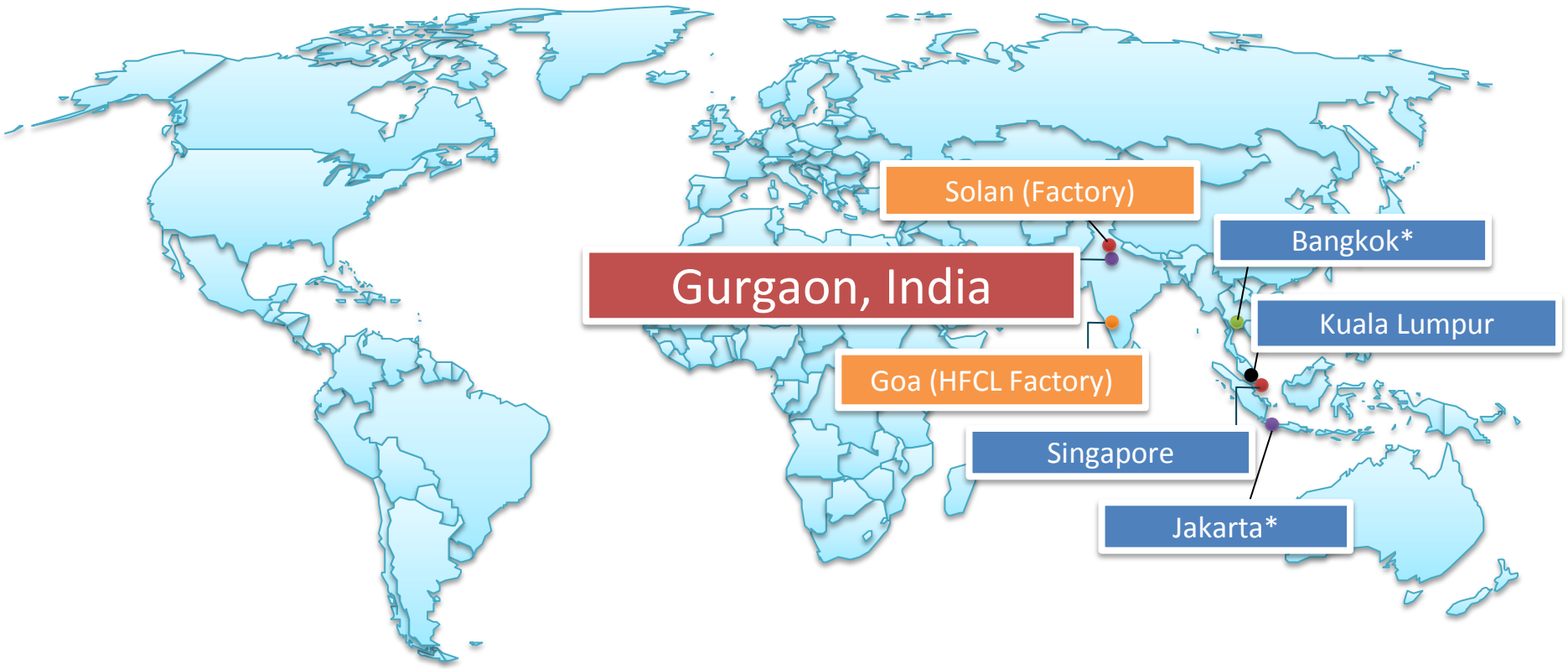


WE MANAGE THE POWER FOR YOU

Our Presence



Gurgaon, India – Head Office

Solan & Gurgaon, India - Factory

APAC Legal Entities – Kuala Lumpur, Singapore, *Bangkok, *Jakarta

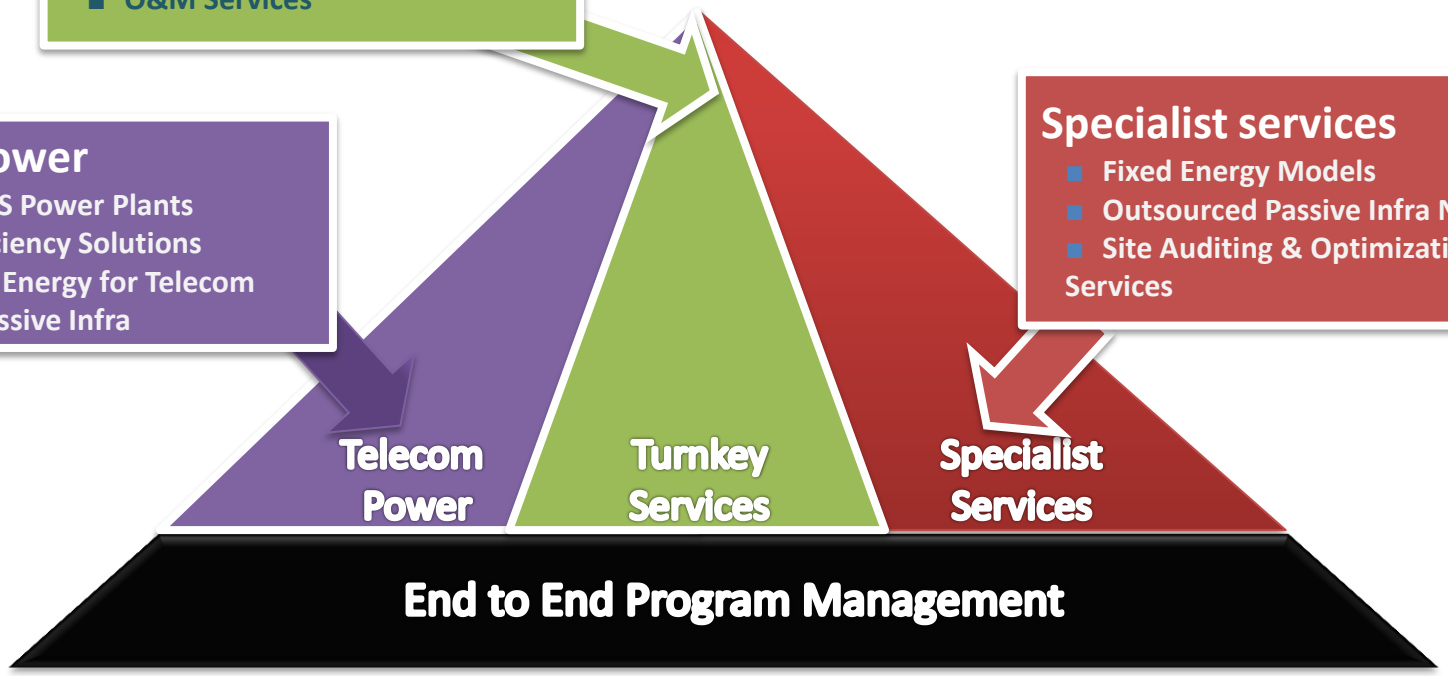
** To be established*

Line of Business

Turnkey Services
- I &C Services
- Green field site build out
- O&M Services

Telecom Power
- AC-DC SMPS Power Plants
- Energy Efficiency Solutions
- Renewable Energy for Telecom
- NMS for passive Infra

Specialist services
- Fixed Energy Models
- Outsourced Passive Infra NoC
- Site Auditing & Optimizations Services



Our services cover all aspects of the value chain

Our Track Record

Summary of our experience....

