

# P&E R

## TATA POWER DELHI DISTRIBUTION LIMITED (TATA POWER - DDL)

CASE STUDY  
OCTOBER 2018



# Tata Power-DDL is first utility to achieve a PEER GOLD Certification in Asia.

*“Being a leading power distribution utility, we have worked towards enhancing energy efficiency and high system reliability. All our systems are technologically integrated and ensure non-stop quality power supply to a populace of 7 million people in the national capital. The PEER rating assigned by GBCI bears testimony to our resilient and robust network. The rating encourages us to benchmark and evaluate our efforts and to continually strive for improvement.” – Mr. Sanjay Banga, CEO, Tata Power-DDL”*

It was in 2016, Green Business Certification Institute (GBCI) and India Smart Grid Forum (ISGF) signed a groundbreaking MoU to accelerate market transformation of smart grid technologies and sustainable power systems in India and Southeast Asia through GBCI’s PEER (Performance Excellence in Electricity Renewal) program. Through ISGF, GBCI collaborated with Tata Power-DDL for certification of PEER.




Tata Power Delhi Distribution Limited (Tata Power-DDL), previously North Delhi Power Limited (NDPL), is a joint venture between the Government of the National Capital Territory of Delhi and Tata Power Co. Ltd. The company started operations on July 1, 2002 post the unbundling of the erstwhile Delhi Vidyut Board (DVB). Tata Power-DDL distributes electricity in North and North West parts of Delhi and serves to a population of 7 million. With a registered consumer base of 1.64 million and a peak load of around 1967 MW (recorded in July 2018), the company's operations span across an area of 510 sq. kms. There is a huge commitment, infrastructure and distribution system in place to reach out power to the last mile with minimal interruption and to supply quality power. Considering these aspects and to evaluate their performance to global standards **Tata Power-DDL has gone for PEER Certification and achieved Gold rating** after undergoing a rigorous certification and review process. Thus, demonstrating its leadership in smart grid power transformation.



Figure1. Showing 66kV remote controlled Tata Power-DDL Bawana 6 Grid Station

## KEY HIGHLIGHTS OF TATA POWER – DDL

The project has achieved significant benefits through energy efficiency measures and solar power. The cumulative savings achieved per annum are –

-  Energy savings – **26.20 million units**
-  **448.02 kilotons of CO<sub>2</sub> emission mitigated**
-  Cost Savings of **INR 177 million**

## EXCELLENT OPERATIONS & MANAGEMENT SYSTEM

Tata Power-DDL is a frontrunner in providing reliable, affordable and quality power to its consumers by implementing some of the state of art technologies. Tata Power-DDL has the Advanced Distribution Management System (ADMS) integrating SCADA (Supervisory Control And Data Acquisition), DMS (Distribution Management System) and OMS (Outage Management System) on a single platform

which has the capability of performance monitoring, tracking and control of distribution network, fault and outage management and network performance optimization across the 1123 circuits. Using this technology, Tata Power-DDL can now effectively manage their peak demand and quickly restore power during outages especially in times of emergency / disaster situation. Including ADMS, all the major assets, grid networks and large commercial offices were also connected through a strong optical fiber backbone with capacity of 10 Gbps in core ring and 1 Gbps in sub rings to provide a strong communication backbone support to the grid system. These measures have helped Tata Power-DDL to score exceptionally high under the Operations, Management and Safety category.



Figure 2. ADMS at Tata Power-DDL

Additionally, to reduce interruption and build the system for resiliency, 50 percentage of their cables are undergrounded and the electrical infrastructure prone to flood are identified and elevated as per the guidelines of CEA (Central Electricity Authority).

## CUSTOMER-CENTRIC INITIATIVES

Since its inception, Tata Power-DDL is widely known for its customer friendly initiatives and proactive programs and policies. Tata Power-DDL has introduced consumer care centers, Call centers and E-kiosk to address customer queries and online bill payment for ease of service. To have a consumer survey in a prescribed format is a basic requirement in PEER and Tata Power-DDL has met this through their recent survey and achieved a customer satisfaction index of 4.5/5. Also, PEER emphasize on energy conservation under Demand Side Management (DSM) credit, through the **rebate-based AC replacement program**, and **Unnat Jyoti by Affordable LEDs for All (UJALA) scheme**, resulted in an **energy savings of 5.20 and 21.00 million units** respectively.

