HUMBLE STREET LIGHTS – NO MORE

“Smart City Connected”
City of Los Angeles
LED Conversion Project

170,000 LED Streetlights

63% Energy Savings

$9.1 Million Savings

Cars (approx.)
12,800 cars off the road

61,000 Metric Tons CO₂ Reduction

Homes (approx.)
Electricity for 8,400 homes

Single light Repairs

Night Time Crime
Yearly Comparisons
Local Street LED Fixture

2009

• Avg. Price = $432
• Efficacy = 42 Lm/W
• Life = 80,000 hrs
• Warranty = 5 yrs
2018

• Avg. Price = $100 range
• Efficacy > 125 Lm/W
• Life > 100,000 hrs
• Warranty = 10 yrs
Before and After Pictures of LED Program
73% Energy Savings
572 LED Fixtures
Wireless Remote Monitoring System

64% Energy Savings
Maintenance Savings

SINGLE LIGHT REPAIRS 2009 - 2016

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>Savings</th>
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<tbody>
<tr>
<td>FY 08/09 - 23,623</td>
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<tr>
<td>FY 09/10 - 20,604</td>
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<tr>
<td>FY 10/11 - 19,516</td>
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<td>FY 11/12 - 17,409</td>
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<td>FY 12/13 - 13,284</td>
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<td>FY 13/14 - 12,195</td>
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<tr>
<td>FY 14/15 - 11,809</td>
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<td>FY 15/16 - 10,613</td>
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**Smart City Solutions**

*Remote Monitoring System/Controls*

- Expanding capability of street lighting infrastructure
- Connect sensors to luminaires
- Transmit other information
- Aggregate and share data
- Generate reports via analytics
Smart City Solutions
Solar Powered Streetlights
Smart City Solutions

Smart Meters

Gas Co
Communication Devices
Smart City Solutions

Security Cameras
Smart City Solutions

Banners
Smart City Solutions
Solar to Grid

• Panel Size: 240W

• Avg. kWh Generated: 1kWh/day
Smart City Solutions
Streetlight / EV Charging Stations Integration

“A Standardized, easily accessible and consumer friendly charging infrastructure is required. A good example of how this trend could succeed is the idea of integrating charging points in the existing streetlights.”

President of the German Car Association
Smart City Solutions

Mobile Apps

Outages Reported by Mobile Apps:

More than 25 percent of all service requests
Smart City Solutions
Telecommunications Equipment

SMART Poles

CoLocation Poles w/Attachments
SMART TECHNOLOGIES ARE CONVERGING IN OUR PUBLIC SPACES
SMART CITY = MANY CONNECTED DEVICES
STREETLIGHTS MAY CARRY MANY DEVICES
SMART CITY DONE BADLY
ALL SERVICES ACCOMODATED INSIDE THE SMART.NODE™
SMART.NODE™ - MODULAR AND SCALABLE
SMART.NODE™ – PLUG & PLAY FUNCTIONALITY
CASE STUDIES
ROYAL BOTANIC GARDEN SYDNEY
BROOKFIELD – STRONG BALANCE SHEET WITH GLOBAL REACH

Brookfield Asset Management

- **$350 Billion** under management globally
- 80,000 operating employees
- 750 investing professionals
- 30 countries
- 115 years investing in real assets

### Brookfield's Portfolio

- **Real Estate** $188 billion AUM
- **Infrastructure** $54 billion AUM
- **Renewable Power** $47 billion AUM
- **Private Equity** $42 billion AUM

1. As of the latest available data.
BROOKFIELD INFRASTRUCTURE PARTNERS

OWNS AND OPERATES:

- UTILITIES
- TRANSPORT
- TOLL ROADS
- ENERGY
- SUSTAINABLE RESOURCES
- DATA INFRASTRUCTURE

$54B
ASSETS UNDER MANAGEMENT

30,000
OPERATING EMPLOYEES

160+
PROFESSIONALS
ENE-HUB’s THREE TIER OFFER TO MUNICIPALITIES

- ENE.HUB ACQUIRES STREETLIGHT ASSETS
- ENE.HUB FUNDS LED UPGRADE AND SMART CONTROLS
  - MAINTAINS THE STREET LIGHTING ASSETS
  - DELIVERS ON-GOING SAVINGS ON ENERGY COSTS
- ENE.HUB DELIVERS A CONNECTED SMART CITY NETWORK
  - SMART NODES
  - SMART CITY DEVICES
  - CMS
SMART CITY CONNECTED

THANK YOU