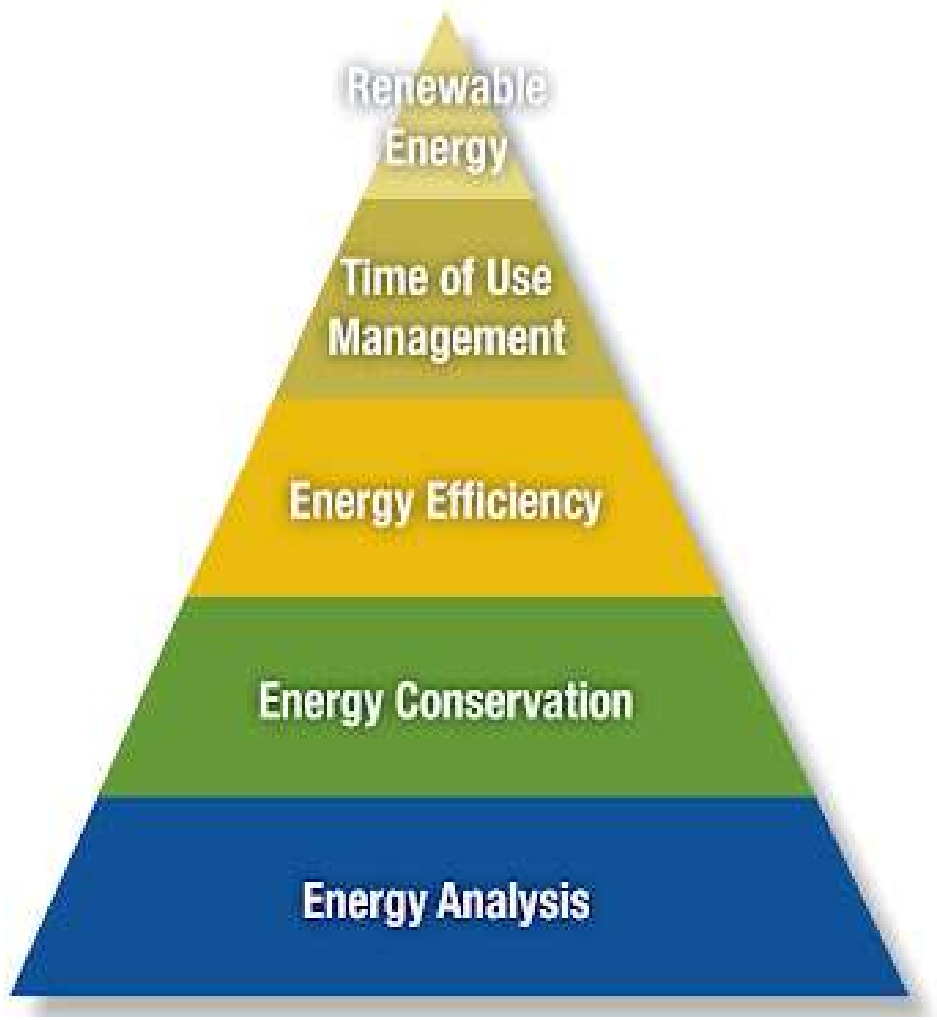
What is the Cleanest Energy

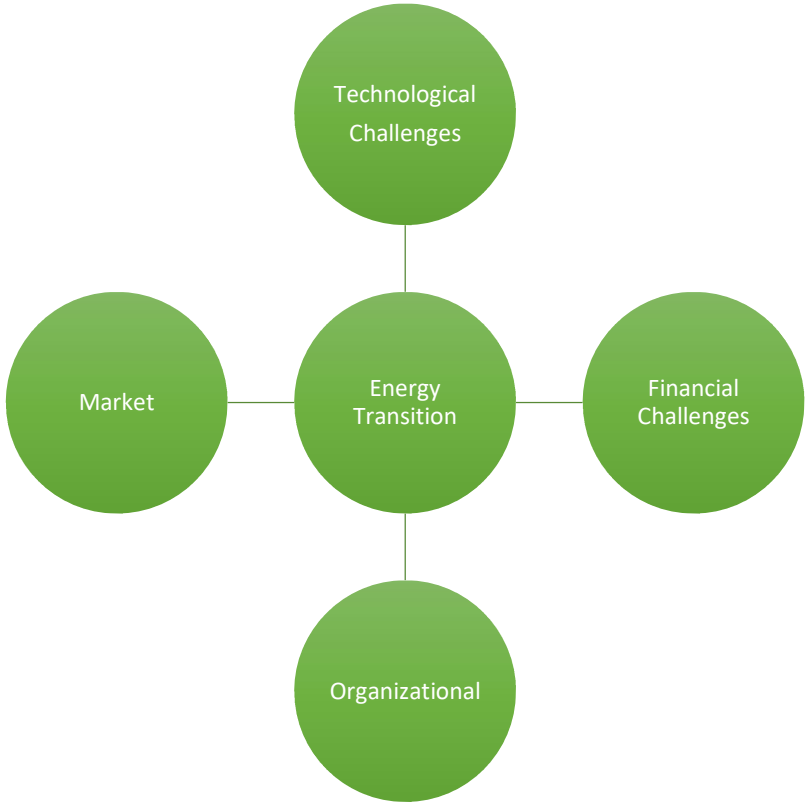
The Energy that you don’t use

Energy Transition Priorities



Energy Transition - Challenges

- Management Commitment
- Expertise (technical /legal/commercial)
- Costs (CAPEX & OPEX)
- Stakeholders
- Market & Policies
- Technology (design , selection , performance)



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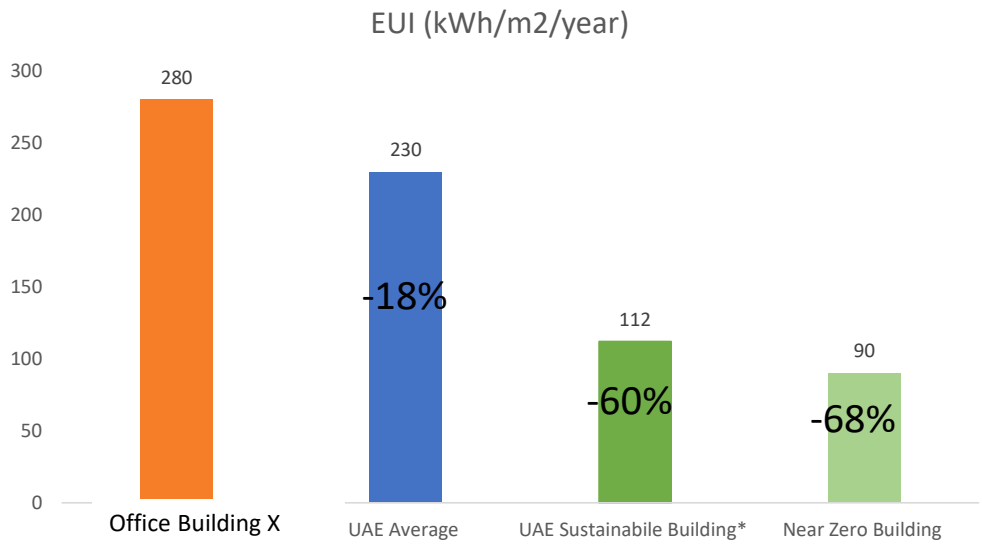
Energy Saving Retrofits for Existing Buildings

