

The logo for Etihad Energy Services, featuring the word 'الاتحاد' in Arabic and 'Etihad' in English, with a red and black color scheme.

الاتحاد
Etihad

لخدمات الطاقة
Energy Services

A night-time photograph of the Dubai skyline, featuring the Burj Khalifa and other illuminated skyscrapers against a dark sky with a full moon. The image has a red tint.

Etihad Energy Services Company

October 2017

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TABLE OF CONTENT

1 Introduction to DSM Strategy and Etihad ES

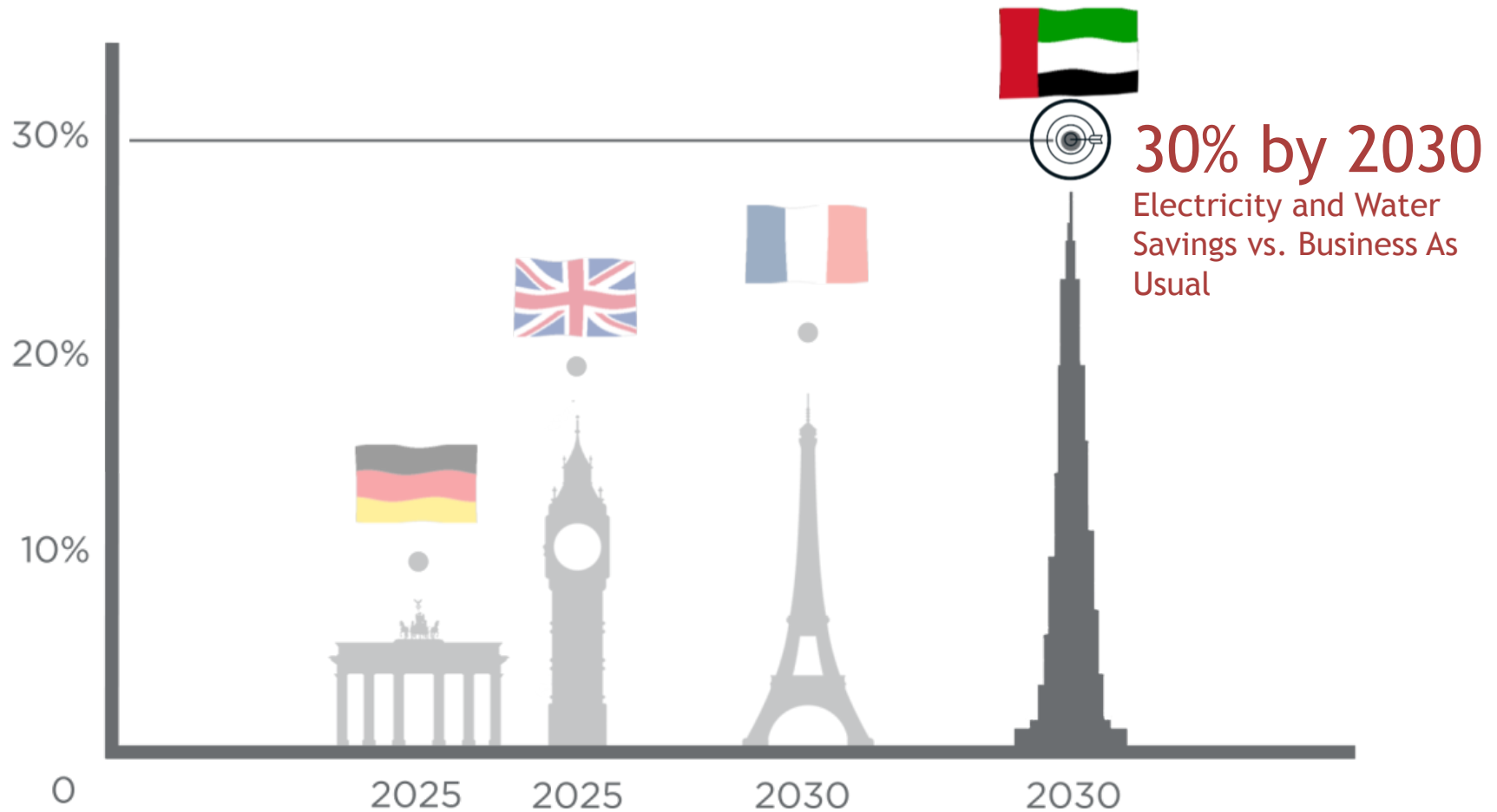
2 Etihad Retrofit and Solar

3 TAQATI

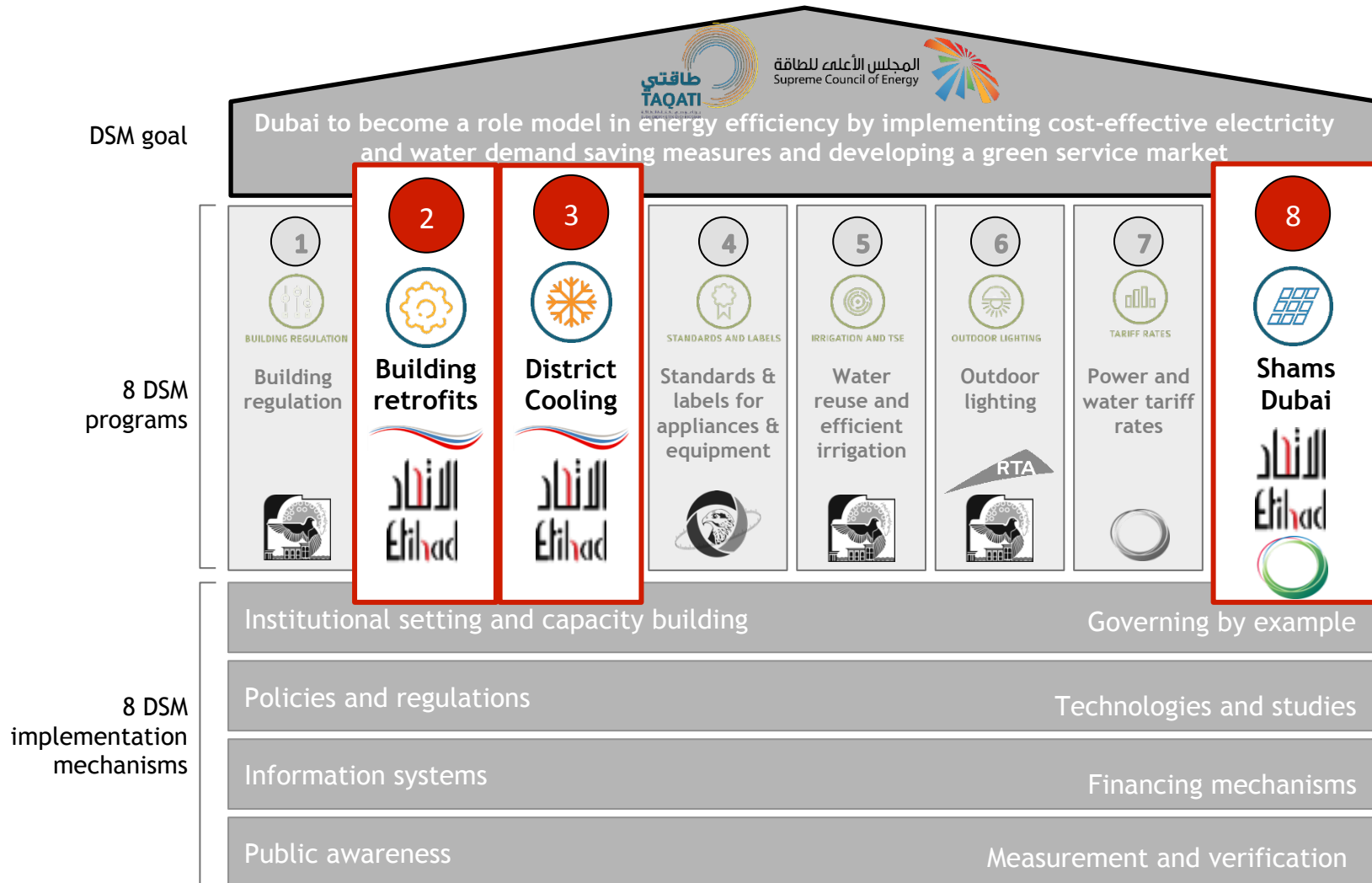
4 Etihad ES Projects and Accomplishments

Introduction to DSM Strategy and Etihad ES

Dubai's Ambitious DSM Strategy Targets



Etihad ES is a key driver and Program Manager of Dubai Demand Side Management Strategy



Our Integrated Service Lines

Etihad Energy Services Co.

Retrofits



Solar



District
Cooling



DSM
(TAQATI)



M&V



Our Global Footprint


Countries Etihad ES is recognized in

 Germany

 France

 Italy


 USA

 Australia



Countries in JV talks

 Netherlands

 KSA

