

Towards An Energy Efficient Dubai Airports

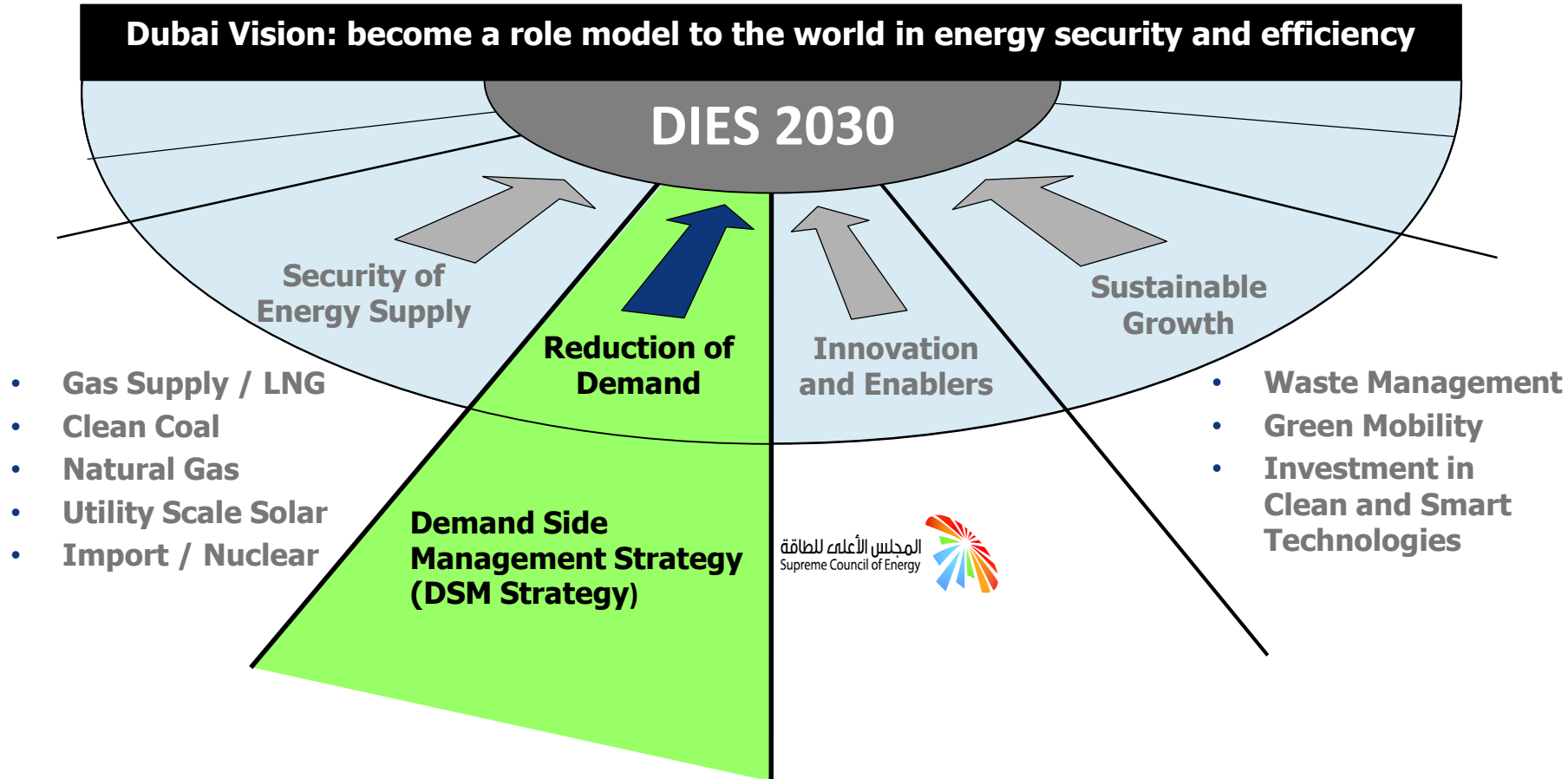
December 12th, 2018

Abdul Baset Askani
Project Manger
Abdulbaset.Askani@dubaiairports.ae

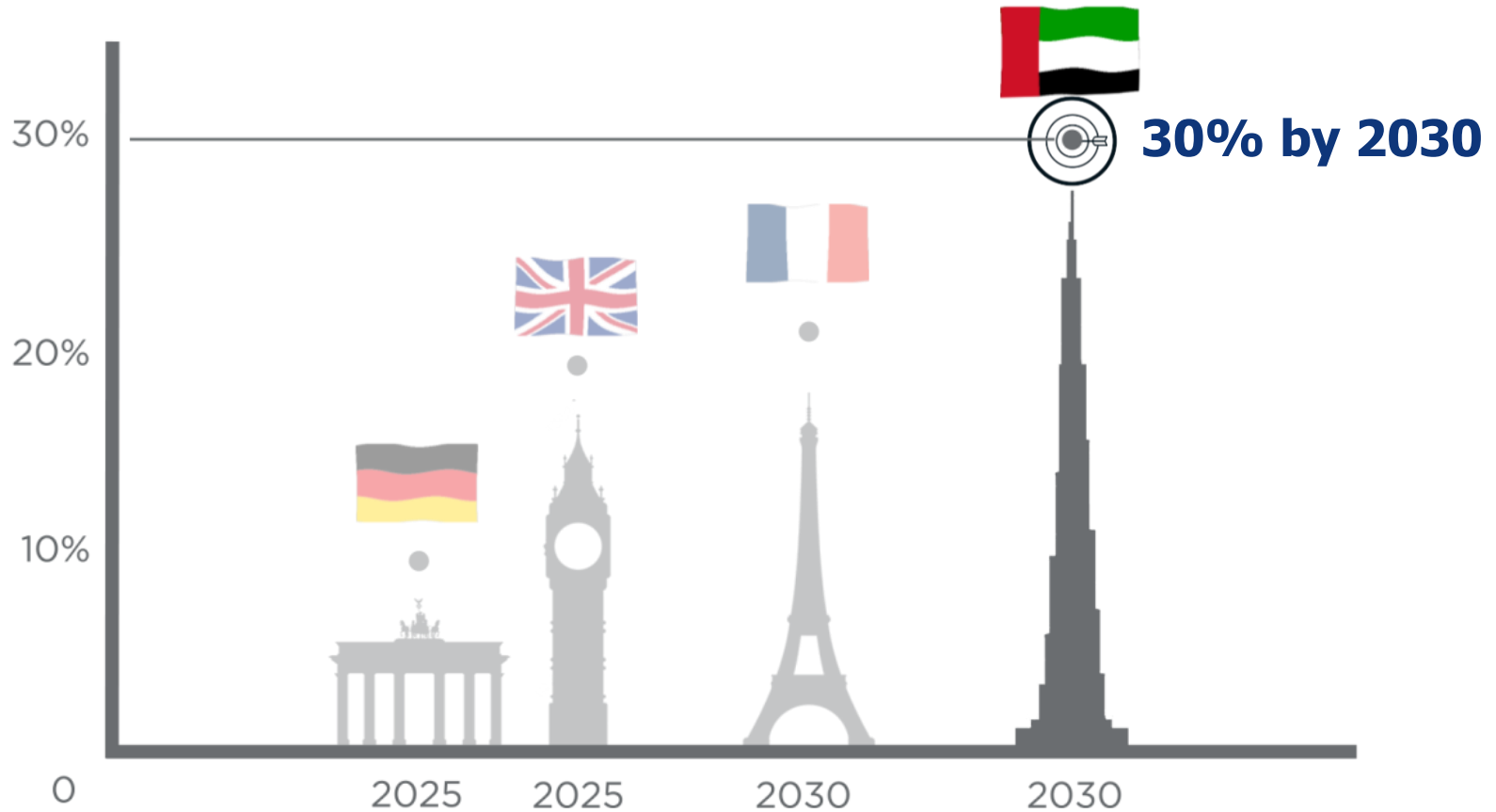


Dubai Airports
Connecting the World

DIES 2030 to support Vision of Dubai