45,000 + Active AC-DC SMPS Power Plants supplied to various service providers

6,000 + Energy efficiency solutions deployed in tough states of J&K, NE and Bihar

1.5 MW Of Solar off grid sites delivered

900,000 + Ltrs. Of diesel savings achieved / year

At a Glance:

- Power electronics solution provider for 17 yrs.
- Supplied DC Power Systems worth $150M to BSNL India's largest network provider alone
- First & the largest vendor for Bharti Infratel for Energy Savings Solutions at BTS sites
- 1,100 Customer Service Providers world wide
- 15% annual spend on R&D

To date >5,000 sites green energy sites deployed –
making Exicom the one of biggest player in Telecom green energy domain

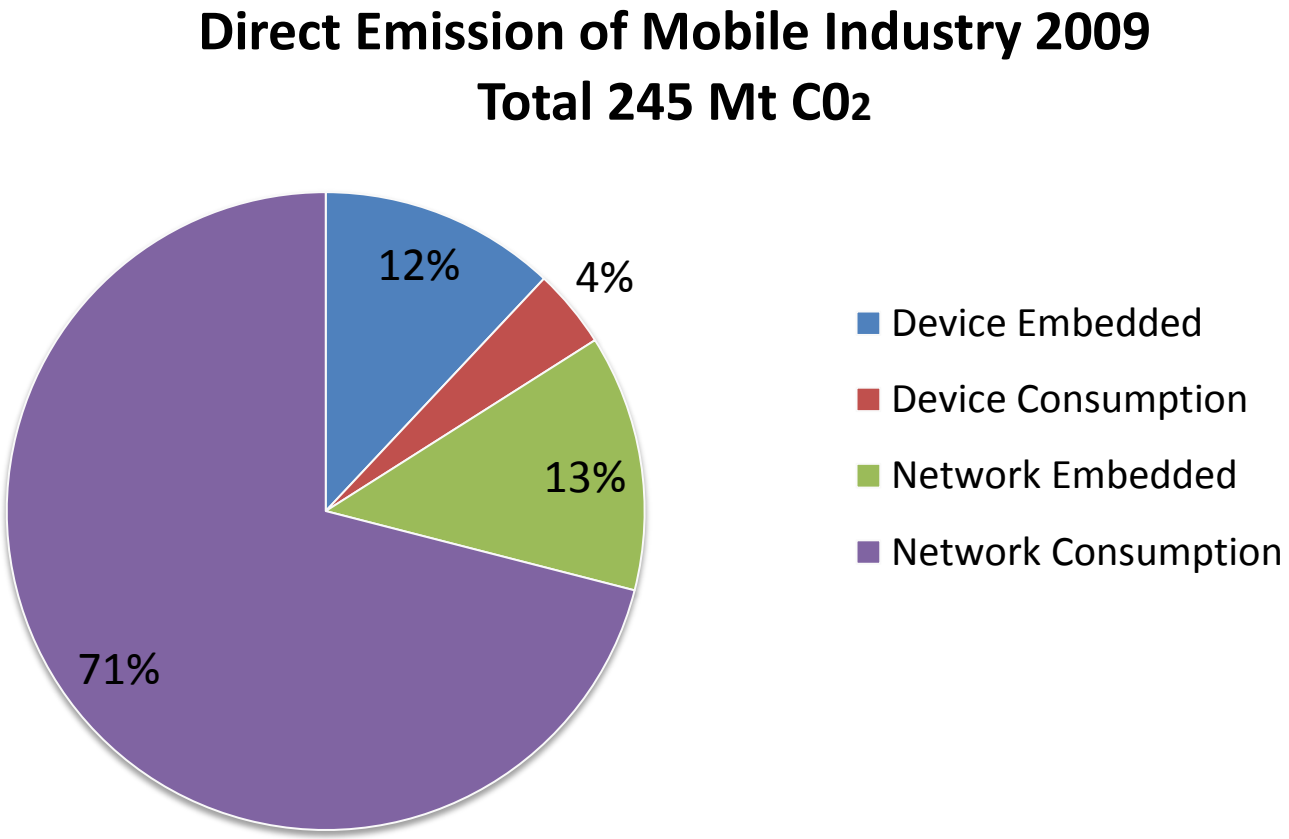

OPEX Model
Our Solutions
Case Study
Our Company

Current Issues Faced by Most Service Providers in Indonesia

- **Poor Site Conditions:** Loose connections, Poor Grounding or broken Neutral, undersized Power Cables, inadequate or ill maintained protections, Power Management Units (By Passed LCUs, Faulty Automation) etc
- **Under Utilization / Non Utilization of available green energy resources and high dependence on DG:** Significant environmental challenges with high air & noise pollution
- **Manual Operation causing low reliability:** BTS sites heavily dependent on Security Guards, Landlords or semi-trained technicians
- **Theft & Pilferage leading to high fuel costs:** This is mainly because of unscrupulous people by running DG in Manual Mode
- **Remote Monitoring:** Manual Audit of Actual Power Consumption as there is no real time parametric monitoring & Fault analysis
- **High Energy Costs:** Energy costs being significant OPEX line item



Why OPEX Model Issues – Carbon Footprint



Network Consumption contributes to 71% of $C0_2$ Emission

source: GSMA Green power for mobile- Procurement model analysis- Capex Vs Opex

Comparative Analysis of Models – Financial Analysis

	CAPEX Model	OPEX Model
Financial Analysis	• Operator has to invest all CAPEX either from its own source or from capital market; therefore financial risk belongs to Operator • IRR and NPV of Green Power deployment is significantly more attractive • For mass deployment, CAPEX investment is a barrier since it may require hundreds of millions of dollars.	• Operator does not have to invest for CAPEX, therefore no financial risk to deploy green power • IRR and NPV increases for telecom site since site OPEX reduces • Since mass deployment increases the business opportunity for ESCO, it comes more viable to invest.