Understanding building energy performance

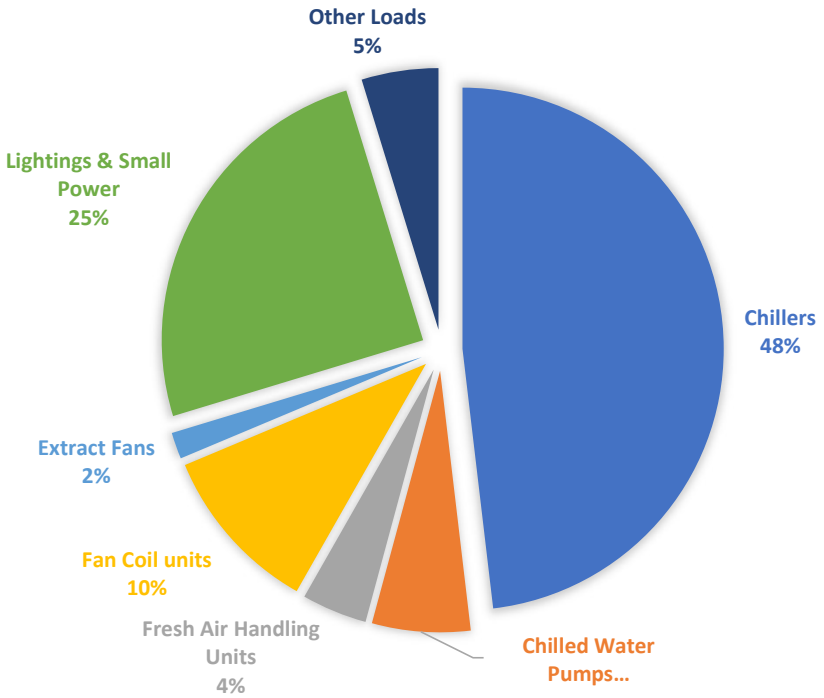
Energy Benchmarking

Energy Use Index (EUI): metric used to measure the energy consumption of a building or facility in relation to its size or function



*DEWA Sustainable Building

Energy Breakdown



Energy Saving Measures for Existing Buildings

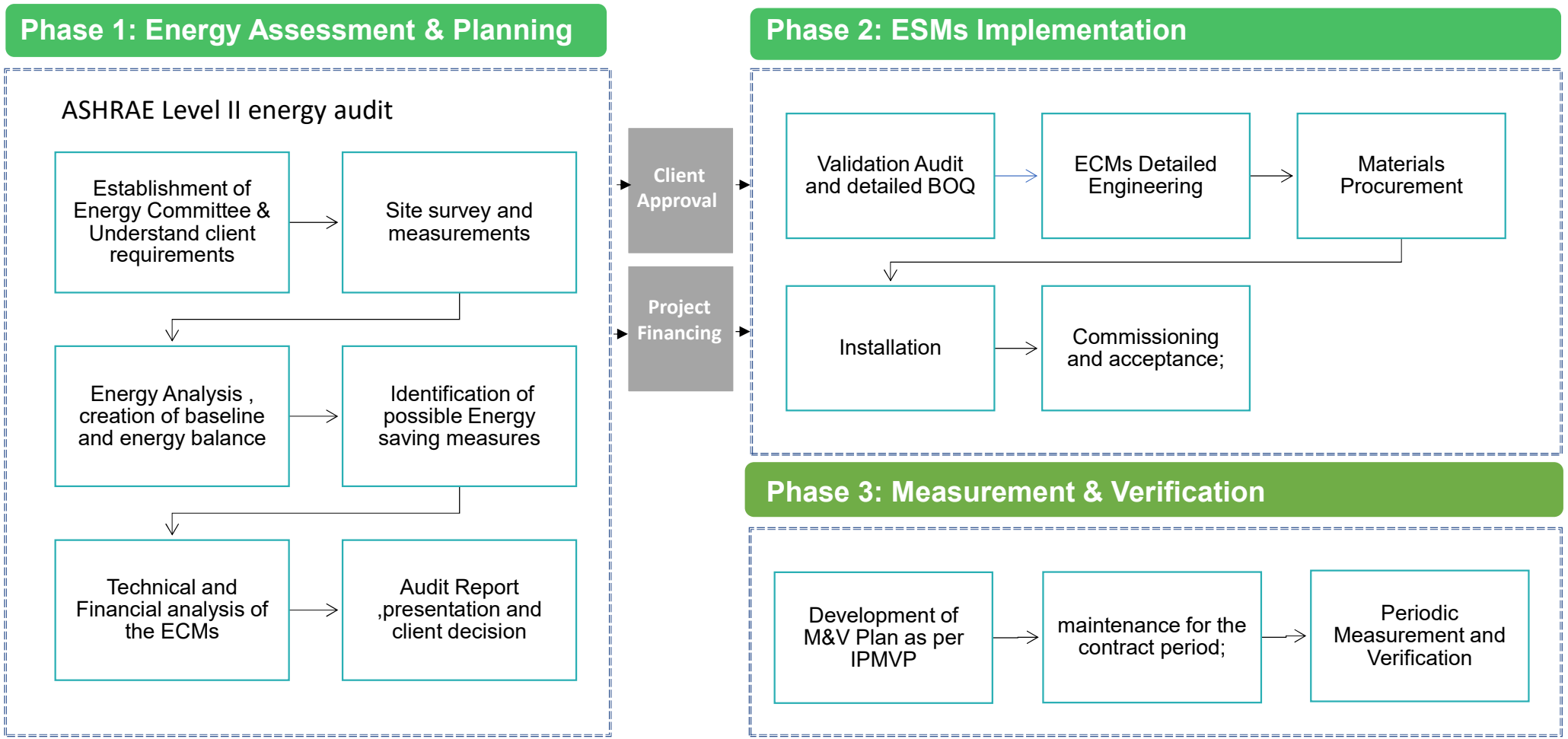
1. LED Lighting Upgrades
2. HVAC System Optimization
3. Building Insulation Enhancements
4. Programmable Thermostat Installation
5. Energy-Efficient Appliance Upgrades
6. Water Heating System Improvements
7. Building Automation System Implementation
8. Window Treatments for Energy Efficiency
9. Occupancy Sensor Installation
10. Energy Management Software Integration

Energy Saving Solutions - ESPC

- **Energy Saving Performance Contracting (ESPC) is low-risk method of financing and delivering energy efficiency improvements for businesses that lack the funds, technical experience and manpower needed for such projects.**