Head Office

 UAE

Building Retrofit Program Performance (Reported EOY 2016)

Total financial savings*

AED 52 million

TOTAL SAVINGS

CO₂ abated: **407K tons**

Electricity saved (GWh): **88**

Water saved (MIG): **246**

FACILITY SAVINGS

Average % savings achieved

Building 25% to 35%

Lighting 45% to 72%

Total area retrofitted
2 Mil. sqm

No. of facilities retrofitted:
~2000

Average ROI
48 to 72 months

TYPES OF BUILDINGS

Types of buildings retrofitted

19 Governmental

1,870 Residential

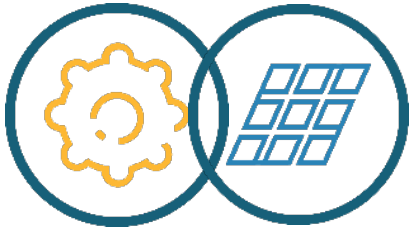
44 Commercial

10 Industrial

7 Hotel

3 Educational

18 Other



Etihad Retrofit and Solar

Etihad Retrofit - Vision, Mission and Goals

Established in 2013



Vision

To make Dubai one of the most sustainable cities in the world



Mission

To make Dubai's built environment a leading example of energy efficiency for the region and the world

Goals

- ✓ Contribute to achieve energy demand **reduction targets** set by the Dubai Supreme Council of Energy
- ✓ Create an **energy performance contracting (ESCO)** market in Dubai
- ✓ **Support** local and international **ESCOs** to grow and thrive