source: GSMA Green power for mobile- Procurement model analysis- Capex Vs Opex

Comparative Analysis of Models – Operational Analysis

	CAPEX Model	OPEX Model
Operational Analysis	• Regular day-to-day site operation is the responsibility of the operator • All cost related to site operation is incurred by the operator • Site uptime and SLA maintenance is typically on the operator. If it fails the Operator bears all financial loss/penalty • OPEX for technical operation is low • OPEX for site operation is high	• Site operation is a responsibility for the ESCO; therefore Operator does not need to deploy resource for site operation • Operator pays only based on energy usage, a pre-agreed rate, therefore operational cost is forecast-able and comparatively lower than DG based energy cost • SLA and Uptime is the responsibility of the ESCO. If it fails, the ESCO bears the penalty

source: GSMA Green power for mobile- Procurement model analysis- Capex Vs Opex

Comparative Analysis of Models – Strategic Analysis

	CAPEX Model	OPEX Model
Strategic Analysis	• All asset of green power belongs to the operator, therefore increases portfolio & branding value of the organisation • Maximise utilisation of existing assets • Easy to cope with variable changes • Multi 3rd parties' engagement makes the model complex for operator to handle at last mile • Increase debt for organisation	• Easy to control last mile performance since the ESCO is the only last mile partner • Full benefit of GHG emission reduction • Increases complexity of state management • Not so easy to cope with increased power requirement on a regular basis • Reduces the risk of unforeseen energy OPEX due to market change and consumer inflation

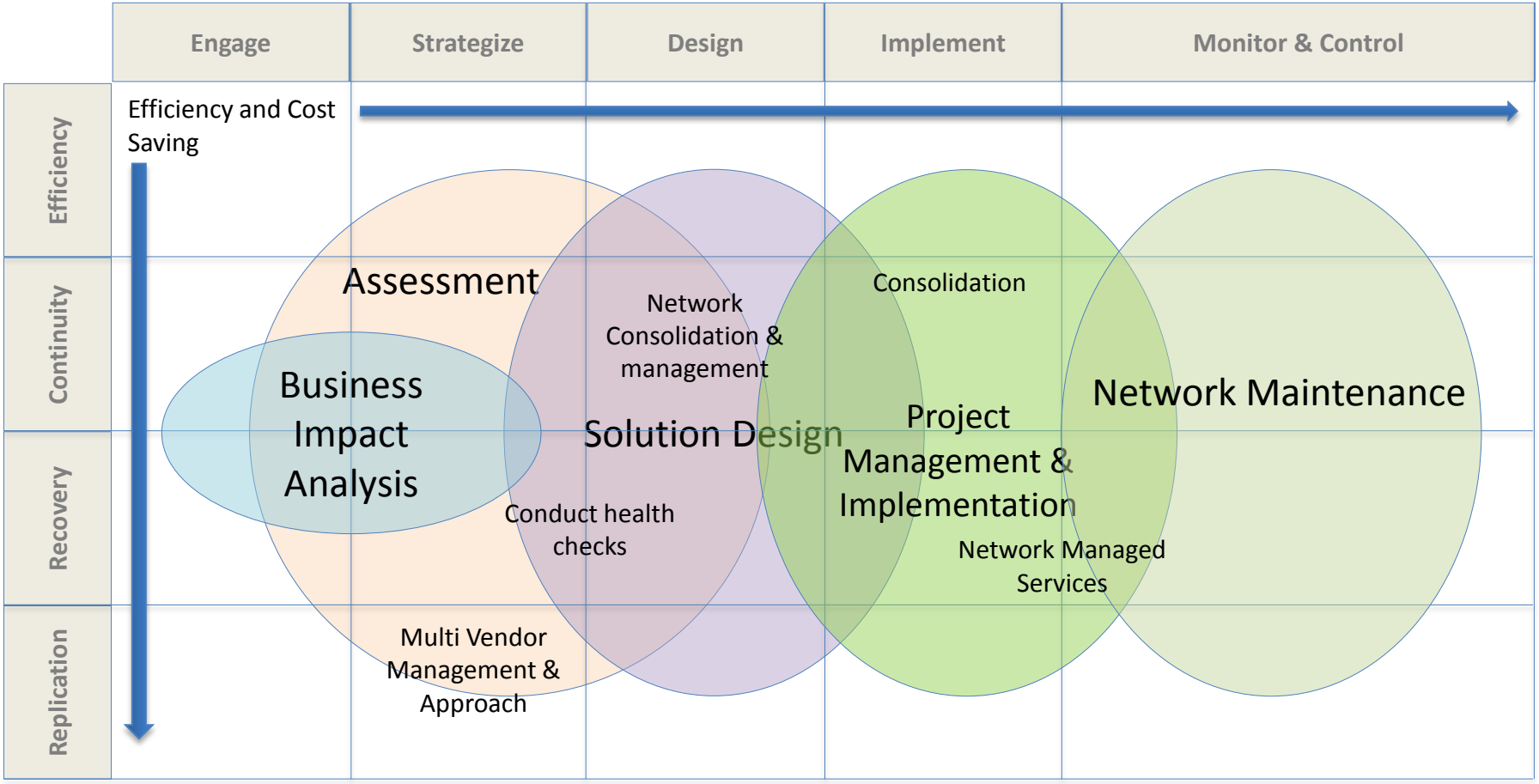
source: GSMA Green power for mobile- Procurement model analysis- Capex Vs Opex

OPEX Model vs. CAPEX Model

Activity	CAPEX Model	OPEX Model
Equipment purchase	Operator	Exicom
Rollout of equipment & project management	Operator	Exicom
Risk related to rollout	Operator	Exicom
Site maintenance & operation	Operator	Exicom
Assurance of site up-time	Operator	Exicom
Site monitoring and Security	Operator	Exicom
Remote alarm and performance data collection	Operator	Exicom
Risk of theft and vandalism	Operator	Exicom
Payout to 3rd Party	-	Operator

Benefits of OPEX Model

Help our clients achieve greater business efficiency and business continuity with managed services



Fixed Energy Cost – Value Proposition



Pay by usage (implementing energy meter and charge by usage)
Eliminates present Inefficiencies, poor utilization, security concerns

Visibility over your energy costs
Reduces business risks and volatility

Assured reduction in OPEX
Over a long term period

Allows Telco Providers to focus on their core business
Power infrastructure to "Power Specialists"

Maintenance of required Service Level Agreement's (SLA) and network uptime

Reduction of carbon footprint
Creation of more environmental friendly infrastructure

Common Power Equipment for multi user
In Tower Sharing


OPEX Model
Our Solutions
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Value Proposition :
What Exicom can offer