Dubai targets for 2030



Dubai Airports Energy Consumption

Annual Electricity Consumption

- 1,084,467,893 kWh

Annual Water Consumption

- 1,120,910,577 IG

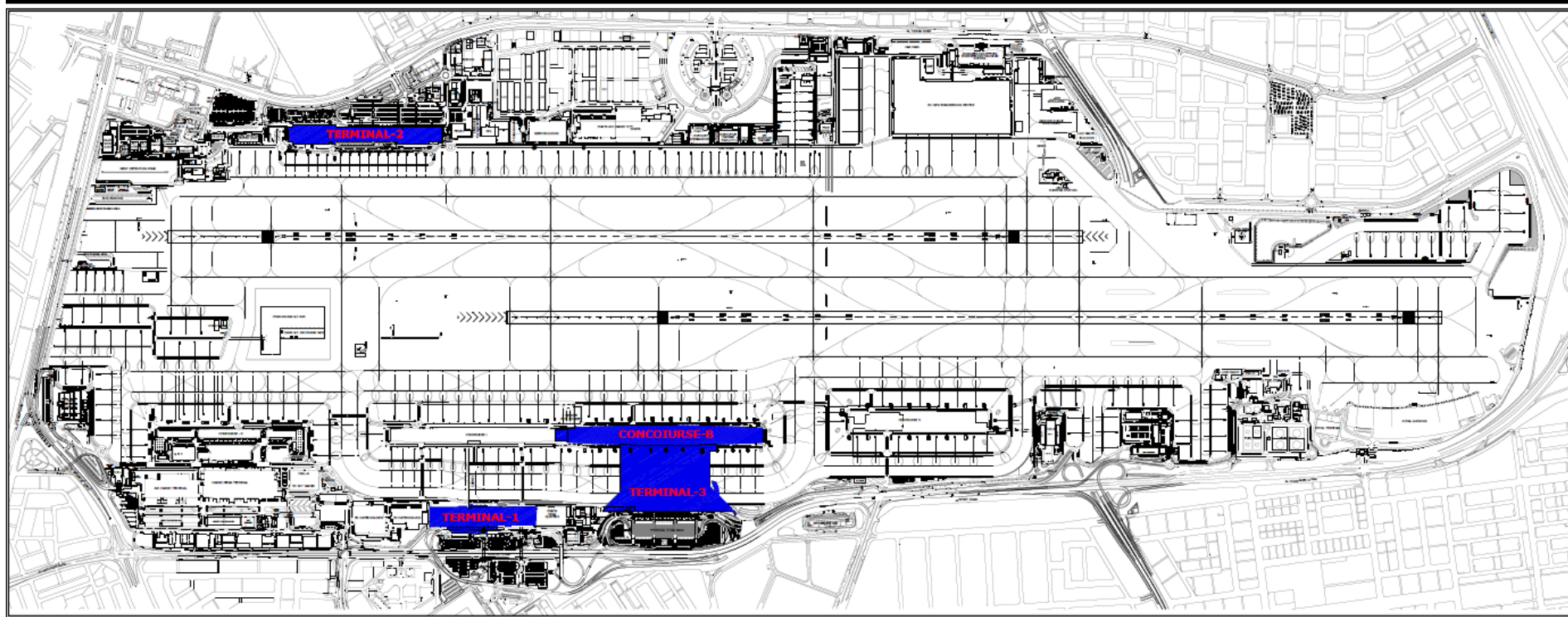
Annual Passenger/Cargo

- 83,654,250 PAX / 2,583,568 TONS

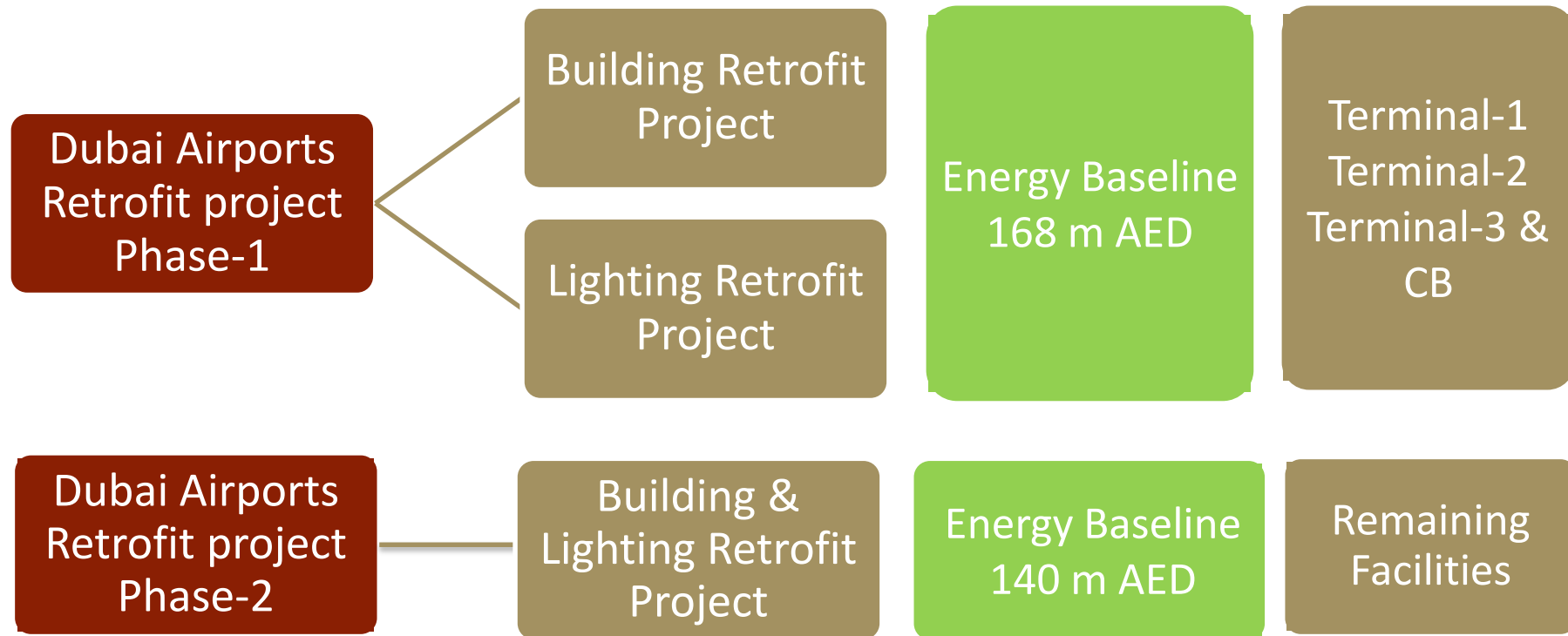