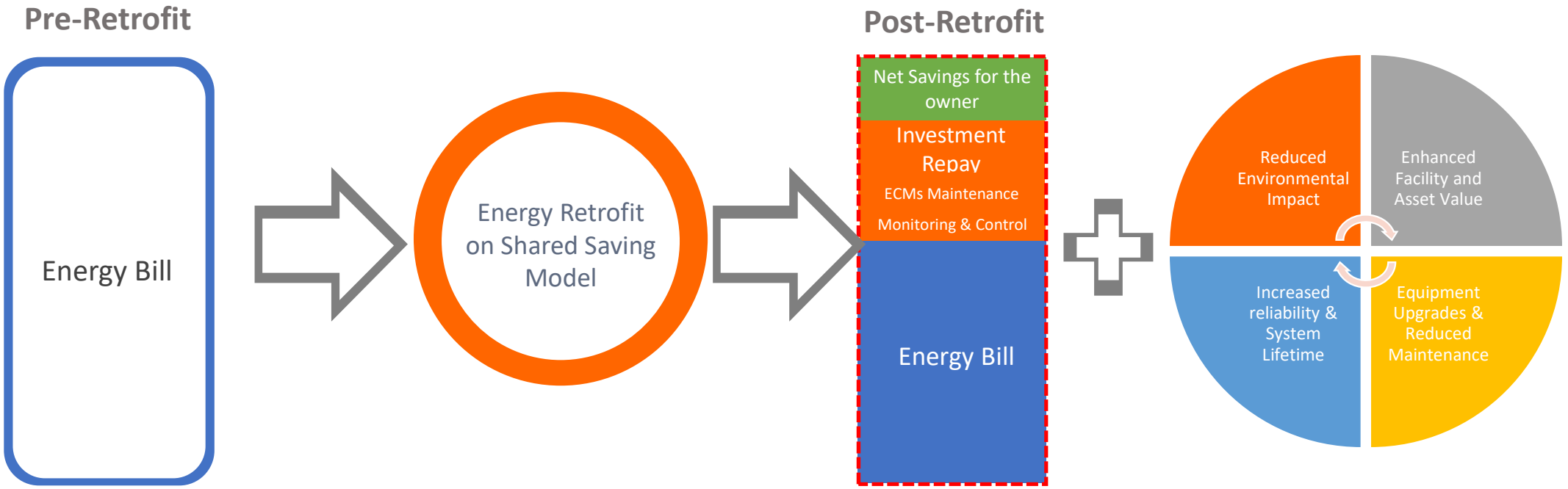
- **ENERGY SERVICE COMPANY (ESCO) DELIVER TURNKEY ENERGY PROJECTS WITH SAVINGS GUARANTEES**

Proposed Energy Savings Solutions- Activities



ESPC Model– shared saving model

No Capital Investment , Risk Free Savings For Owners



INVESTMENT from the ESCO

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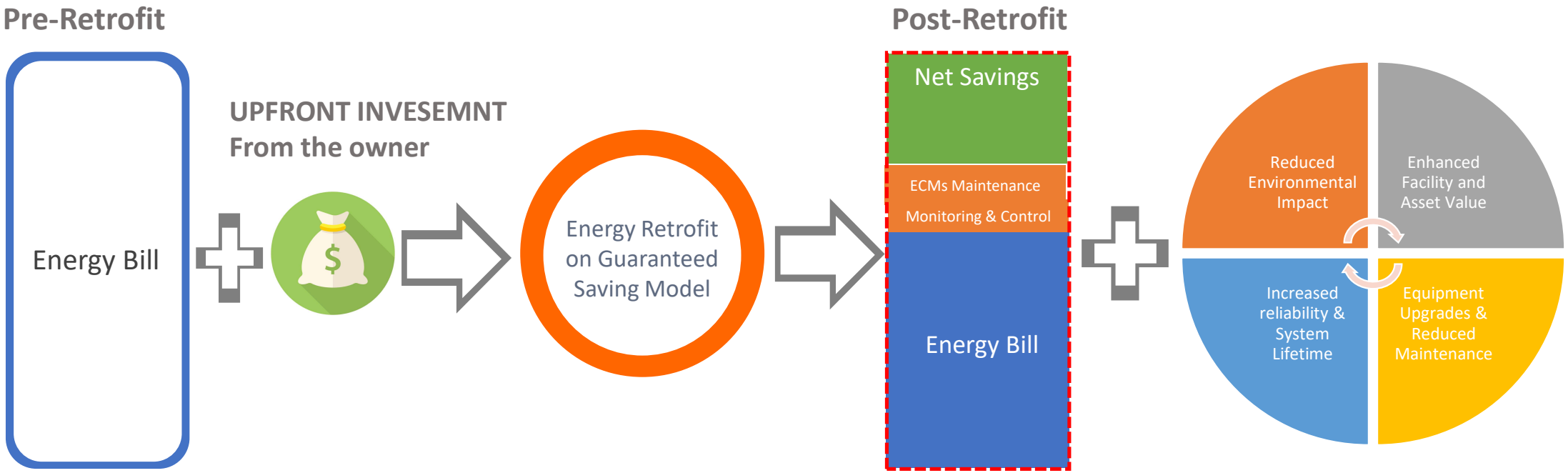
ESPC Model– Guaranteed Saving Model

Guaranteed Savings & Risk Sharing With Owners



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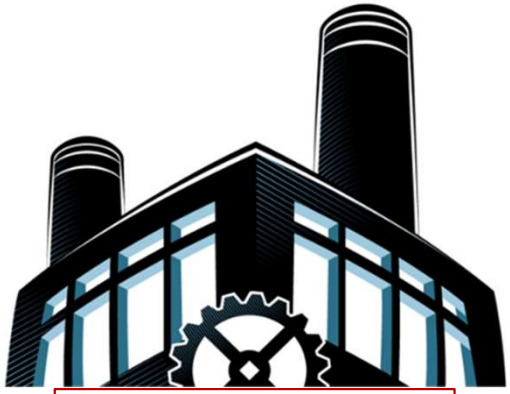
Continuous Energy Management

What is Missing in Project-Based Approach to Energy Efficiency?

Project-Based Focus on Technological Change

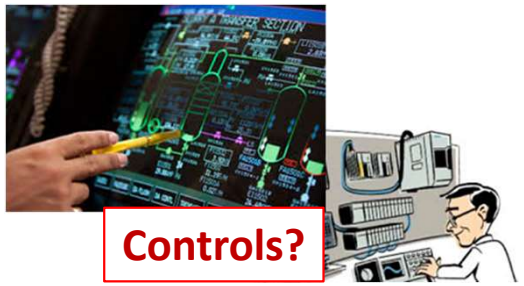
But what about…



Holistic strategies?

Raw Materials and Energy Sources?

People?



Controls?