Retrofit: Key Targets



1.7 TWh

of Electricity to be saved by 2030



5.6 Billion IG

of Water to be saved by 2030



1 Million Tons

of CO₂ to be abated by 2030



30,000 Bldgs

Potential for energy reduction out of 120,000

Retrofit: Target Areas



Cooling Retrofits



Lighting Retrofits



Water Fixture Retrofits



Industrial Process
Retrofits



Building Envelope and
Other Retrofits



20 - 70 %

Potential Savings on
your electricity and
water bill

*(depending on
several factors)*

Retrofit: Process Towards Energy Savings

DEVELOPMENT PHASE

MOU
Signature

Data
Collection

Preliminary
Analysis

Project
Planning

Agreement
Signature

RETROFITTING PHASE

Retrofit
Tendering

Contract
Negotiation

Financing
Arrangement

Contract
Signature

Project
Execution

GUARANTEED SAVING PHASE

Preventive
Maintenance

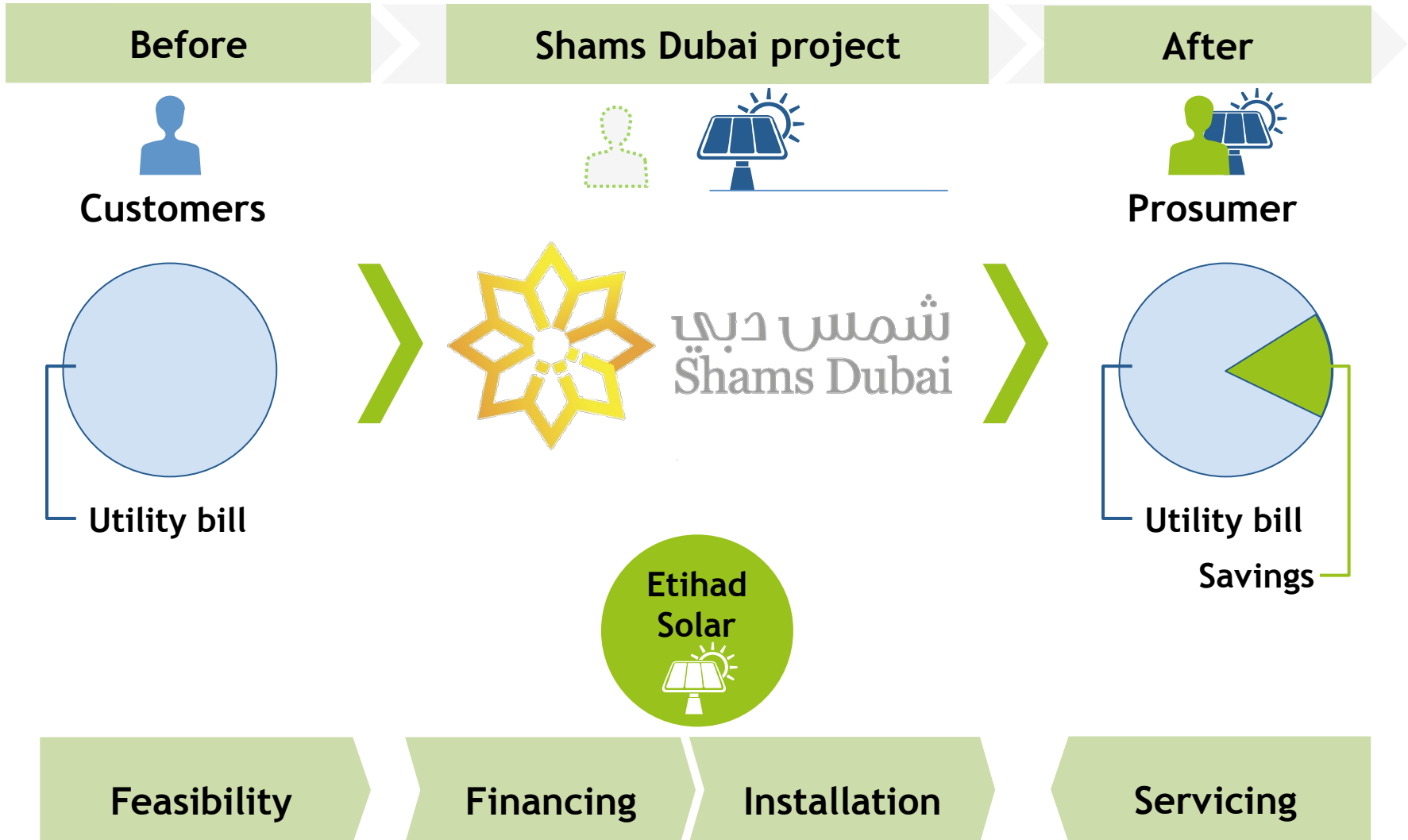
Corrective
Maintenance

M&V Activity

M&V Reporting

Saving
Realization

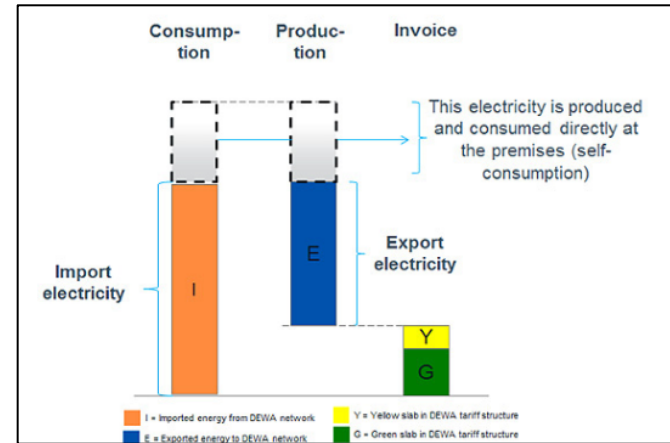
ETIHAD Solar Fosters Distributed Solar Market Development