- Base Line Year 2016

Retrofit Phases

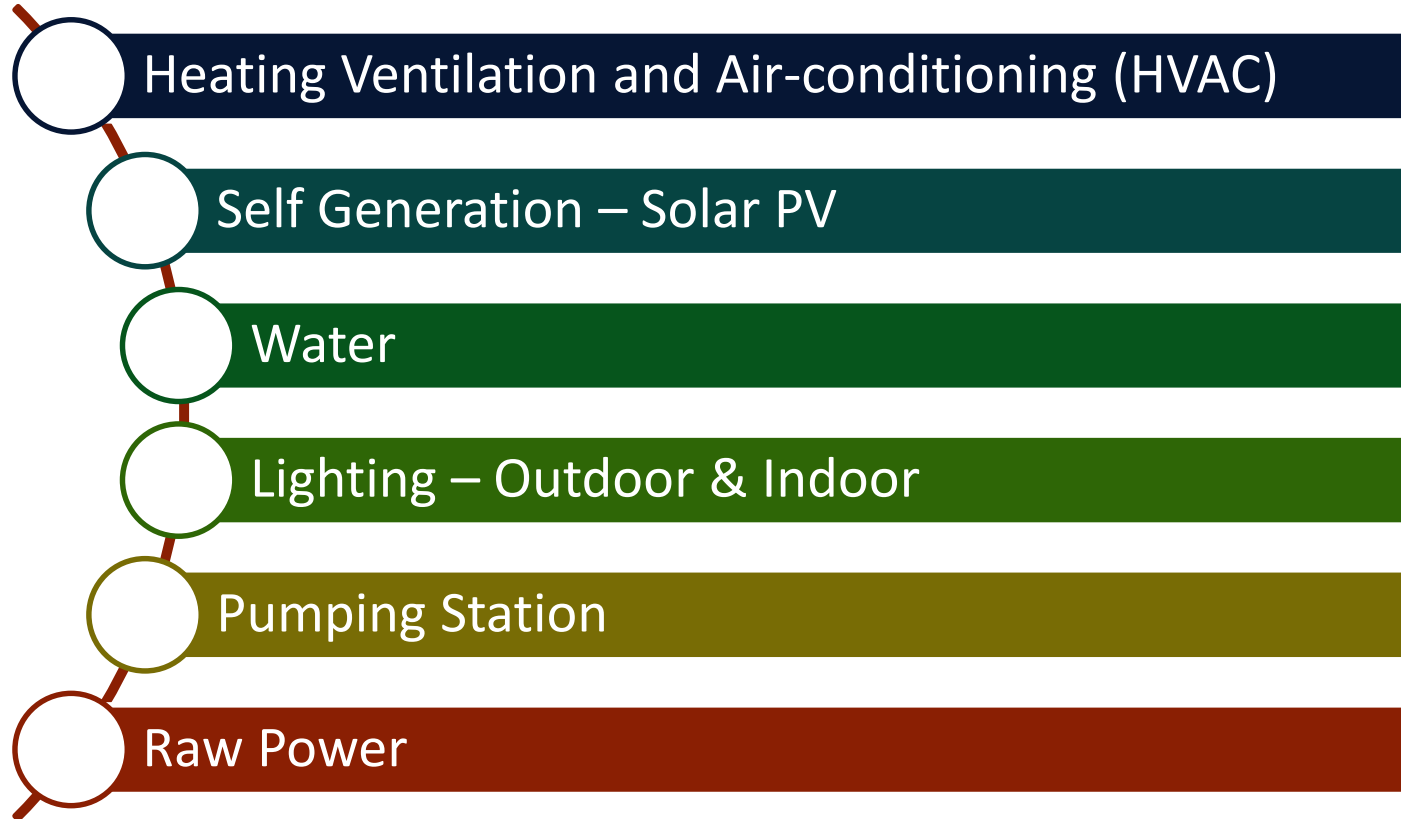
- Phase 1 – High Energy intensity facilities
- Phase 2 – Energy intense facilities



Dubai Airports Project Phases



Covered Energy Consuming Segments



ESCO Proposal: Technical Components

Energy Audit and Technical Proposal

- Process of the Energy Audit conducted
- Results of Investment Grade Energy Audit – EA Report
- Cost benefit analyses of energy conservation measures

Proposal Evaluation & Value Engineering

- Evaluation of Techno Commercial Proposal
- Value Engineering

Recommendation

- Recommendations of Energy Efficiency Measures (ECMS)

Project Scope & Project Plan

- Description of SoW, project execution plan, work packages, responsibility based on recommended Energy Efficiency Measures

Measurement & Verification Plan

- Methodologies and processes create Baseline
- Measurement and Verification on Actual Saving