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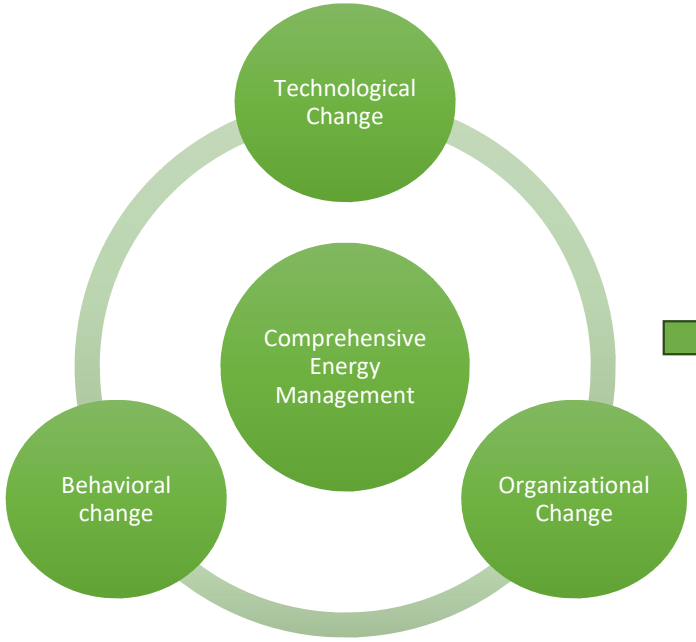
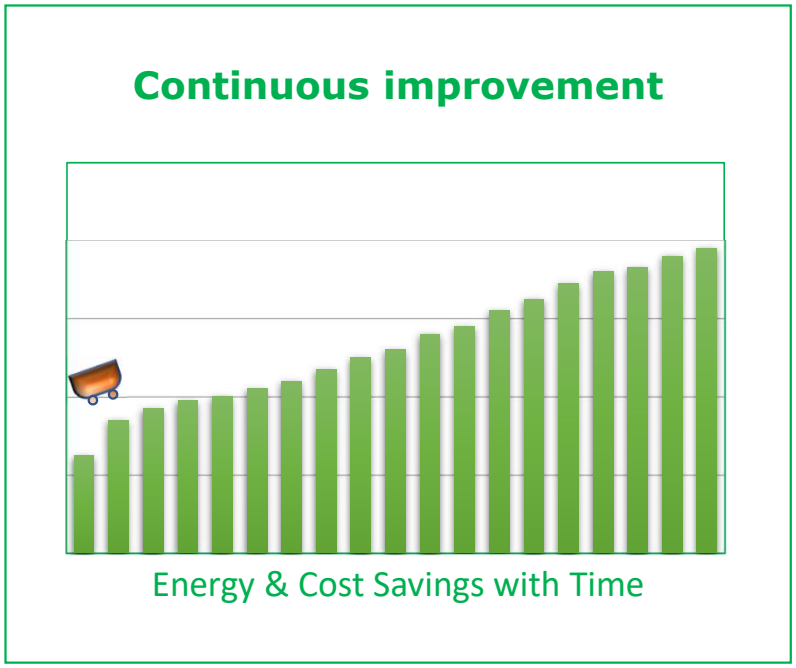
A more Comprehensive approach to Energy Efficiency is needed

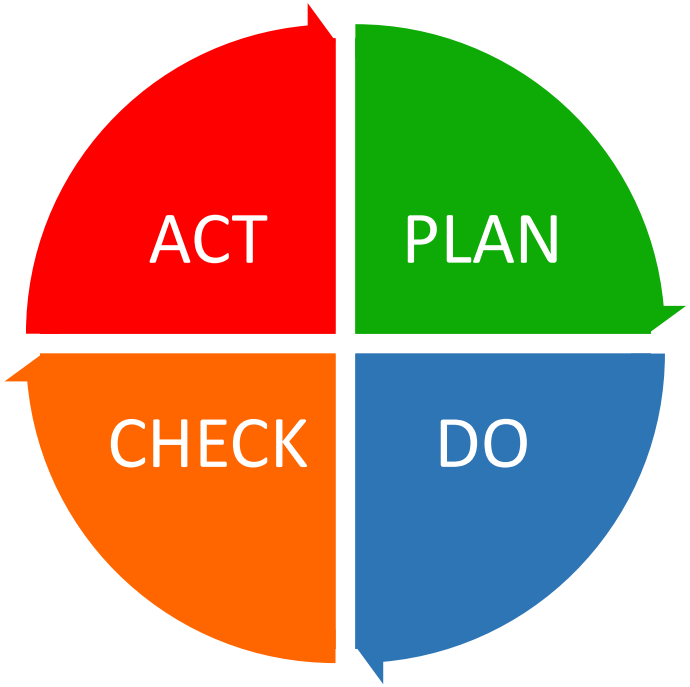
Organizations that target behavioral and organizational barriers, as well as technological, can achieve continual improvement in energy performance.

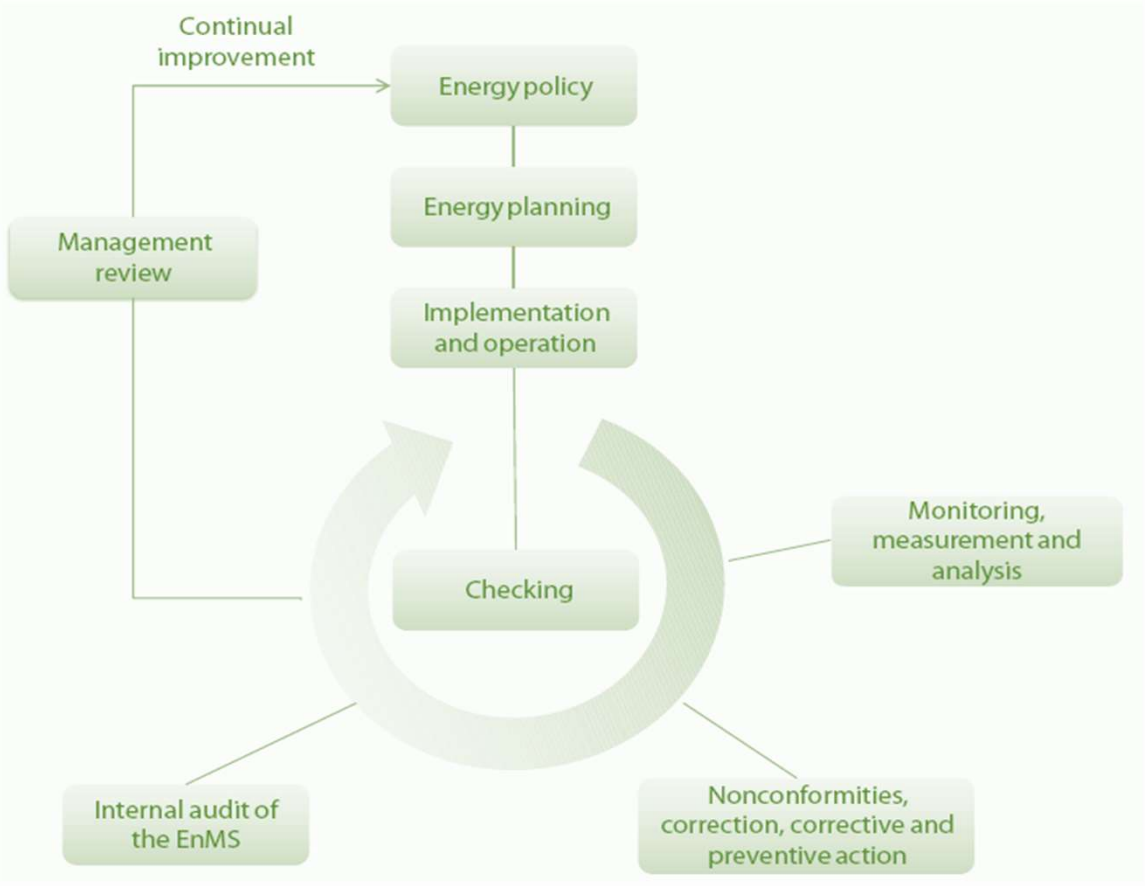


Staff at every level of organization needs to be engaged and involved to achieve energy goals!



