A successful PFI & PPP Model of Smart Street Light Implementation

從PFI+PPP+智慧路燈的成功經驗 邁向智慧城市

David Yeh
LITE-ON Corporation
Smart Life & Applications SBG
General Manager of LEOTEK SBU
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The World’s Largest Single City LED Street Light Replacement Case (PFI Model)

New Taipei City, Taiwan

120,000 LED Street Light Replacement

Average Energy Savings: 75% / Highest Energy Savings: 86%

- 170,000,000 kWh Annual Electricity Savings
- 140,000,000 NTD Annual Electricity Cost Reduction
- 2,000 Job Opportunities Created
- 90,000 Metric tons Carbon Dioxide Equivalent
- 43,000 Households Annual Energy Consumption Equivalent
- 64,000 Trees Planted Equivalent

Annual energy consumption equivalent to 43,000 households.

Planted equivalent to 64,000 trees.

Opportunities created 2,000 jobs.
Jordan Country

Annual Savings > US$17M / Energy Saving up to 70%

- 501,047,524 kWh Annual Electricity savings
- 91,691,696 USD Annual electricity cost reduction
- 306,642 Metric tons Annual Carbon dioxide equivalent
- 306,642 Trees Annual Planted equivalent
Traditional Procurement VS PFI Project Model

Gov. Traditional Procurement Model

City Government

<table>
<thead>
<tr>
<th>Specification</th>
<th>Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction Procurement</td>
<td>Paid by Specification</td>
</tr>
<tr>
<td>Labor Procurement</td>
<td>Paid by Specification</td>
</tr>
</tbody>
</table>

Private Sector

Replacement of the Contract | Maintain of the Contract

PFI Model: Gov. Buy Public Service

City Government

<table>
<thead>
<tr>
<th>Specify Service Perform</th>
<th>Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sign PFI Contract</td>
<td>Paid by Service performance</td>
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</tbody>
</table>

Private Sector (PFI Team)

Provide Financing

Finance Institute

$
Traditional Procurement VS PFI Project Model

**Traditional Procurement**

- Over budget during construction
- Expenditure Caused by Overtime during Construction
- Over budget during Operation

**PPP / PFI Model**

- No Payment
- Service Payment
PPP/PFI Architecture

- Authority
  - Central & Local Authority

- PPP/PFI Contract
  - Project Company
    - Construction Contractor
    - Operation Contractor

- Source of Financing
  - Direct Agreement
    - Loan Institution & Bank
      - 70%~90%
  - Shareholder Interested Parties
    - 10%~30%

- Interested Parties
  - Investors
  - Contractor
  - Operation Institution

Specification of the Contract Results

Defined Risk Transfer Specification
Street Light is the First Step to the Smart City

The Poles Become A “Smart” Platform To Deliver Services

Direct use the power of the street light

Pole Height Range: 3-20 meters

Street lights are government assets

An Integrated Lighting Solution Provider
The First Step to Smart City – LEOTEK Smart Pole

Project Location: Jiankang Rd, Taipei, Taiwan
Project Scale: 8 LEOTEK Smart Poles
Model: TG Series, 2nd Smart Pole

Taipei City, Taiwan

Infrastructure:
- LEOTEK Smart Street Light
- Smart Power Management
- Simple Traffic Management:
  - Parking Violation Warning
  - Speeding Violation Reporting
- Traffic Congestion Monitoring
- Environment Management:
  - Air Quality Monitoring
- Business Application:
  - WiFi Base Station
  - Big Data Collection and Analysis
Street Lighting Network Construct Smart City

Average Energy Savings: 70%  /  Highest Energy Savings: 86%

Annual Electricity savings: 9,315,914 kWh
Annual electricity cost reduction: 14,365,719 NTD
Annual Carbon dioxide equivalent: 4,854 Metric tons
Annual Planted equivalent: 12,959 Trees

Taoyuan City, Taiwan

Project Location: Taoyuan City, Taiwan
Project Scale: 9,818 LED Street Light
Model: TG Series
Function: Smart Lighting Control
Making cities more efficient and welcoming.

Yancheng City, China (PPP Model)

An Integrated Lighting Solution Provider

Project Location: Yancheng City, China
Project Scale: 14,000 LED Street Light
Function: Smart Lighting Control, Flood Monitoring & Warning, WiFi, Litter Monitoring, Theft Detection, Pothole Inspection
Benefit of LEOTEK Smart Solution

Secure
End-to-End Across your System

Connectivity
Everything To Everything

Fast Deployment
Meet the Needs of the City

Scalable
Allows any Possibilities Connecting to Future
LITE-ON ： A World-Class Excellence Company

Founded：1975, Taiwan
Revenue：USD 8 billion in 2017
Worldwide Locations：335 (55 factories)
Employees：64,500 (2,800+ R&D)
Global Patents：2,700+ (3% of revenue for R&D)
LEOTEK : Lighting Our Cities Since 1992

1992
- LEOTEK was born!
  Start from USA.

2005
- Become the World’s TOP 3 supplier of TSL

2009
- LEOTEK LED Luminaire
  Selected by City of Los Angeles.

2014
- LEOTEK merge into LITEON on June, 2014 as one of the business units.

1995
- Focus on LED traffic signal lights

2007
- Receive pilot project of LED street light in Toronto, Ontario
- Private company success in USA, acquired by LITEON Group in 2007

2017
- Over 1.7 million LED street lights installed throughout the world.

Over 1.7 million LED street lights installed throughout the world.
- Global number 1 LED street lighting solution provider.

LEOTEK : Lighting Our Cities Since 1992