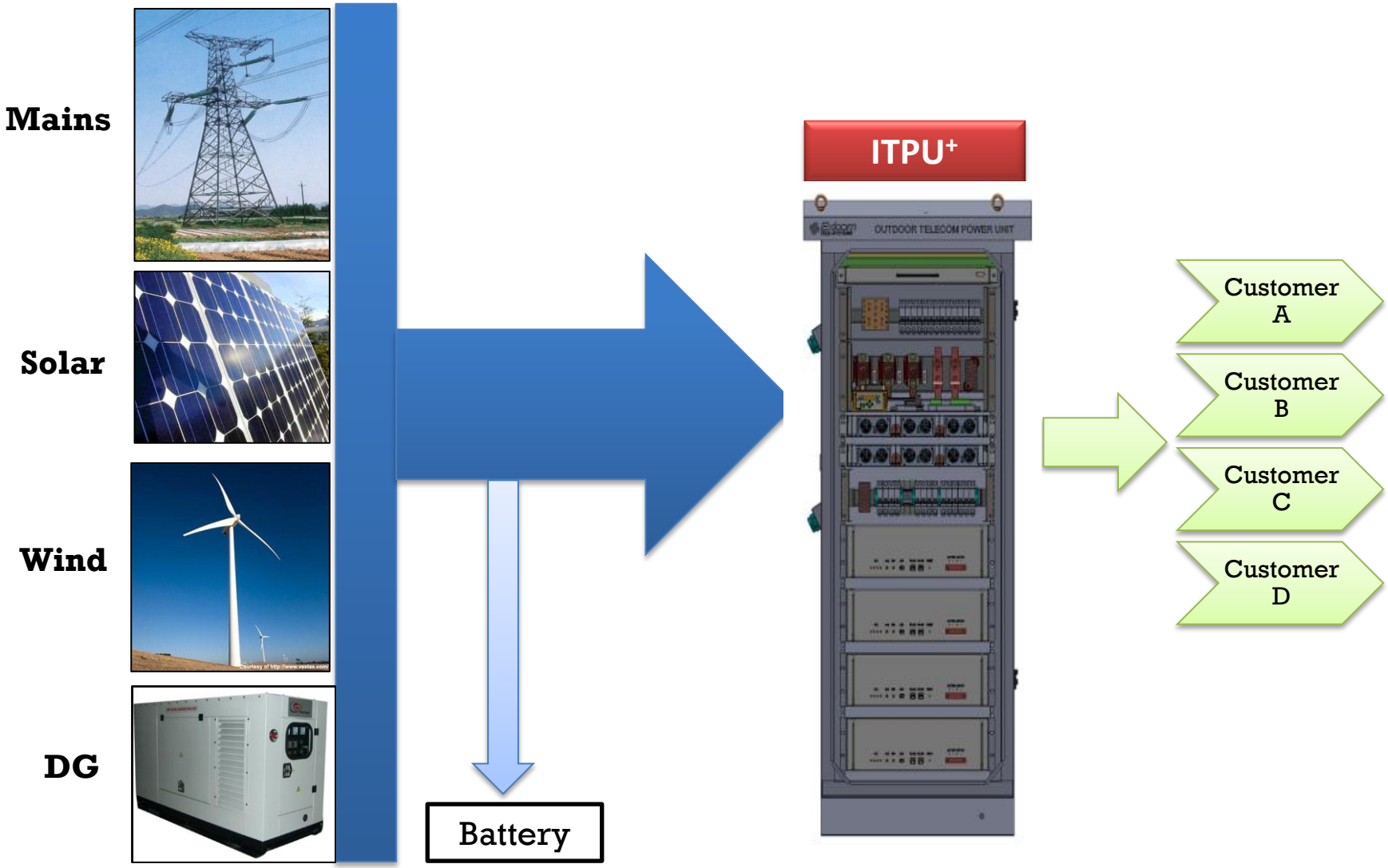
Optimize Total Cost of Operation (TCO) on Power, Infrastructure and end-to-end Service Management

This allows Telco to reduce focus from passive infra and focus on core business

Reduce carbon footprint

Leverage our heritage in rolling out high profile projects

Pay per use – DC Power Exicom's Hybrid ITPU



Smart Site Solutions - Beyond just Hybrid Solutions

Best utilization of 3 phases / Mains Power
High efficiency rectifiers
Automated DG Control
Energy Metering
Environment control - reduced Opex

Mains



Solar



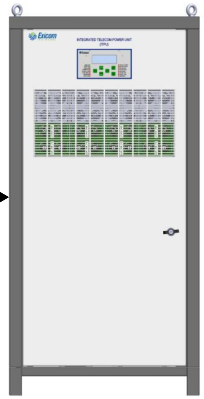
Wind



DG



ITPU+



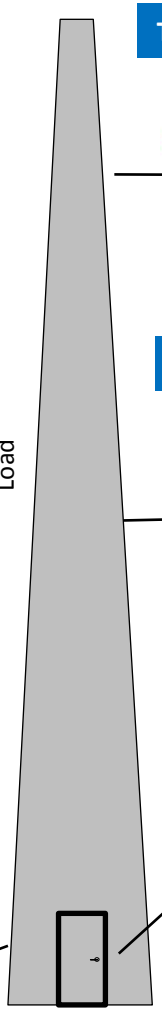
-48 VDC

Load

Wireless fuel monitoring of DG / Start –Stop / and alarms, i.e tamper proof



Batteries



ToC – Tower Operating Center for passive infra



RME

Remotely configure & Manage complete passive infra
Based on GPRS or IP
Optional Managed "ToC" services

GPRS / IP

Monitoring Network

Security Surveillance



Remotely Managed DVR
Access System controller
Small Factor, PoE Powered Device

PoE



Switch / Router

Monitoring Network

Access Control



User Authorization
Centrally Managed
Alarms on unauthorized access
All signals sent to monitoring centers