ISO 50001:2018 Energy Management Processes

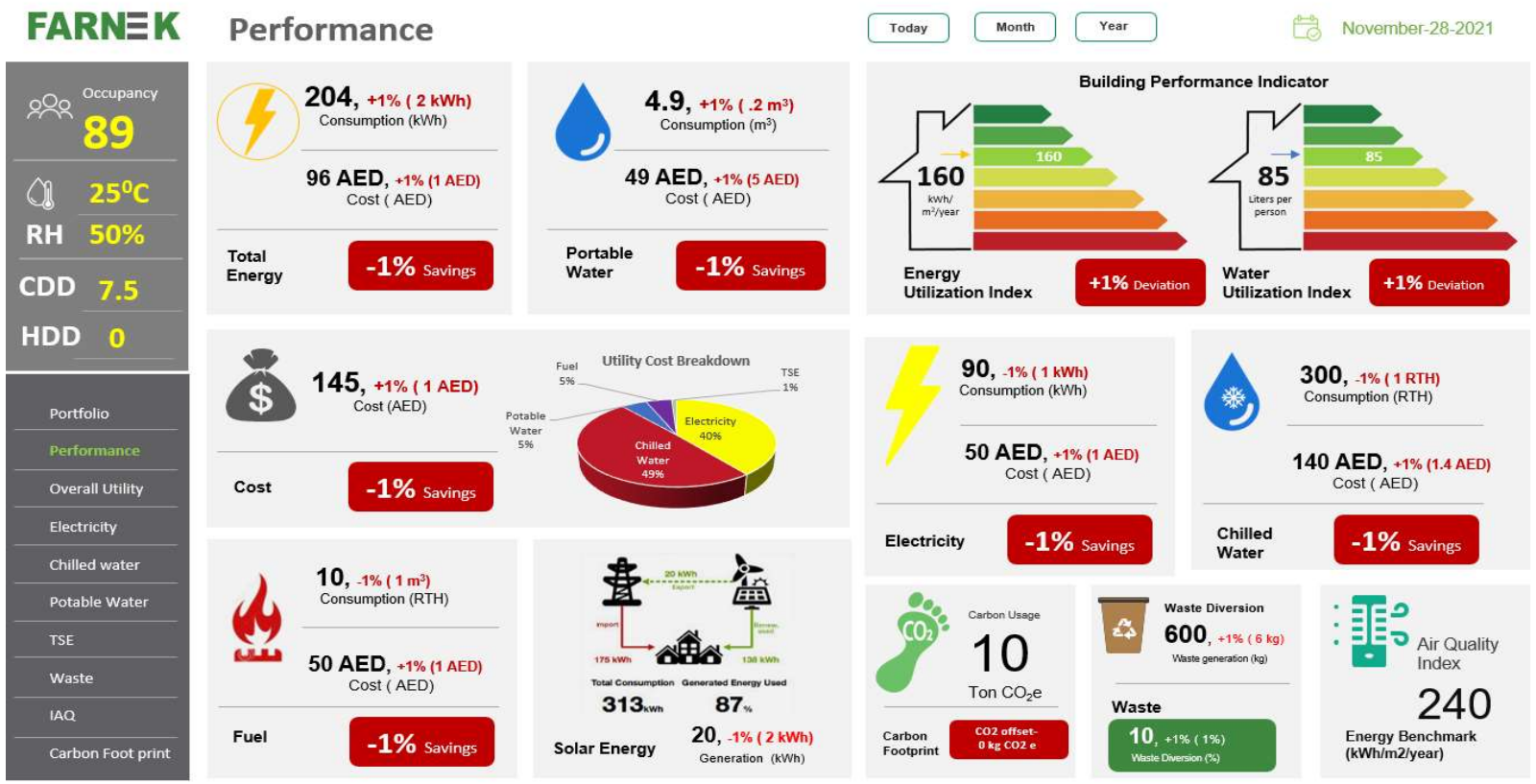




Source: ISO 50001:2011

Continuous Monitoring and Energy Optimization

A holistic approach, connecting support to operational units & providing daily, monthly & yearly monitoring of KPIs like energy performance, waste performance and CO2 footprint



POWERTEK

- Enhanced Energy Optimization
- Real time Data streaming & Analytics
- Utility Bifurcation/ Load Profile Visualization
- Asset Level Efficiency Tracking
- Building Energy Use Index Monitoring
- Energy/Water/Waste Benchmarking
- Integration with BMS & IoT Sensors
- Waste Performance
- Carbon Emissions

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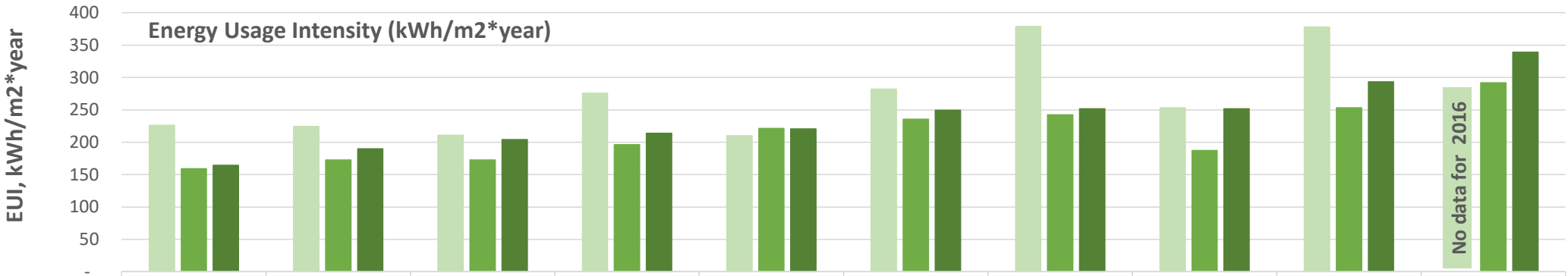
Portfolio Management

Continuous performance management to drive and improve efficiencies

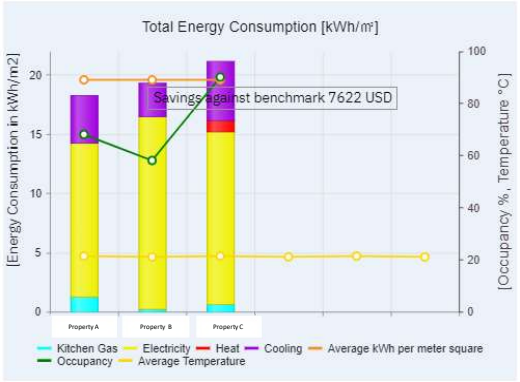


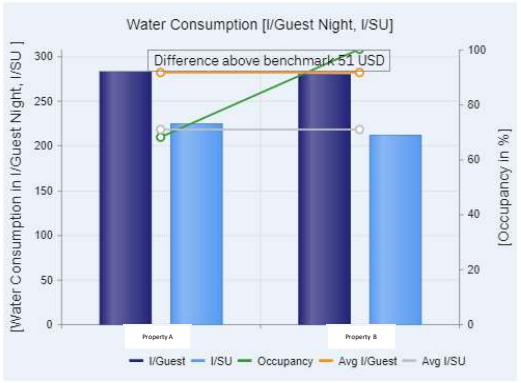
	Property A	Property B	Property C	Property D	Property E	Property F	Property G	Property H	Property I	Property J
EUI 2016	226	224	211	276	210	282	379	253	378	-
EUI 2021	159	173	173	196	221	236	242	187	253	292
EUI 2022	165	190	204	214	221	250	252	252	293	339

