UNITING FOR CLIMATE

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Saudi Aramco Energy Management Program (EnMP)
Energy Management Program Framework

Energy Management Program Pillars

Policy & Regulations
- Energy Policy
- Operational Excellence
- Engineering Procedures
- Fuel Allocation

Monitoring & Targeting
- Energy Reports
- Energy KPI Targeting
- Energy KPI Automation
- Corporate dashboards

Engineering Solutions
- Energy Assessments
- Corporate Studies
- Energy Technologies
- Building Energy Audit

Knowledge & Awareness
- Best Practices & Standards
- Courses, Workshop & Campaigns
- Certification
- Patents
Timeline of Energy Program Progression

- **2000**: EnMP Policy
- **2004**: Energy Optimization solutions
- **2006**: Co-Generation Facilities
- **2007**: EI KPI Target
- **2012**: Lead By Example
- **2018**: Online EI KPI solution

- **2006**: Co-Generation Facilities
- **2016**: 14 Cogen Facilities
  - 5,875 MW (2016)
  - 10,123 MW (2025)
- **2018**: Lunched EI KPI for each department, AA, BL and Corporate
- **2018**: Water Heaters
- **2018**: Lighting
- **2018**: Vehicles
- **2018**: HVAC
- **2018**: Smart Meters
- **2018**: Homeownership.
- **2018**: Real-Time
- **2018**: Monitor
- **2018**: Notification
LEAD by Example (LBE) Program scope

LBE has six non-industrial focus areas

- HVAC
- Lighting
- Homes & Buildings
- Water Heater
- Transportation
- Smart Meters
LBE has six non-industrial focus areas:

- HVAC
- Lighting
- Homes & Buildings
- Water Heater
- Transportation
- Smart Meters

Introduced higher (EER) requirements by 25%.
LEAD BY EXAMPLE SCOPE

LBE has six non-industrial focus areas

- Introduced a new energy efficiency requirement for lighting
  - 50%

- 8,000 street lights were replaced with LED

- 467,000 lights were replaced with LED in office & residential buildings
LEAD BY EXAMPLE SCOPE

LBE has six non-industrial focus areas:

- Introduced new thermal energy performance requirements for buildings: 60%
- Lighting
- Transportation
- Water Heater
- Smart Meters

All existing buildings and new construction projects are following the updated energy efficiency standard.
LEAD BY EXAMPLE SCOPE

LBE has six non-industrial focus areas

- Water Heaters: Mandated installing water heaters with a minimum energy factor of 95% in company communities.
- Lighting: All existing water heaters are complying with the update energy efficiency standard.
- Transportation
- Smart Meters
LEAD BY EXAMPLE SCOPE

LBE has six non-industrial focus areas.

- **Water Heater**
- **HVAC**
- **Smart Meters**
- **Lighting**
- **Homes & Buildings**
- **Transportation**

**Aluminum Tanker**

- **Steel Tanker**

2,921 fuel steel tankers were converted to Aluminum tankers. **30%**

5,198 V8 cylinders engine cars were Replaced with V6 **20%**

*Introduced higher fuel economy vehicles in Saudi Aramco fleet.*
LEAD BY EXAMPLE SCOPE

LBE has six non-industrial focus areas

- Install 1,500 smart meters in communities homes and office buildings.
- Establish energy usages baseline for billing employees living in company communities.
- Lighting
- Water Heater
- Transportation
- Smart Meters
- Two-Way Communication
- Accurate bill
LEAD BY EXAMPLE STATUS

LBE has six non-industrial focus areas

75% Overall Completion
LEAD BY EXAMPLE SAVING IMPACT

Efficient HVAC program will result in annual savings of 525,000 Barrel of oil equivalent
Reduce CO₂ Emission by 160 kt/y

Efficient lighting program will result in annual savings of 500,000 Barrel of oil equivalent
Reduce CO₂ Emission by 150 kt/y

Efficient Vehicle program will result in annual savings of 40,000 Barrel of oil equivalent
Reduce CO₂ Emission by 12 kt/y
LEAD BY EXAMPLE SAVING IMPACT

Total Lead By Example program annual savings is well over 1 million barrels of oil equivalent.

More than 350 thousands metric tons of CO₂ emissions is mitigated.

Which is the equivalent of removing 60,000 cars off Saudi roads for 1 year.
SA EnMP Cumulative Energy/CO2 Savings

Energy Savings

218.7 (MBDoe)

CO2 Emissions Reduction

24,910 (KTons)
Questions ?
Main Topic

- Item
- Item 2
- Item 3