Shams Dubai Regulatory Structure

1. Net Metering Scheme

Billing mechanism that credits PV system owners for the electricity they feed to the grid. The price of surplus electricity exported to the grid is equal to the current retail tariff (no Feed-in-Tariff)



Net Metering Scheme

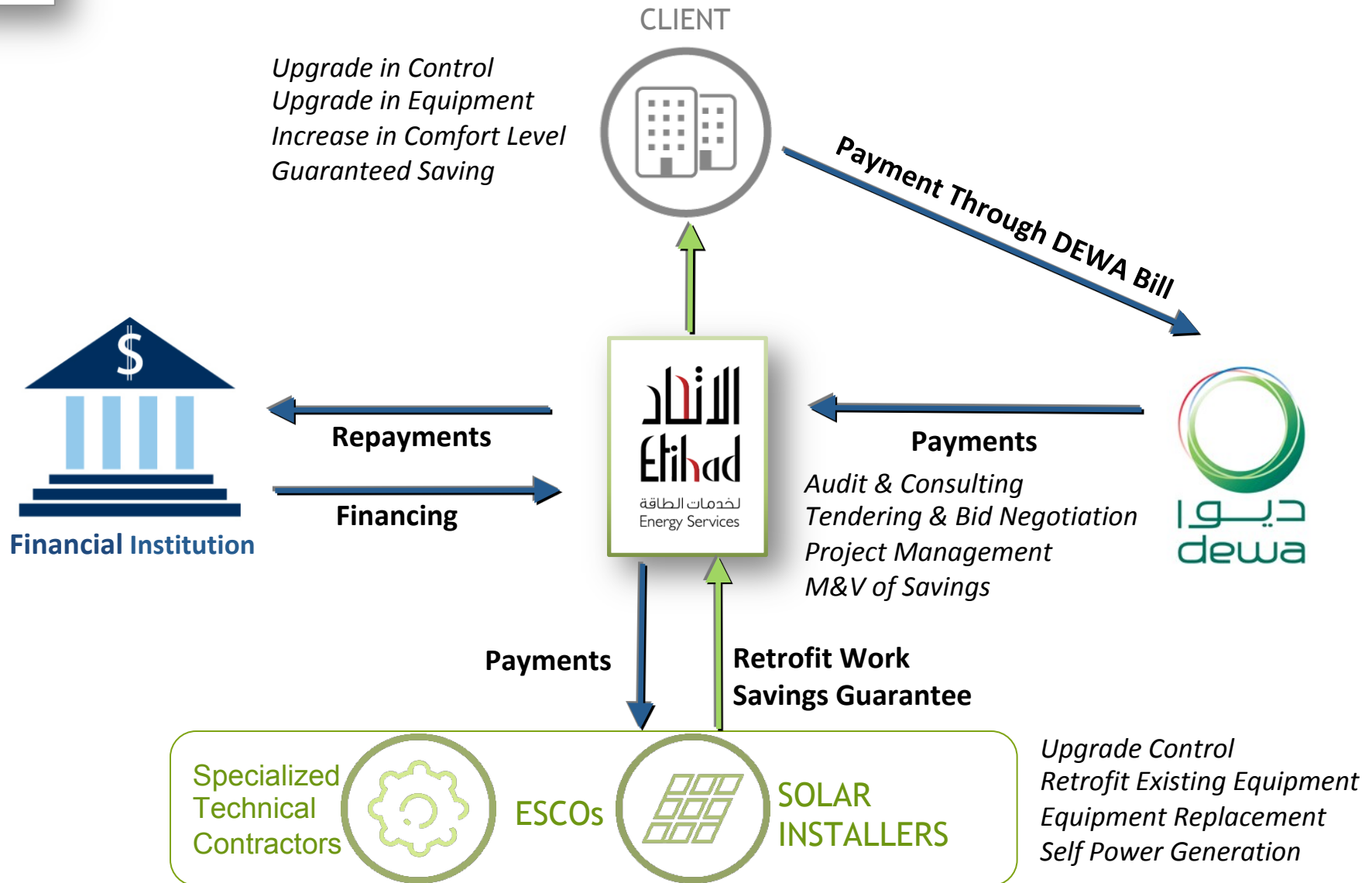
2. Connection Conditions

- Capacity installed cannot exceed the maximum load allowed within the customer's plot
- Electricity produced under one customer DEWA Consumption account can only be used by the same customer within the same plot

3. Standards

- Technical specifications for PV systems and their connection
- Requirements for enrollment as a Solar Consultant / Contractor