Asset Management

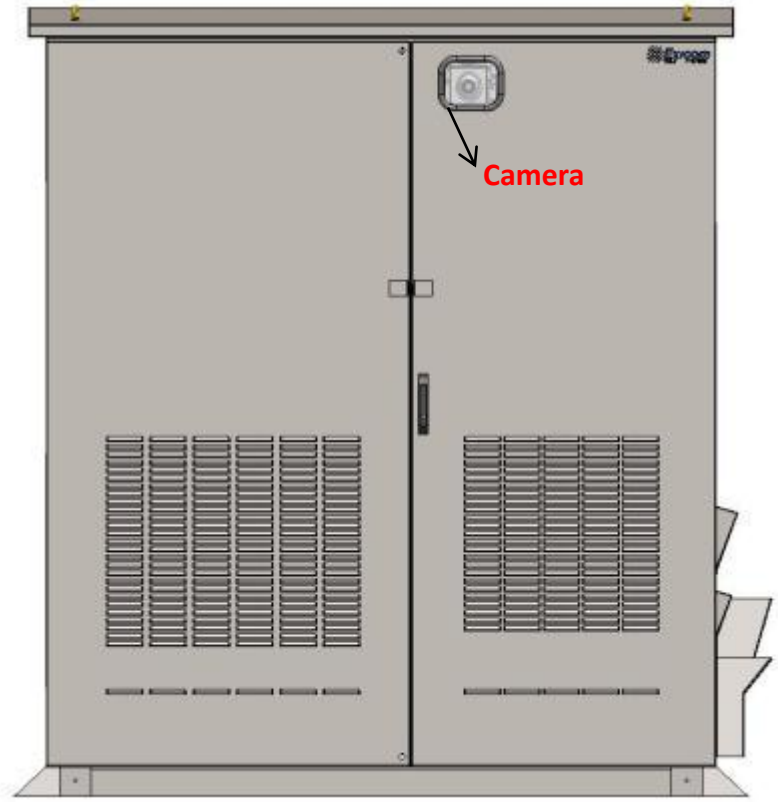
Asset management for real time inventory information



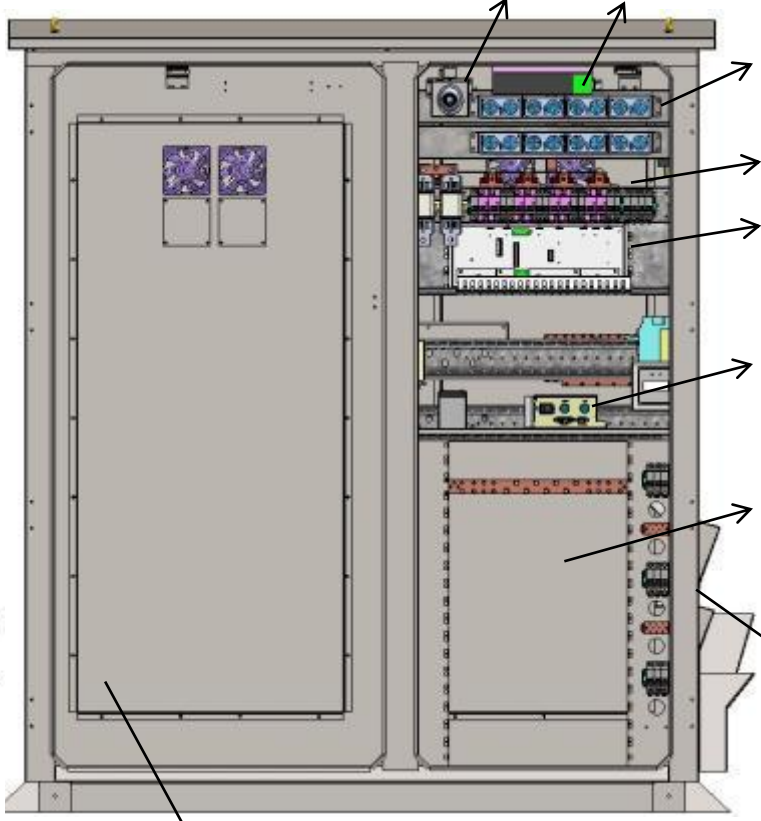
Energy Management System (EMS) Building Blocks Solution – Double Door Cabinet

Complete Power Solution & energy management with Battery enclosed in a simple innovative packed structure

View of Cabinet with door closed



View of Cabinet with door Opened



Camera

Electromagnet lock through SMS

48VDC rectifiers / Solar Charge controllers or a combination

AC Interface Circuit

Supervisory Controller & NMS

DG Battery Charger and DG Automation

Space for Network equipment up to 40U (can be forced cool or AC cooled)

Double skin cabinet for high insulation from solar radiation / ambient heat

Space to put battery up to 600AH or 1200AH (option of DC Aircon or fan cooled)


OPEX Model
Our Solutions
Case Study
Our Company

Case Study with Viom

- Site specifications 2x ~1.0KW outdoor BTS, Outdoor M/W and a 15 KVA DG. Exicom did end to end work related to power infra, which mainly are:
  - 3.5 KW solar panel installation and its structure
  - 600AH battery in an outdoor cabinet with innovative economy cooling solutions
  - ITPU+ with required rectifiers, solar charge controllers and all necessary switch gear, NMS functionality
  - Comprehensive O&M of the cell site



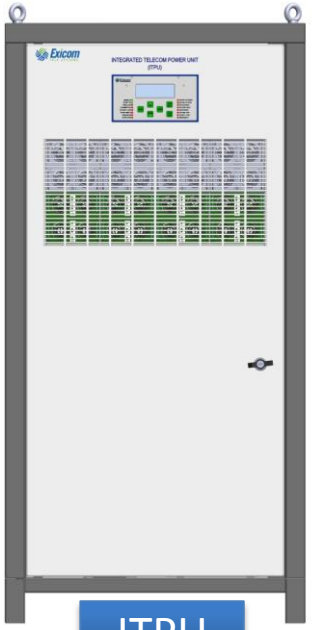
- Key highlights of operation are:
  - ***Completely unmanned site operation**. All relevant data received through NMS*
  - *DG running under 5.0 hours / day for more than 6 months now*
  - *Higher utilization of solar power because of Exicom's highly efficient intelligent solar charge controllers to harness energy from dawn to dusk with MPPT algorithm*
  - *Reduction of carbon emission and noise*

Exicom TELE-SYSTEMS

viom NETWORKS

Case Study with Bharti Infratel

- Site specifications
  - ~2 to 4 BTS of ~1-1.4 KW each, M/W , 15 / 25 KVA 1 Phase DG
  - 2 Aircond of 1- 2 ton each in an indoor site.
- Exicom's scope entails:
  - Supply of ITPU with environment control, optimum power utilization logic for Aircond, DG control unit etc
  - I&C of ITPU, complete O&M as per SLA
  - Integration with Bharti's NoC and continuous monitoring of imp data
- Key highlights of operation are:
  - ***DG running reduced by more than ~30%***
  - *Site automation from lot of manual intervention in legacy sites*
  - *Complete DC & AC energy metering for billing purpose*
  - *Reduction of carbon emission and noise*