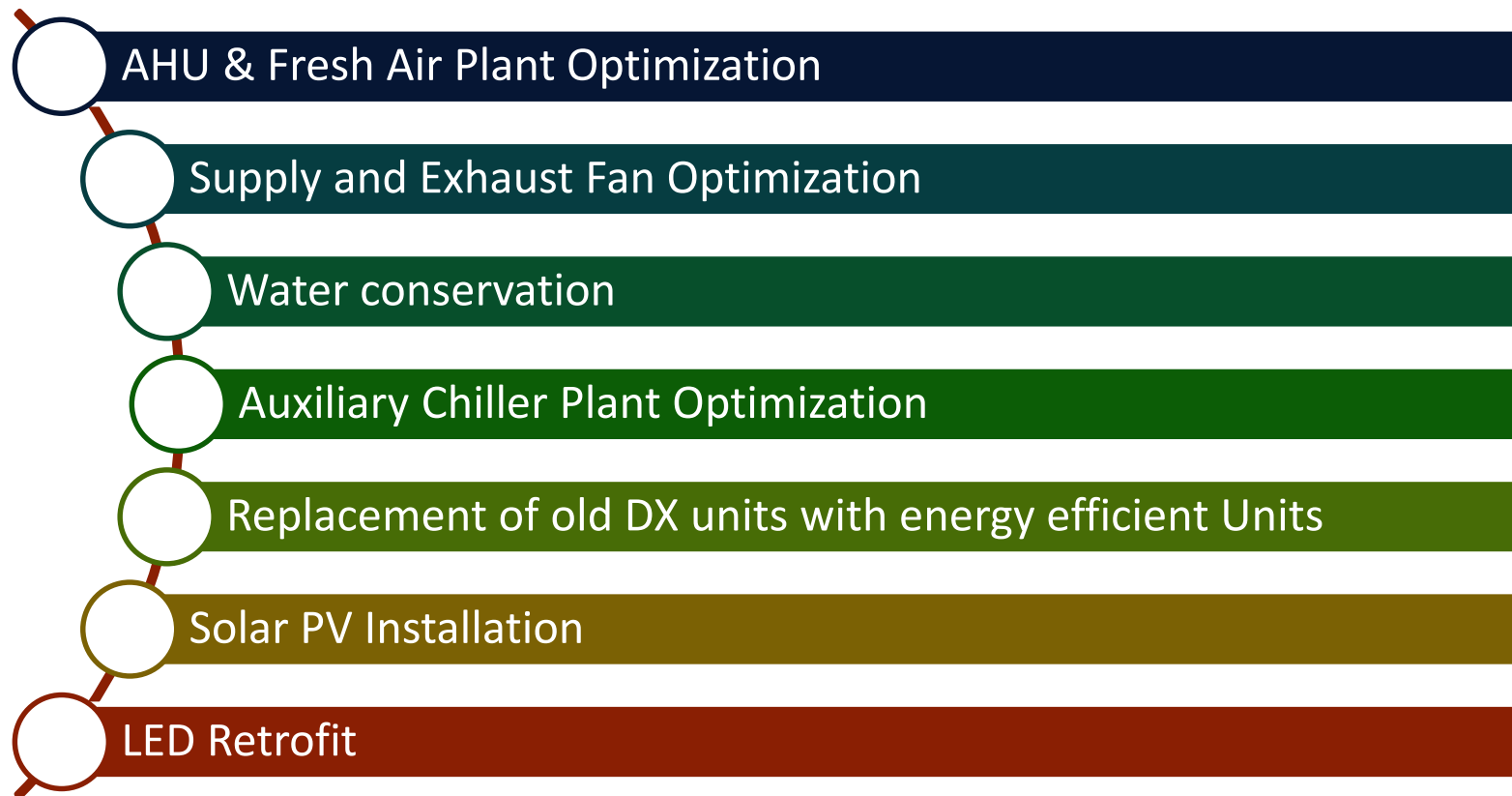
Maintenance Proposal

- Maintenance Plan
- Maintenance Cost

Training Program

- Capacity Building: Training Plan (ESCO will train Dubai Airport Team on new features of retrofitted facility)

Identified Energy Conservation Measures



Dubai Airports Building Retrofit Project Phase 1: Audit Outline

Project Scope – T1, T2, T3 &CB

- Pre-qualifying the ESCO
- RFP Preparation
- Investment Grade Audit
- Technical Proposal
- Proposal Evaluation
- Value engineering
- Selection of ESCO and recommendation to DXB
- Retrofit Contract
- Implementation of ECM
- Provide Guarantee Saving
- Maintenance of Installed ECM