Old AC	Power Consumption (kWh)	Energy consumption per unit with old AC	Power Efficiency (Watt)	Electricity consumption per unit with new AC
1.5 Star	2400	1200	1875	900
2 Star	1800	900	1500	675
3 Star	1440	720	1125	510

Figure 3. Rebate-based AC replacement program

Tata Power-DDL through their rooftop solar program for **consumers has implemented 124 Rooftop solar plants** under net metering with cumulative capacity of **15MWp**. In addition, **1.76 MW distributed solar PV system** was installed as part of the sustainability initiative. All these measures have helped in a **cumulative cost savings of INR 177 million and carbon emission reduction of 448.02 kilotons per annum**. PEER GOLD certification validates Tata Power-DDL's accomplishments, sets a benchmark for other Power Distribution Companies and Utilities in the market. It also demonstrates Tata Power-DDL's commitment to sustainable power systems and continuous improvement to be a global leader.



Figure 4. 1 MW rooftop solar PV system at Keshavpuram, New Delhi

## PEER CERTIFICATION:

Performance Excellence in Electricity Renewal is a certification program that measures and helps improve power system performance and electricity delivery systems. Through application of PEER Cities and Utilities (DISCOMs) can gain a competitive advantage by differentiating their performance, documenting the value produced and demonstrate meaningful outcomes. The PEER rating system includes four credit categories:

- ▶ Reliability and Resiliency (RR)
- ▶ Energy Efficiency and Environment (EE)
- ▶ Operations, Management and Safety (OP)
- ▶ Grid Services (GS)

Out of a possible 110 points, Tata Power-DDL earned 60, minimum required for **GOLD** certification under version 2 of the PEER rating system (Cities & Utilities). Additionally, Tata Power-DDL met all the prerequisites including reliability monitoring, Energy efficiency & Environmental disclosure, System energy efficiency disclosure, triple bottom line and consumer survey. As, part of the PEER process, Tata Power-DDL identified opportunities for continuous improvement, that includes reducing sustained interruption, and improving their energy generation mix (refer Figure 5), and also enabling customers. These strategies have the potential to help Tata Power-DDL further reduce their energy cost in long-term.

## PEER Certification for Utility Projects

Certified 07 August 2018

<b>Total Points Achieved</b>	<b>60</b>
<b>Reliability and Resiliency</b>	<b>18</b>
<b>Energy Efficiency &amp; Environment</b>	<b>06</b>
<b>Operations, Management &amp; Safety</b>	<b>15</b>
<b>Grid Services</b>	<b>19</b>
<b>Innovations &amp; Regional Priority</b>	<b>02</b>
<b>Total Possible Points</b>	<b>110</b>

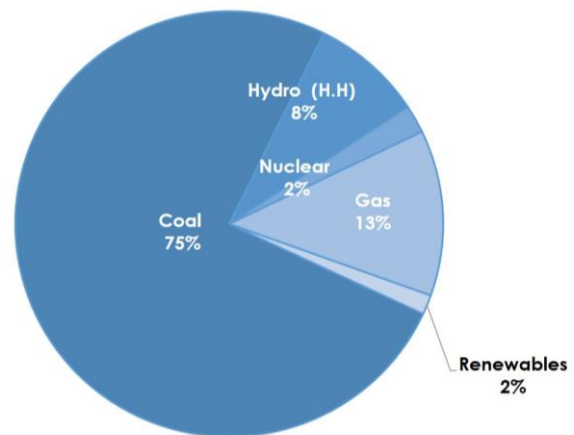


Figure 5. Tata Power – DDL energy mix

### About PEER

Performance Excellence in Electricity Renewal (PEER) is a rating system and certification for defining, assessing and verifying the overall sustainable performance of electricity delivery system design & operations. PEER is designed to deliver sustainable, resilient and reliable energy around the globe. Learn more: [peer.gbci.org](http://peer.gbci.org)