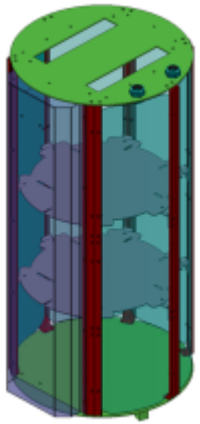
ITPU

Exicom TELE-SYSTEMS

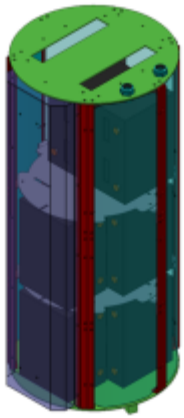
Bharti Infratel Limited

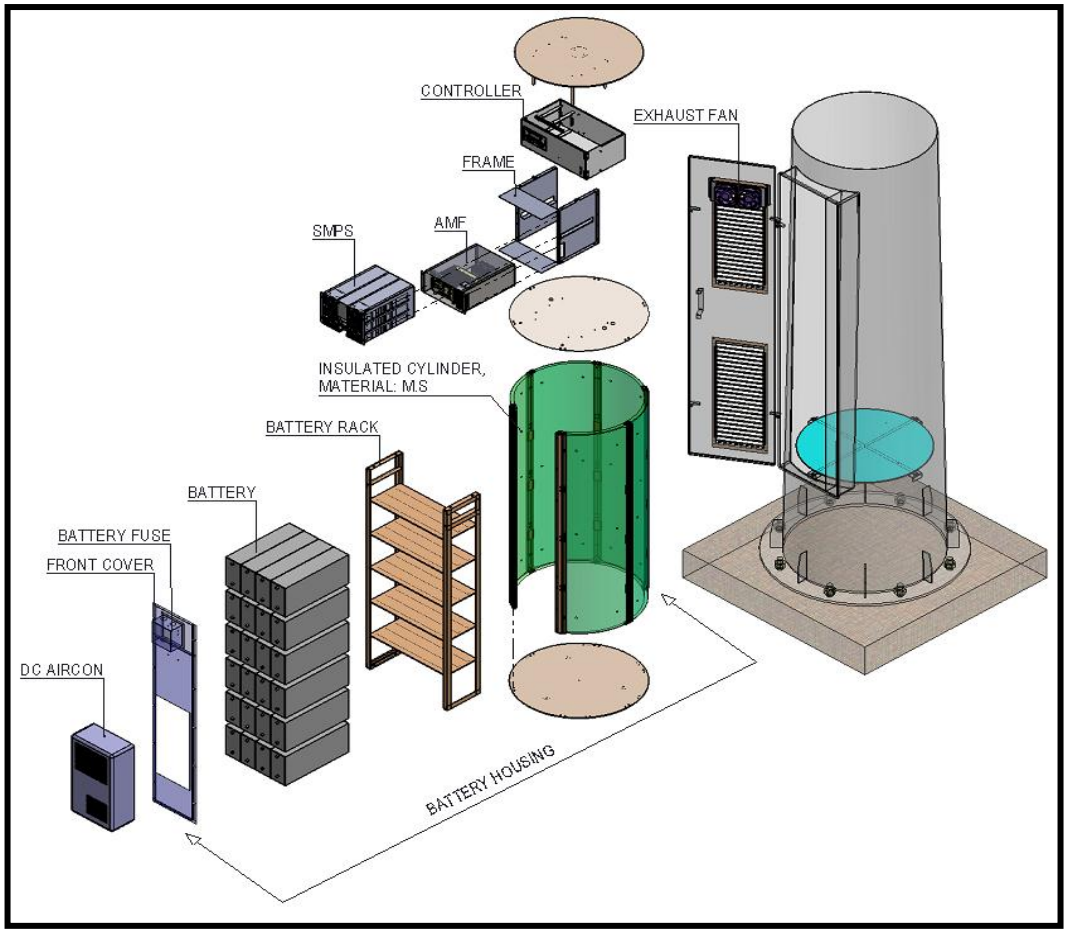
Concept Study for 4G Rollout NO GENSETS Used