Electricity and water savings
23 % Saving /year



Project Value
141.2 M AED



Zero CAPEX from DXB
100% of the project was funded by Etihad ES



Simple Payback
within 2.83 years

Dubai Airports Lighting Retrofit Project Phase: Audit Outline

Project Scope – T1,T2,T3 &CB Indoor lights and all Outdoor Lights

- Pre-qualifying the ESCO
- RFP Preparation
- Investment Grade Audit
- Technical Proposal
- Proposal Evaluation
- Value engineering
- Selection of ESCO and recommendation to DXB
- Retrofit Contract
- Implementation of ECM
- Provide Guarantee Saving
- Maintenance of Installed ECM



Expected Outcomes

Electricity savings
55 % Saving/year



Project Value
136 -140M AED



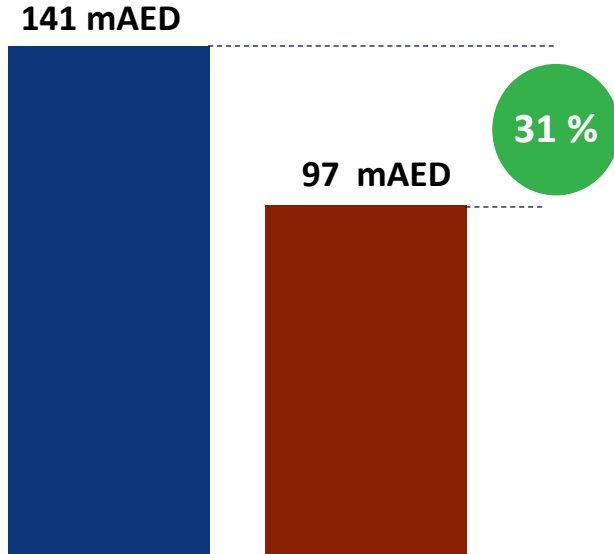
Zero CAPEX from DXB
100% of the project was funded by Etihad ES



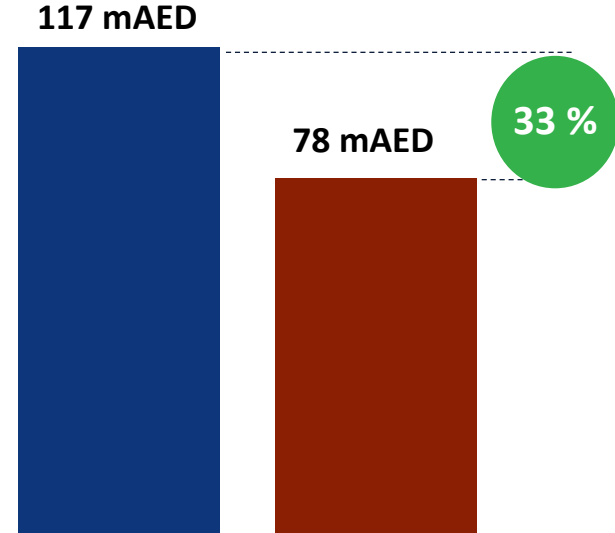
Payback
within 3.38 years

Etihad Value Engineering

Dubai Airports Building Retrofit Project



Dubai Airports Lighting Retrofit Project



 Project Value Initial Bid

 Etihad Value Engineering

Direct Cost Saving from Value Engineering – AED 83 Millions

Dubai Airports Building Retrofit Project Phase 2: Audit Outline

Project Scope – Remaining Buildings

- Pre-qualifying the ESCO
- RFP Preparation
- Investment Grade Audit
- Technical Proposal
- Proposal Evaluation
- Value engineering
- Selection of ESCO and recommendation to DXB
- Retrofit Contract
- Implementation of ECM
- Provide Guarantee Saving
- Maintenance of Installed ECM