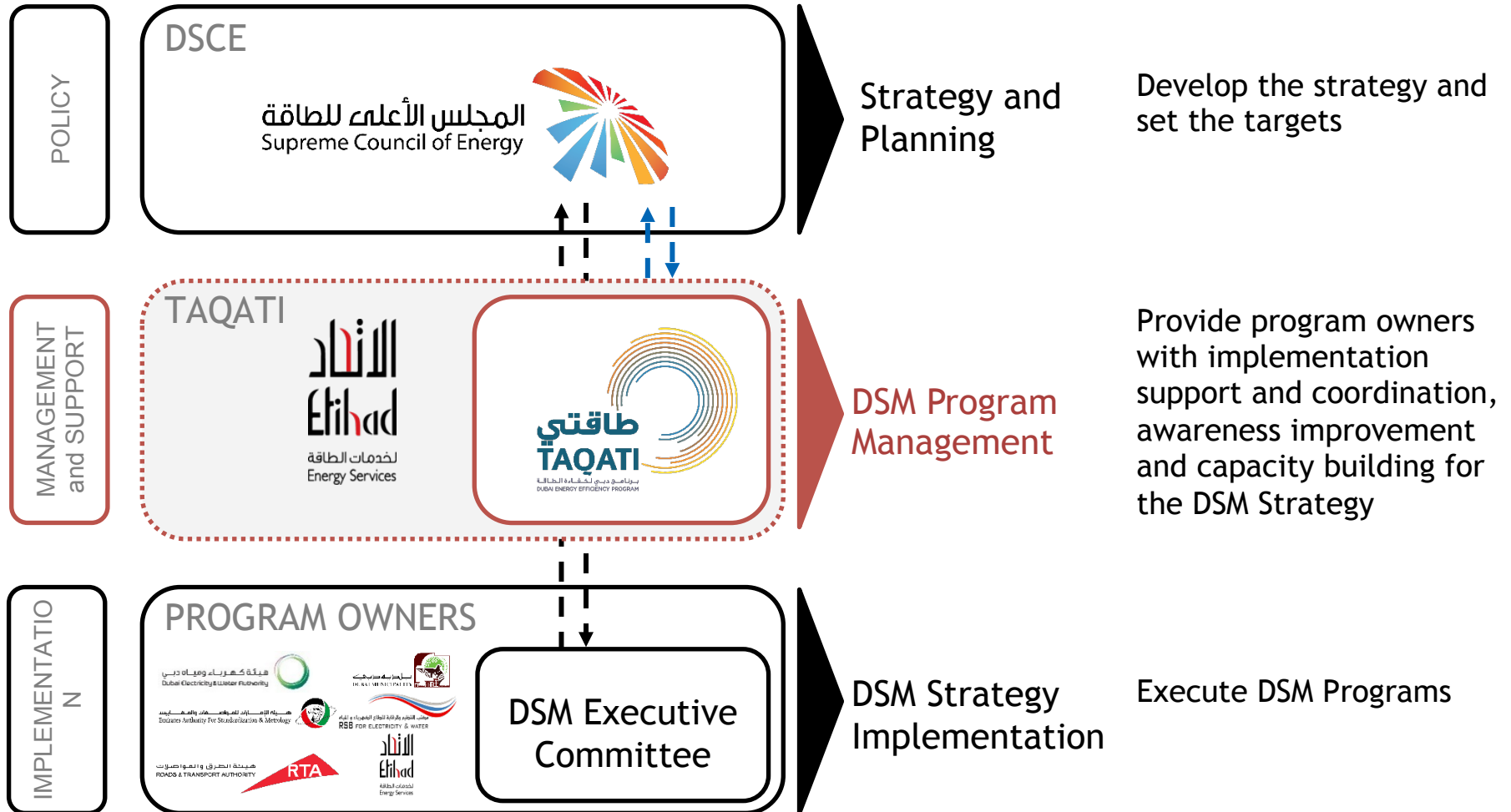
ETIHAD ESCO - Business Model





TAQATI

TAQATI, DSM Program Manager



The vision and mission of TAQATI are bold and reflect the ambitious goals of the DSM Strategy

TAQATI VISION

Be the driving mentor of energy and water efficiency strategies to make Dubai one of the most sustainable cities in the world

TAQATI MISSION

Identify and lead the implementation of result-driven energy and water efficiency strategies, to achieve Dubai's sustainability goals