Battery compartment without battery



Battery compartment with battery





Outdoor Field POC's for 4G Network

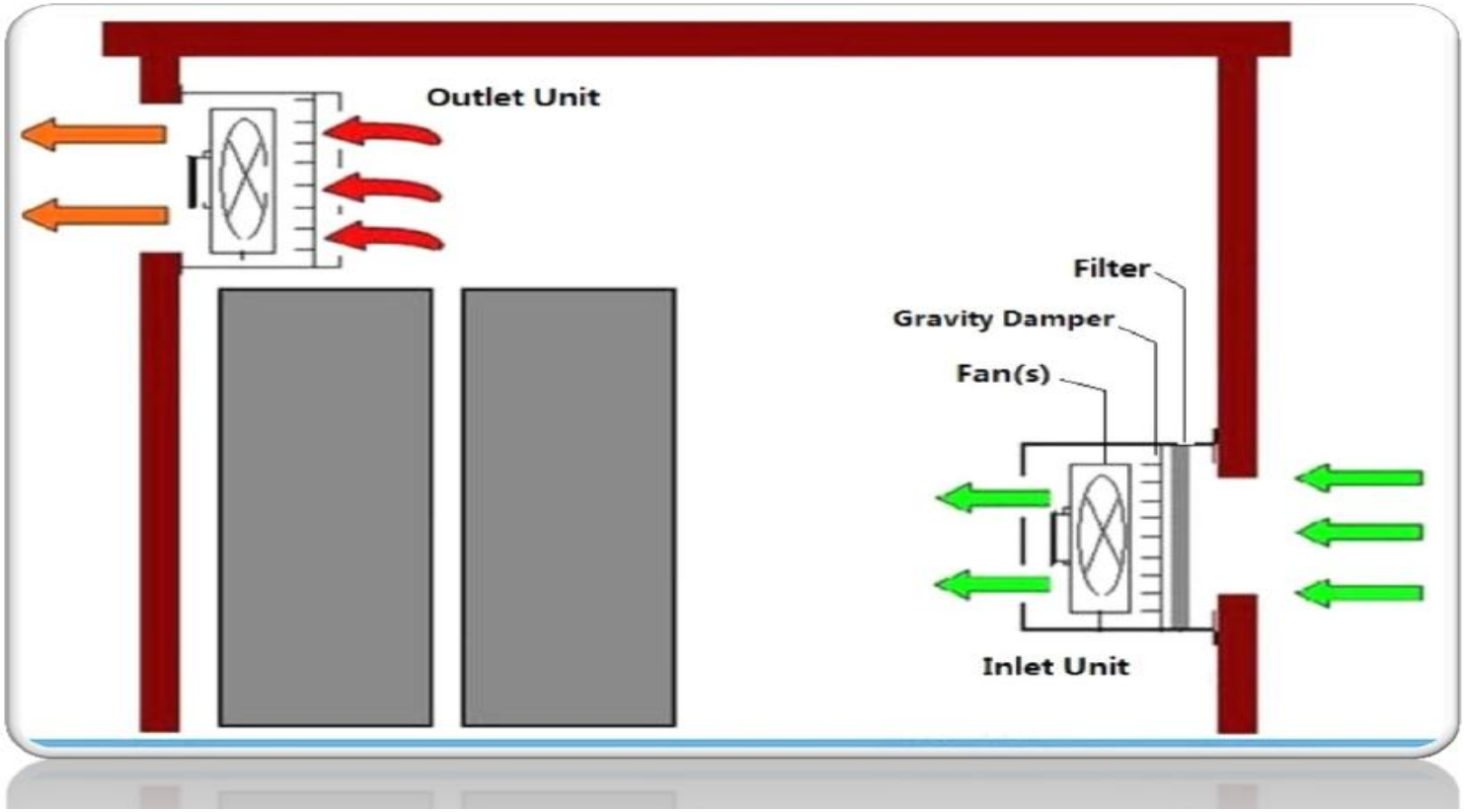




Green Technologies – Free Cooling

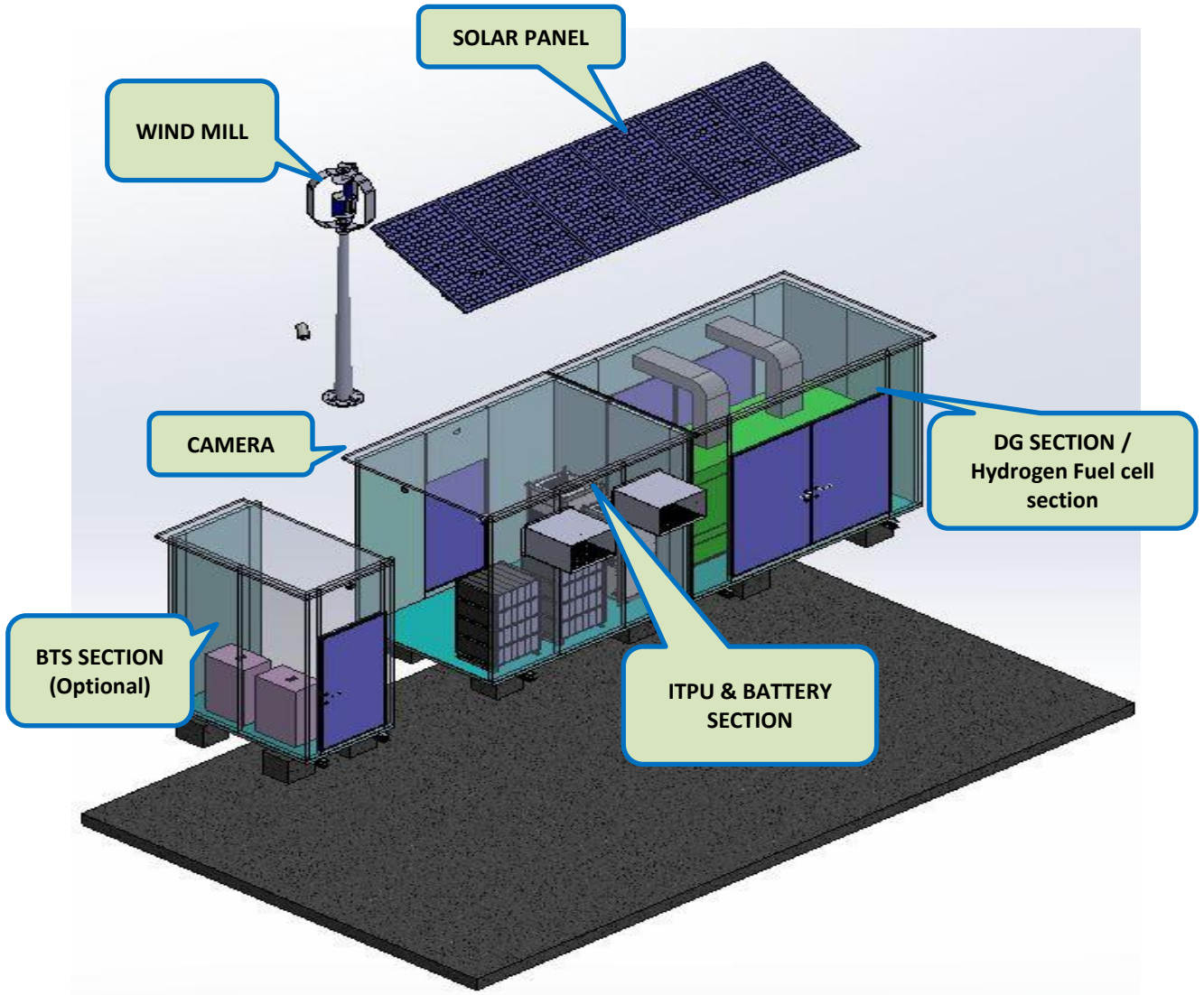
BTS and Power conditioning equipment in the shelter generates a lot of heat, which is thrown away by keeping multiple Air Cons. Typically, 1/3rd power is drawn by the cooling system and 2/3rd by telecom and power equipment

Outlet



Inlet

Green Solutions: Packaging of Solution for BTS Sites (For Illustration Purpose only)