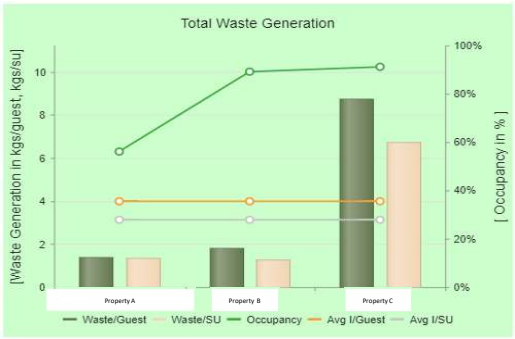
Benchmarking

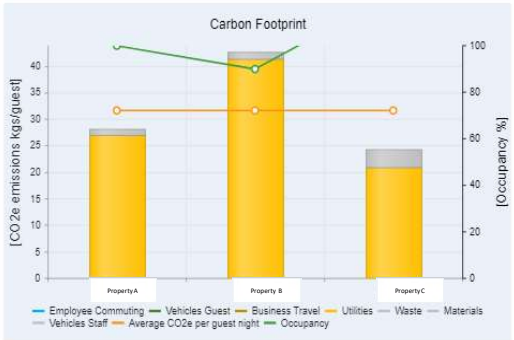
Comparing with similar properties & hotel's own historic performance