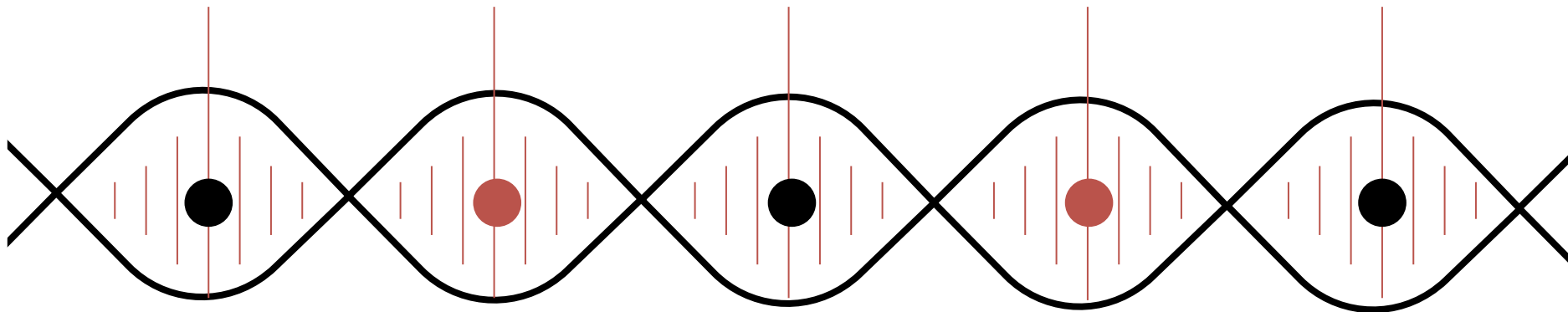
EFFECTIVE PROGRAM
MANAGEMENT

RISK
MANAGEMENT

DIVERSITY AND
CULTURAL FIT

COMMUNICATION AND
COLLABORATION

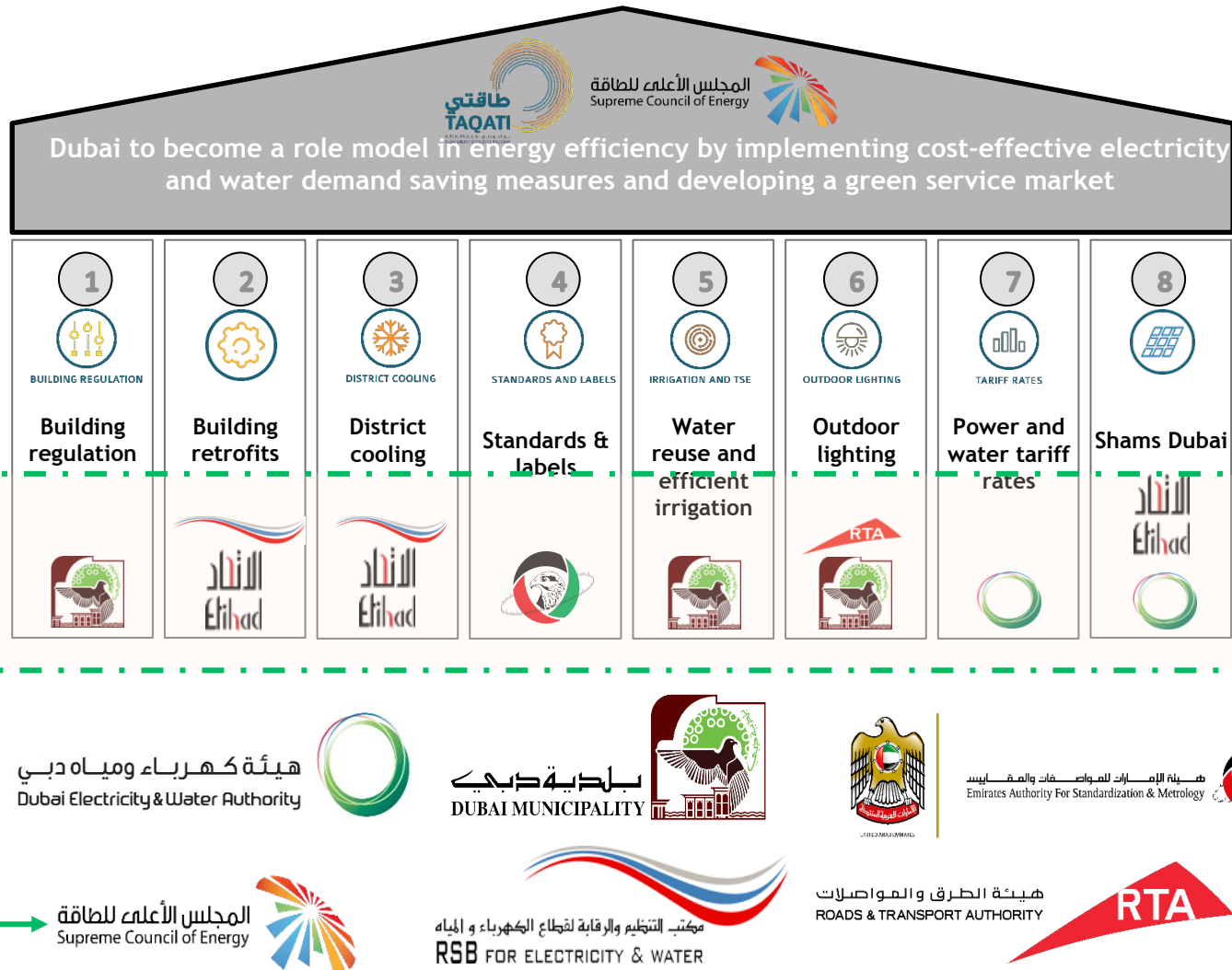
VISIBILITY AND
TRANSPERENCY



TAQATI Key Functions



TAQATI Key Stakeholders - DSM Program Owners



Etihad ES Projects and Accomplishments

Retrofit and Solar: Our Engagements

Project Development/ Implementation

هيئة كهرباء ومياه دبي
Dubai Electricity & Water Authority



دائرة الشؤون الإسلامية والعمل الخيري
Islamic Affairs & Charitable Activities Department



