

**RFP - Technical**

**for**

**Power Purchase**

**from**

**Renewable Energy Service Company**

**(RESCO)**

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## 1. Overview

TAIPA (Tower And Infrastructure Providers Association) is an association of tower companies ATC India Tower Corporation Pvt. Ltd., Bharti Infratel Ltd., GTL Infrastructure Ltd., India Telecom Infra Ltd., Indus Towers Ltd., Tower Vision India Pvt. Ltd., Viom Networks Ltd. TAIPA expresses its commitment toward green environment while declaring to convert 100,000 towers powered up through Alternate energy sources.

A pilot project of approximately 500 sites has been proposed to start with, after following the due process for bid evaluation. With this intent of increasing the use of Green & Clean power for telecom tower sites, TAIPA proposes collaboration with Renewable Energy experts - “**RESCO**: Renewable Energy Service Company”. This collaboration will help Telecom tower companies to go green while encouraging RESCOs to provide surplus green power to the community and reducing the carbon footprint of telecom tower operations.

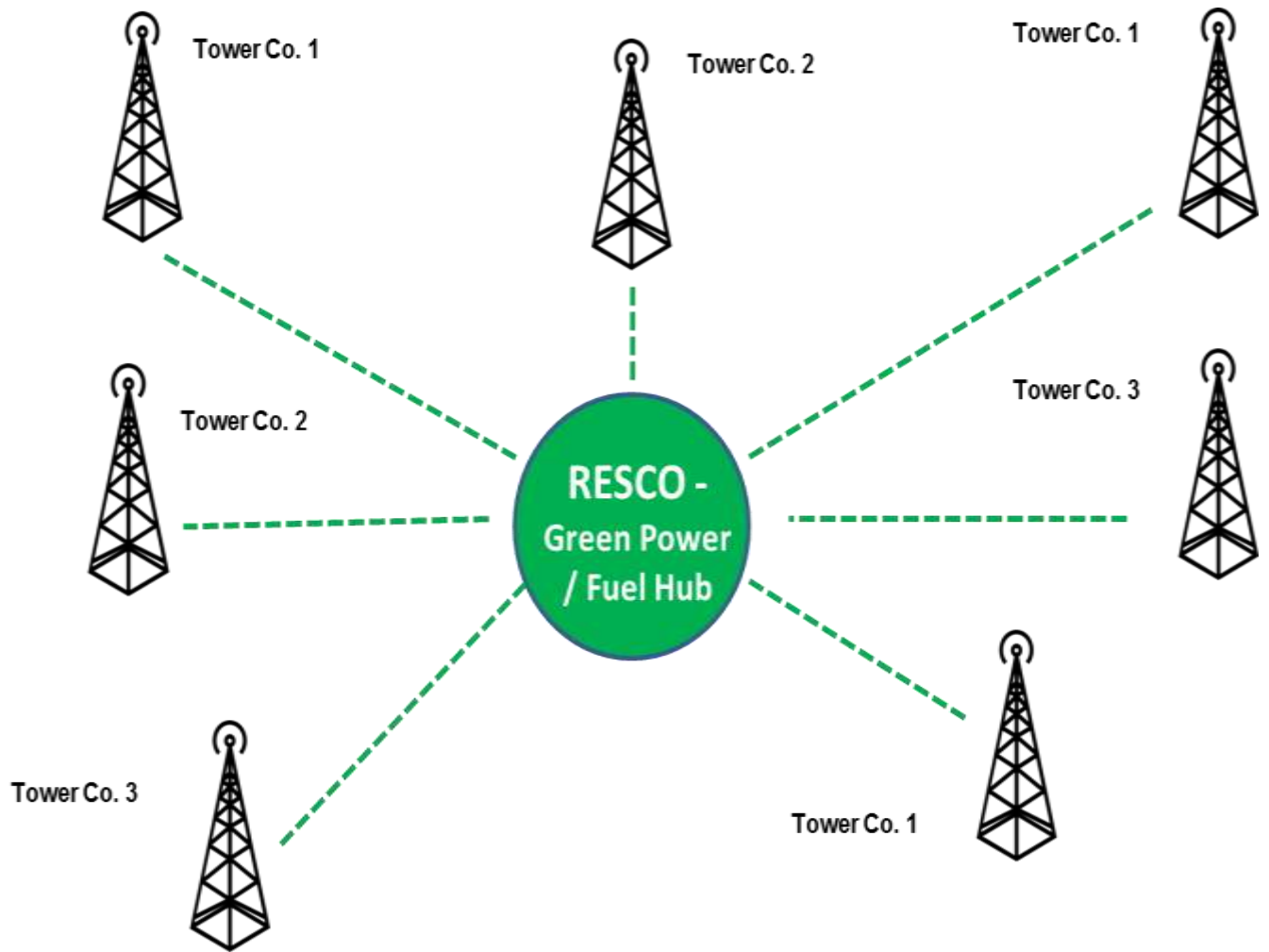
This also aligns with recently announced DoT directive on maximizing the usage of Renewable energy resources for generating power at telecom tower site while reducing carbon footprint.