PEER BENCHMARKING

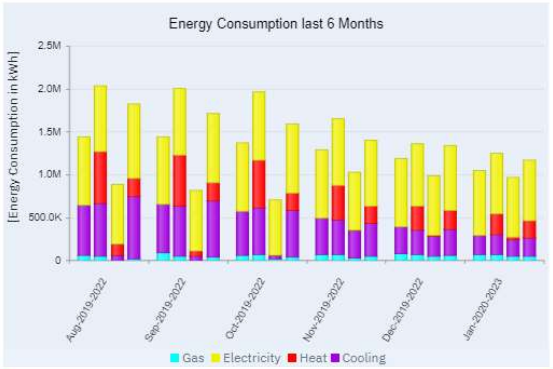


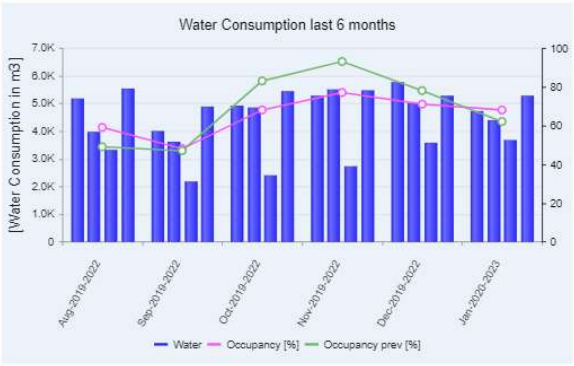


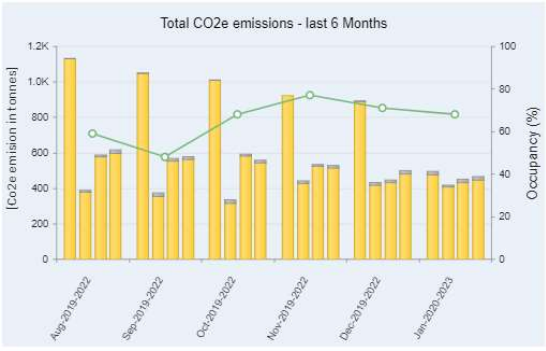




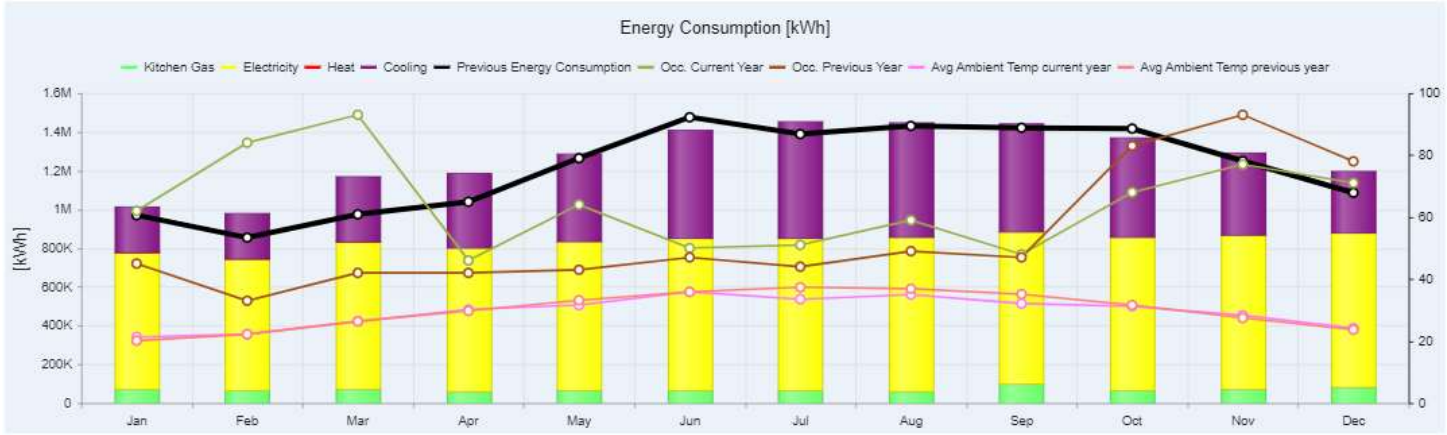
INTERNAL BENCHMARKING

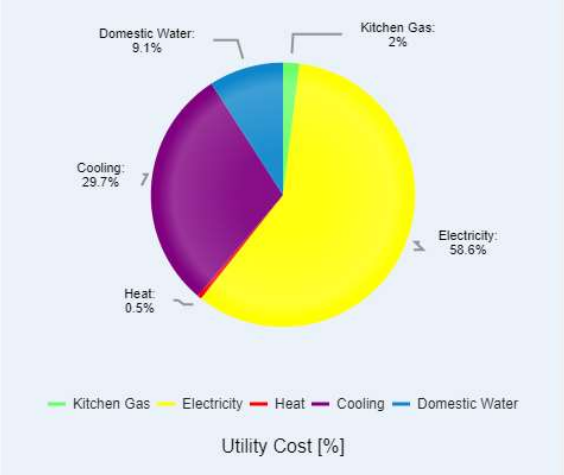


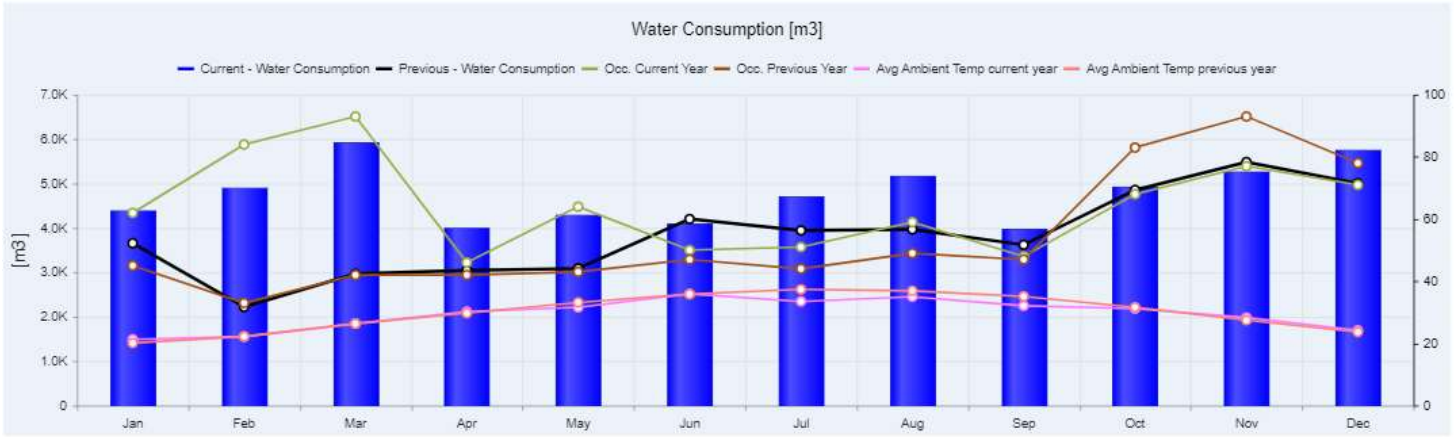


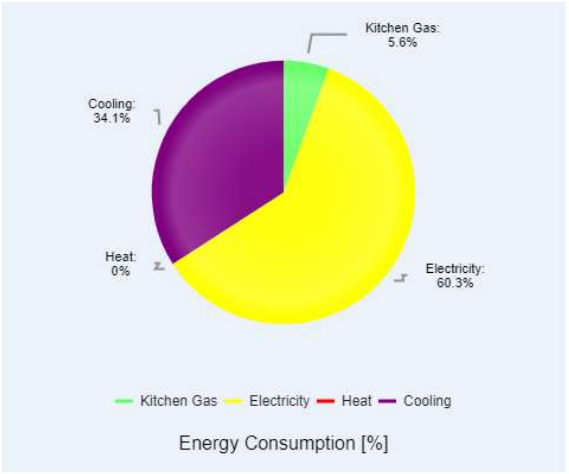


Trend & Cost Analysis : Energy & Water









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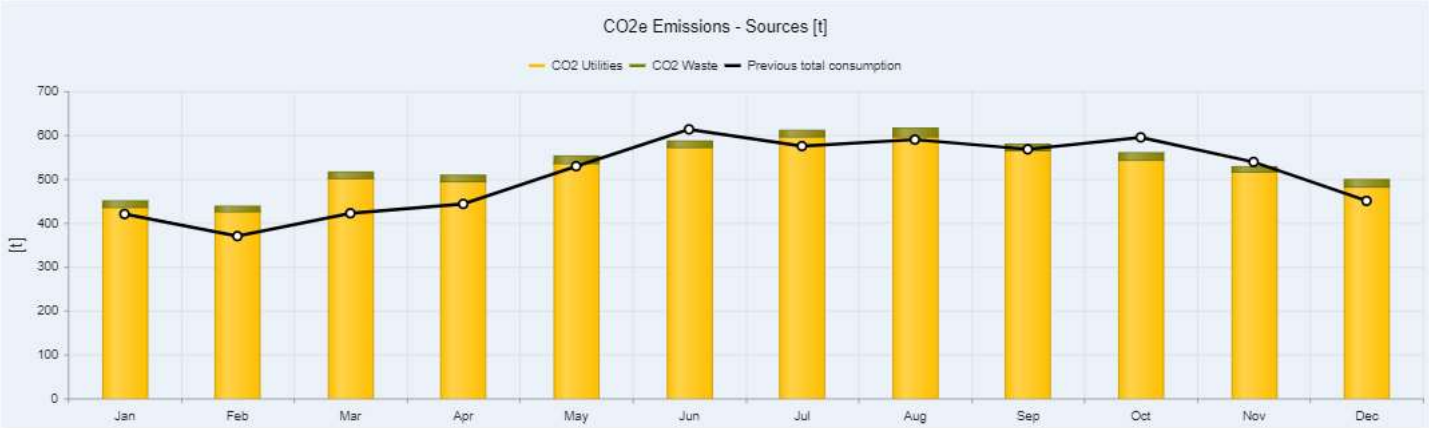
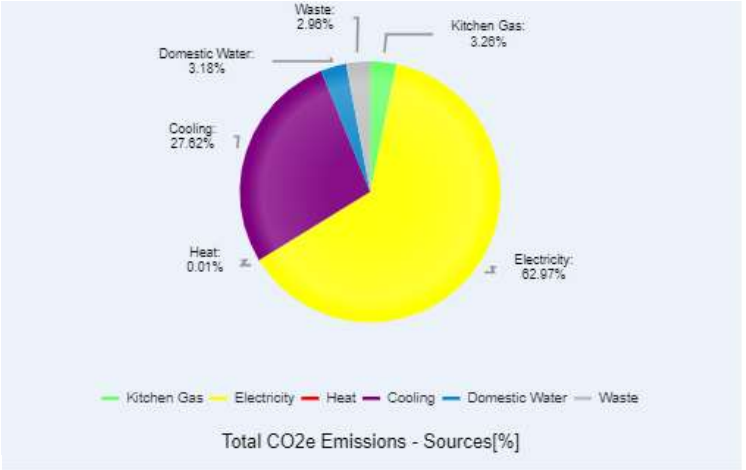
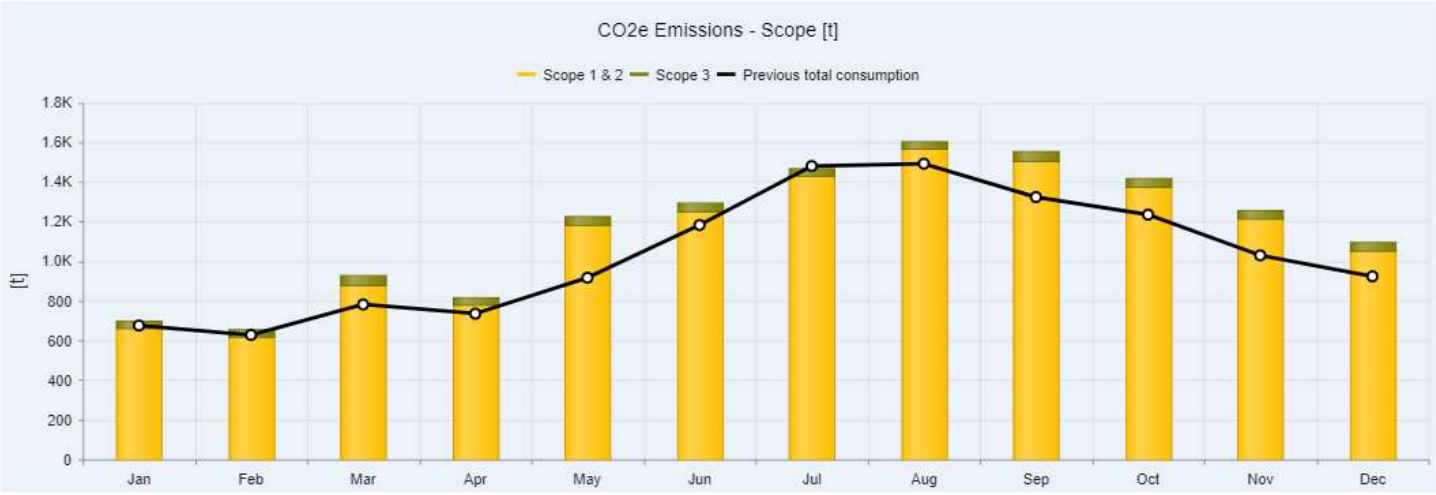
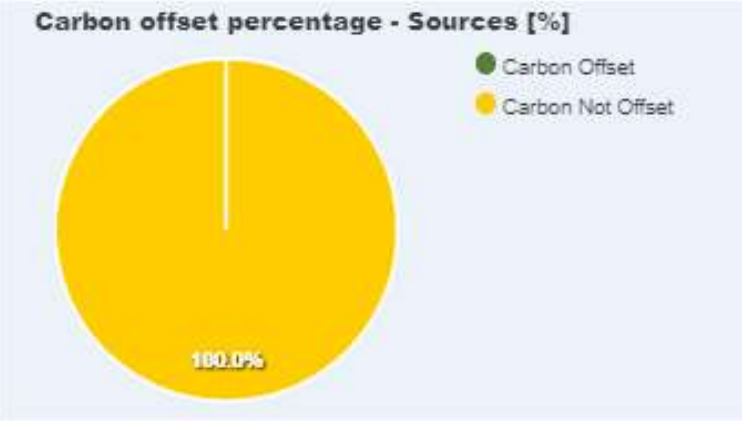
Carbon Footprint (Scope 1 , 2 & 3)