Expected Outcomes



Electricity and water savings
14%-20% Saving/year



Est. Project Value
100-140M AED

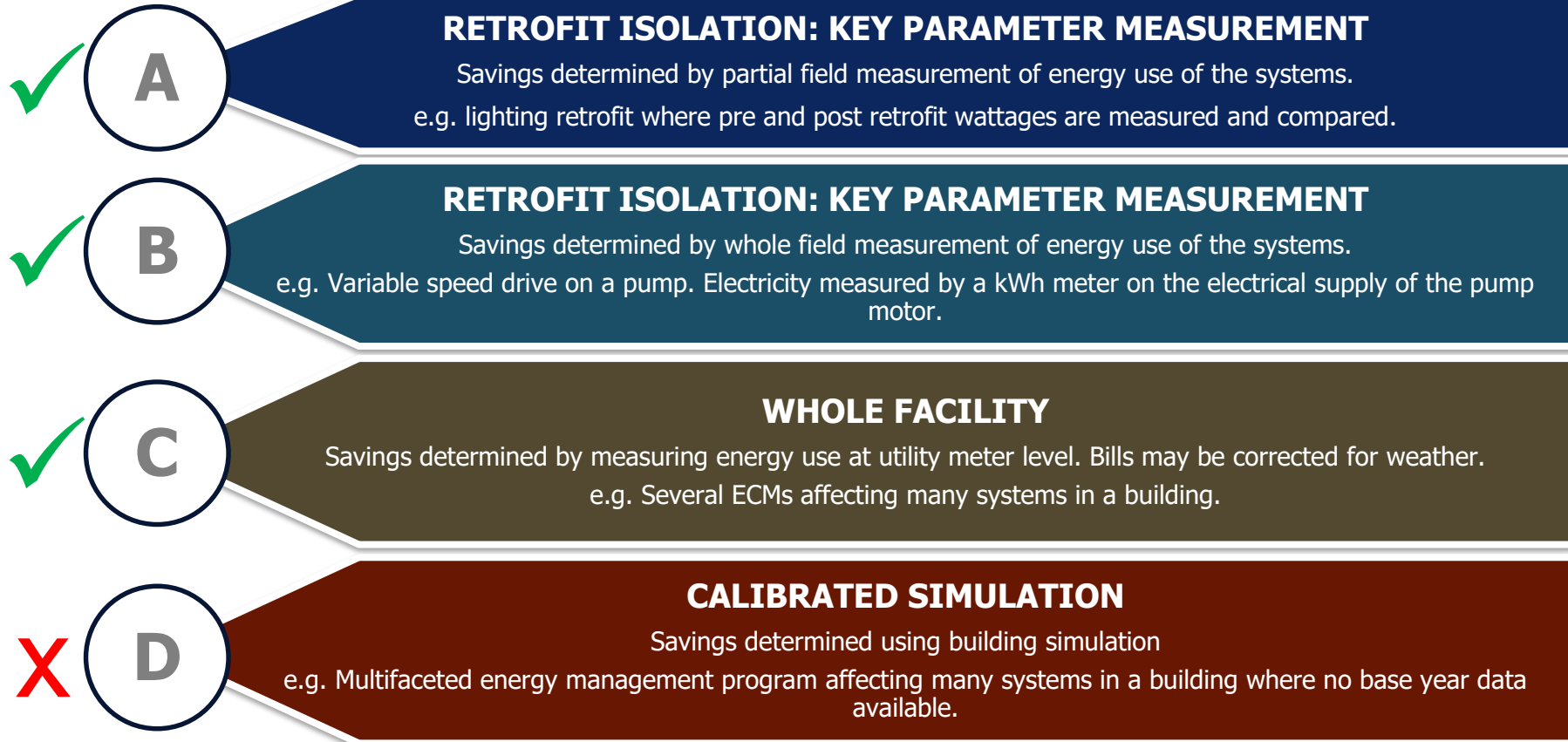


Zero CAPEX from DXB
100% of the project will be funded by Etihad ES



Payback
within 5 years

Measurement & Verification Plan – applicable options



Thank you



Dubai Airports
Connecting the World