## 2. RESCO Concept

The objective is to partner with a Renewable Energy Services Co., who specializes in providing power through renewable energy sources. Power generated from DG sets shall be replaced with green power (produced through Renewable Energy Technology / RET) provided by RESCOs, thus eliminating / minimizing the usage of diesel at sites.

All TAIPA member Tower Cos. will offer their towers in an earmarked area, thus increasing the requirement volume. Group of towers will form cluster and shall be offered to one RESCO to provide green power. RESCOs will decide the required generation capacity to be installed based on site wise demand provided to RESCOs by Tower Company. RESCOs are free to decide on site generation or generation at a hub location and deliver the power within cell site premise as per agreed SLA. Tower Cos. shall be anchor customer and RESCOs are encouraged to provide surplus power to the surrounding Community through separate / direct engagement with them.

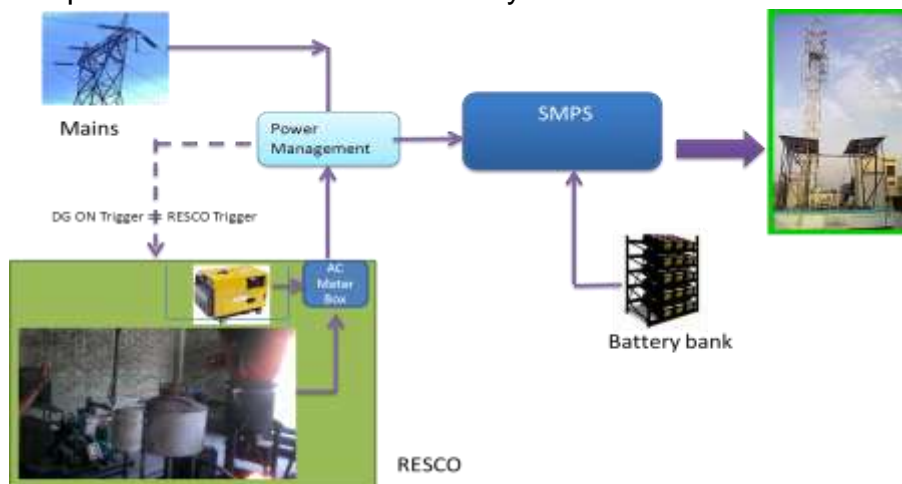
Sample illustration of RESCO model



Few of the options that are envisaged, are mentioned below, however RESCOs are open to explore further innovative options

**Option 1: Delivery of AC Power (230 V)**

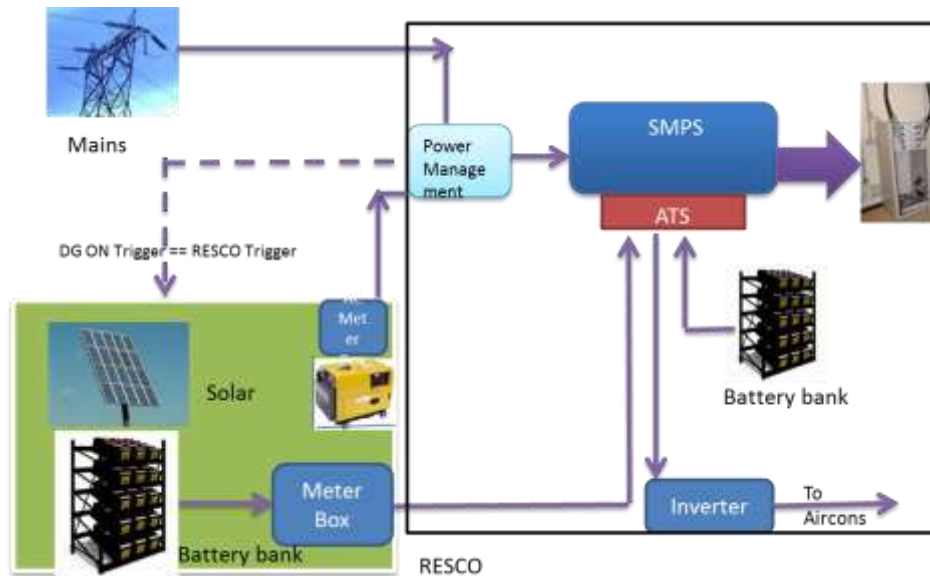
- RESCO to install RET set up on Build, Own & Operate basis.
- Deliver power within Telecom tower site, measured through separate meter installed at every tower co. site.
- Existing DG to be maintained by RESCO for use during emergency. Power delivered through this to be metered through the same meter installed.
- Dedicated sub-meter for DG power generation shall also be installed.
- Existing battery for BTS backup shall be owned & maintained by Tower cos. for critical back-up. It will be a part of site load from RESCOs point of view.
- In case RESCO feel battery is required for maintaining uptime and services, they should keep and maintain their own battery.