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Case Studies

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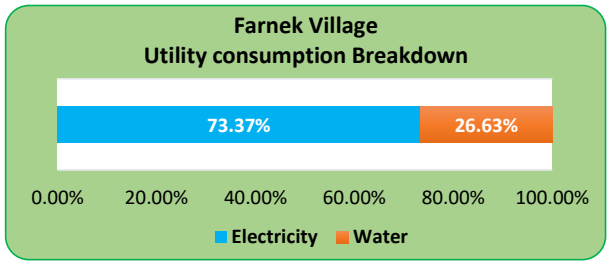
Continuous Optimization for Farnek Village



ECMs IMPLEMENTED IN THE YEAR-2023

- ❑ Permanently Switched OFF 4-Feet LED Light Fixtures in 1st to 4th Floor Corridors & Dinning Hall in Basement
- ❑ Free Cooling through FAHUs (Operated FAHUs 1,2,3,4&7 with Condensing Units in OFF Mode from 6:00PM to 6:00AM for the month of Jan, Feb, Mar, Nov & Dec)

2023 ENERGY SAVINGS BREAKDOWN	
Total Savings in kWh	459,594
Total Savings in AED	197,626
Carbon Emissions Avoided (kgCO2eq)	193,000

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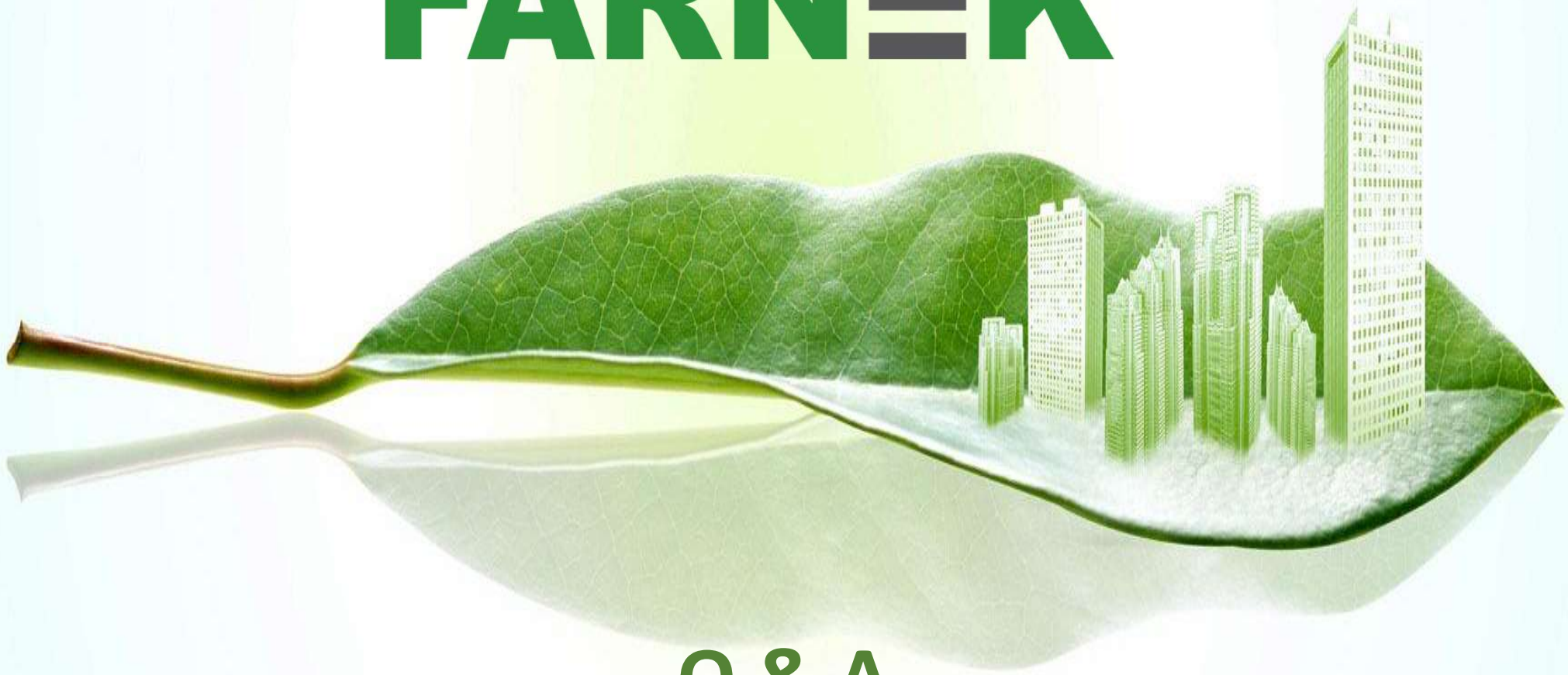

Q & A