Project Feasibility

الإدارة العامة للدفاع المدني - دبي
Directorate General Of Civil Defence - Dubai



UNITED ARAB EMIRATES
MINISTRY OF EDUCATION

مدينة دبي الطبية
Dubai Healthcare City



محاكم دبي
DUBAI COURTS



كليات التقنية العليا
HIGHER COLLEGES OF TECHNOLOGY

دائرة الأراضي والأملاك
Land Department



مجمع دبي الصناعي
DUBAI INDUSTRIAL PARK



النيابة العامة
PUBLIC PROSECUTION



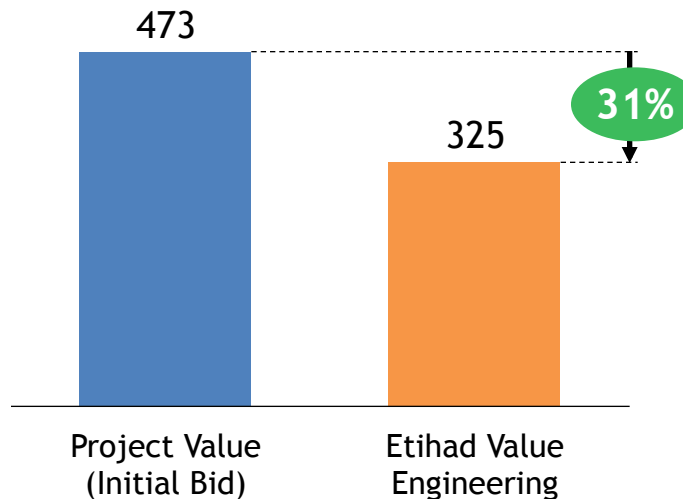
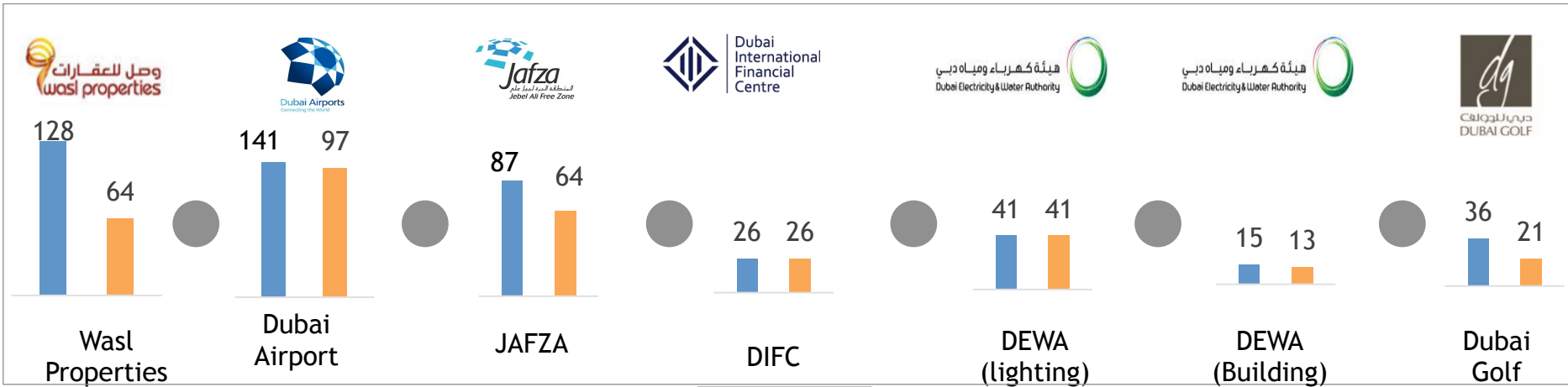
مجمع دبي للاستثمار
DUBAI INVESTMENTS PARK



Why work Etihad ES

Etihad Value Engineering Impact (million AED)

■ Project Value (Initial Bid) ■ Etihad Value Engineering



THE ETIHAD FACTOR:

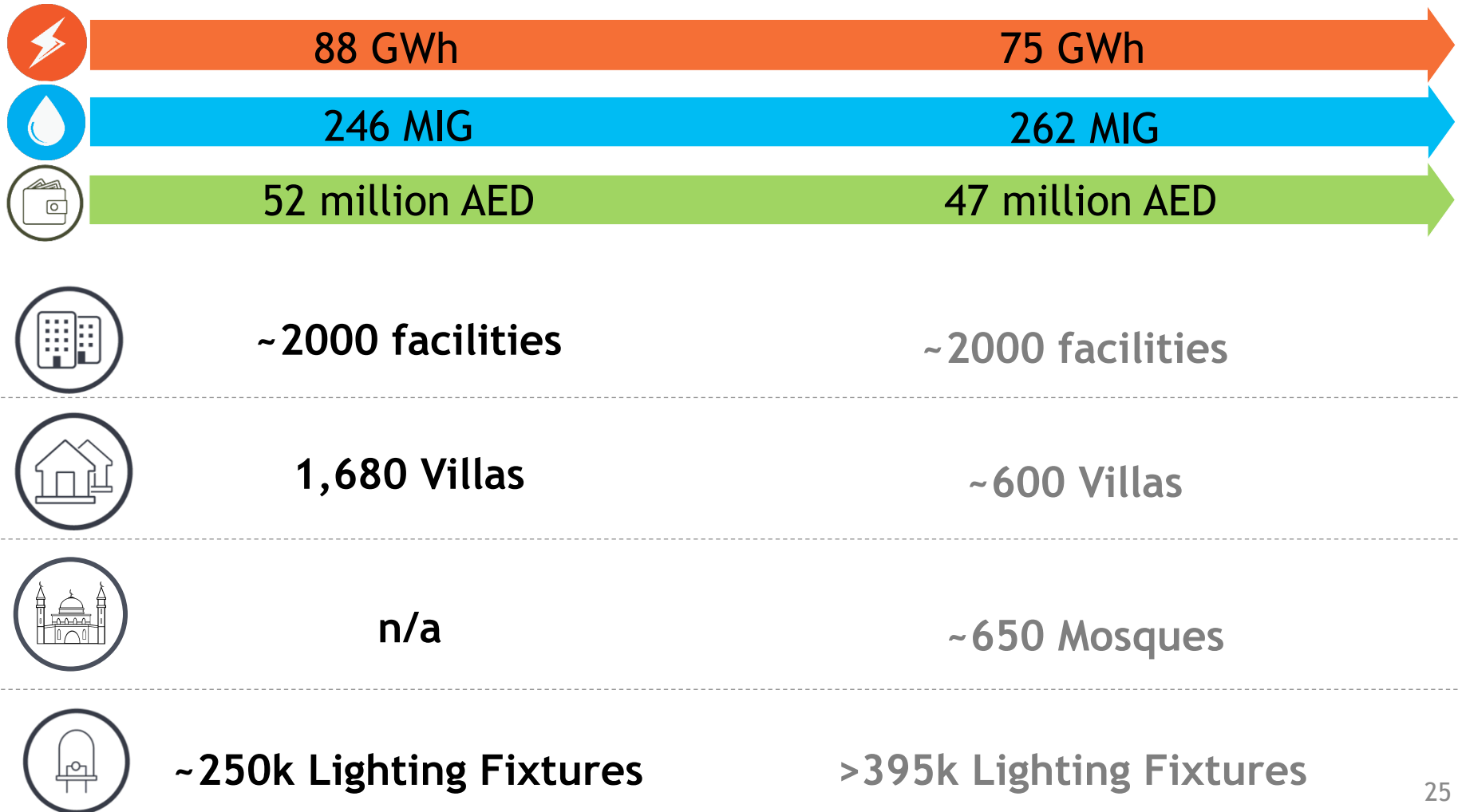
- 148 million AED (31%) saved vs. initial bids with Etihad Value Engineering
- Market expertise
- Advanced negotiation power
- Effective procurement process
- Competitive cost of financing

Retrofits done in 2016 and targets for 2017

DSM Program 2

2016 retrofitted

2017 target





- Retrofit of 7 DEWA Buildings
- Total Project Value: AED 12.2 Million
- Replacement of the Chiller Plant
- Significant Retrofit of HVAC System
- Improvement in the comfort level



savings

30 %



savings

~ 2 mil/year



contract

6 years



payback time

< 6 years



5 GWh/year



0.4 MIG/year



- Retrofit of DEWA Power Station
- Project Value ~ AED 93 Million
- Retrofit Scope ~ 70,000 LED Lights
- Project divided into 3 Phases



savings

70 %



savings

~ 21 mil/year



contract

5 years



payback time

< 5 years



47 GWh/year

JAFZA - Labor Accommodations

Project Development



- Retrofit of 157 Labor Accommodations
- Project Value AED 62 Million
- Project Funded by Etihad ESCO
- Retrofit Scope ~ 11,000 DX Unit
- Retrofit Scope ~ 81,000 Lighting Fixture



savings

30 %



savings

~ 22 mil/year



contract

6 years



payback time

< 6 years



26.4 GWh/year



199.7 MIG/year

MBR Housing Est. - Lighting

Project Completed



Lighting Retrofit of 1700 Villas

Project Funded by DEWA

Retrofit of 110,000 Lighting Fixtures

%

savings

80 %

AED

savings

~ 2 mil/year



contract

5 years



payback time

< 2 years



5.3 GWh/year

Wasl Properties - Wasl Buildings

Project
Implementation



- Retrofit of 243 Wasl Building
- Residential, Commercial & Offices
- Significant HVAC Retrofit
- Project Status: Tendering Stage



savings

target 28%



savings

~14.8 mil/year



contract

5 years



payback time

< 5 years



33 GWh/year



دائرة الشؤون الإسلامية والعمل الخيري
Islamic Affairs & Charitable Activities Department

- Retrofit of 600 Mosque
- Project Will be Funded By Etihad ESCO
- Significant HVAC & Lighting Retrofit
- Project Status: Tendering Stage



SEVEN TIDES
INTERNATIONAL

- Retrofit of 22 Seven Tides Facilities
- Project to be Funded By Etihad ESCO
- Energy Savings 10% to 20%
- Project Status: Tendering Stage

Key Benefits of working with Etihad ES



Etihad ES as a one stop shop for full management & execution of energy audits and retrofits



Zero down payment for retrofits



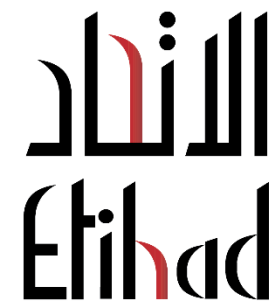
On-bill payment through DEWA



Average payback period of 5 years



Guaranteed savings agreement

The logo for Etihad Energy Services, featuring the word 'الاتحاد' in Arabic and 'Etihad' in English, with a red and white stylized 'E' and 'h'.

لخدمات الطاقة
Energy Services

A night-time photograph of the Dubai skyline, featuring the Burj Khalifa and other skyscrapers, with a full moon in the sky. The image is overlaid with a semi-transparent dark red filter.

Thank You