**Option 2: Delivery of DC Power (48 V)**

- RESCO to install RET set up on Build, Own & Operate basis.
- RESCO to deliver power at Telecom tower site, measured through dedicated meter installed at every site.
- Existing DG to be maintained by RESCOs for use during emergency. Power delivered through this to be metered through an additional meter installed for DG sets.
- Existing battery for BTS backup shall be owned & maintained by Tower cos. for critical back-up. It will be a part of site load from RESCOs point of view.

- In case RESCO feel battery is required for maintaining uptime and services, they should keep and maintain their own battery.
- RESCOs to provide a suitable mechanism (ATS - Automatic Transfer Switch) for seamless transfer between RESCO DC power and Tower Co. DC power.
- Inverter for Aircon operation shall be managed by Tower Cos. in case of Indoor sites.



### 3. Deliverables

1. Power on demand (measured in KWH).
2. Un-interrupted supply within desired quality parameters of power, on demand, with committed uptime of 99.95%.
3. Existing DG can be used in case of emergency only.
4. RESCO to ensure power availability at site within 10 minutes max after trigger from Tower Co.
5. Half-yearly GHG emission footprint report, in terms of CO2e emissions (site wise).
6. MNRE accreditation is preferred
7. Quality of power required:
  - a. Delivery of AC Power (230 V)
    - i. AC Power, 230 Volts +/- 5%, 50 Hz +/- 5%
  - b. Delivery of DC Power (48 V)
    - i. DC Power, 48 to 56 Volts, Ripple (+/-3%)

## 4. Metering & Tariff

1. Dedicated meter shall be installed to measure power delivered through RESCO.
2. RESCO not to quote rates in the bid for this RFP - technical
3. RESCO may define Minimum guaranteed off take (MGO) per cluster & fill it in below table no 2.
4. Fill the details in the tables provided below

**Table 1: Power Delivery Slabs**

S. No.	Delivered KWH / month / site	Type of Power	RET used	Max. Connected Load permissible / site - Single phase		Max. Connected Load permissible / site - Three phase		Tariff
				KW	Ampere	KW	Ampere	
1	Upto 100	AC / DC						Rates to be quoted separately after receipt of commercial RFP
2	100 - 250							
3	250+ to 500							
4	500+ to 750							
5	750+ to 1000							
6	1000+ to 1250							
7	1250+ to 1500							
8	1500+ to 1750							
9	1750+ to 2000							
10	2000+ to 2250							
11	2250+ to 2500							
12	2500+ to 2750							
13	2750+ to 3000							
14	3000+ to 3250							
15	3250+ to 3500							
16	3500+ to 3750							
17	3750+ to 4000							
18	4000+ to 4250							
19	4250+							

**Table 2: Minimum Guaranteed Off-take (MGO)**

Minimum Guaranteed Off-take per site per month (Overall to be considered on cluster basis, derived from below table).

S. No.	MGO (KWH) / month / site	Maximum Permissible load, KW

If desired, MGO values can be appended in the Table 1 above.

## 5. Solution details:

1. Provide a write up on the solution envisaged (in max. 2500 words)
2. Options available to meet the requirement of load increase / decrease.
3. Type and rating of equipment being used.
4. Single line diagram of the solution

## 6. Safety

RESCO shall be solely responsible to provide and ensure that work is carried out under proper supervision, with all safety requirements, safe apparels, safe tools and relevant statues/laws in force. RESCO shall deploy technically qualified & competent staff to carry out the activities. RESCO should also ensure periodic Rodent/pesticide control for its set up, so as to keep the site safe. Proper Fire Extinguishers / Safety devices to be kept at RESCOs set up.

## 7. Geography for RESCO trial

1. UP-E
2. UP-W
3. Rajasthan
4. Punjab
5. M&G

## 8. Company Profile

Please submit your company profile with details of Turnover, Employees, Assets, Offices, Service Network and Customer base. Also share details of principles & subsidiaries and associate company if any.



## 9. Evaluation Parameters

1. Automation Details
2. Company Size, Credibility
3. Execution Capability
4. MNRE accreditation
5. O&M set-up (Man-force, TOC/NOC)
6. Overall solution concept
7. RET Experience
8. Sustainability of the proposed technology / solution
9. Technical details provided
10. Telecom / Towerco exposure

## 10. Abbreviations

TAIPA	Tower And Infrastructure Providers Association
RESCO	Renewable Energy Service Company
M&A	Merger & Accusation
DoT	Department of Telecommunications
SLA	Service Level Agreement
DG	Diesel Generator
PMS	Power Management System
SMPS	Switch Mode Power Supply
AC	Alternating Current
DC	Direct Current
ATS	Automatic Transfer Switch
IP	Infrastructure Provider
KWH	Kilo Watt Hour
RET	Renewable Energy Technology
Hz	Hertz
FY	Financial Year
V	Voltage
MGO	Minimum Guaranteed Offtake
KW	Kilo Watt
PO	Purchase Order
O&M	Operations & Maintenance
BTS	Base Transceiver Station
MNRE	Ministry of New and Renewable Energy
CEA	Central Electricity Authority
CPCB	Central Pollution Control Board
SMS	Short Message Service
UP-E	Uttar Pradesh-East
UP-W	Uttar Pradesh-West
M&G	Maharashtra & Goa