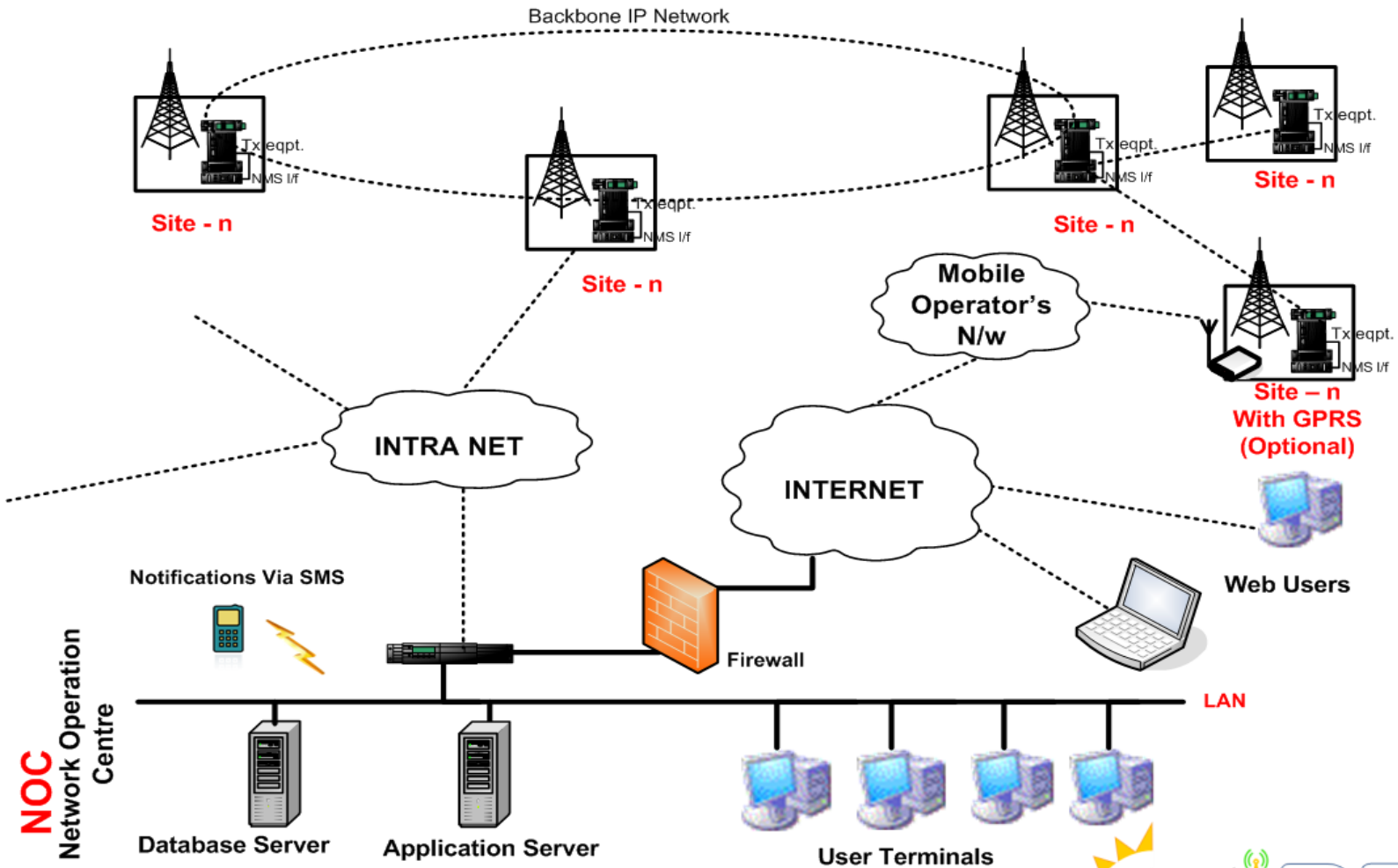


Key Technologies – Network Management

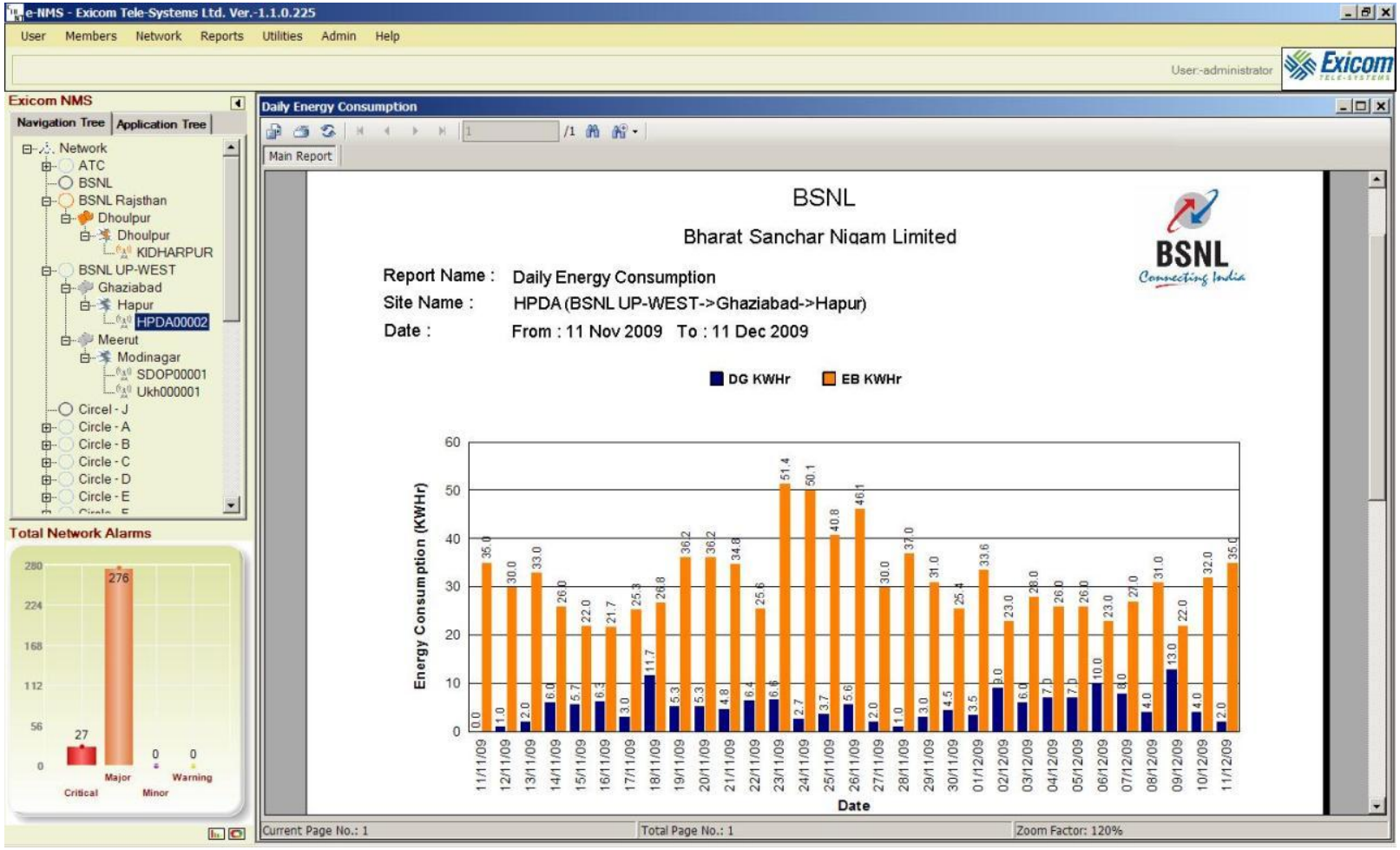
- ✓ In house Network Management System
- ✓ Standards based, Layered architecture
- ✓ Suitable for BTS infrastructure & Power Plants.
- ✓ South Bound Interface to Nodes over HTTP, SNMP and proprietary protocols
- ✓ Supports IP based DCN. For BTS sites also supports SMS / GPRS
- ✓ Java based server, OS independence (Linux / Unix / Windows)
- ✓ Flex based Web client for Rich User Interface
- ✓ Single server solution supports up to 5K sites
- ✓ Root / Leaf server architecture for bigger networks (20K)



Representative NMS Network

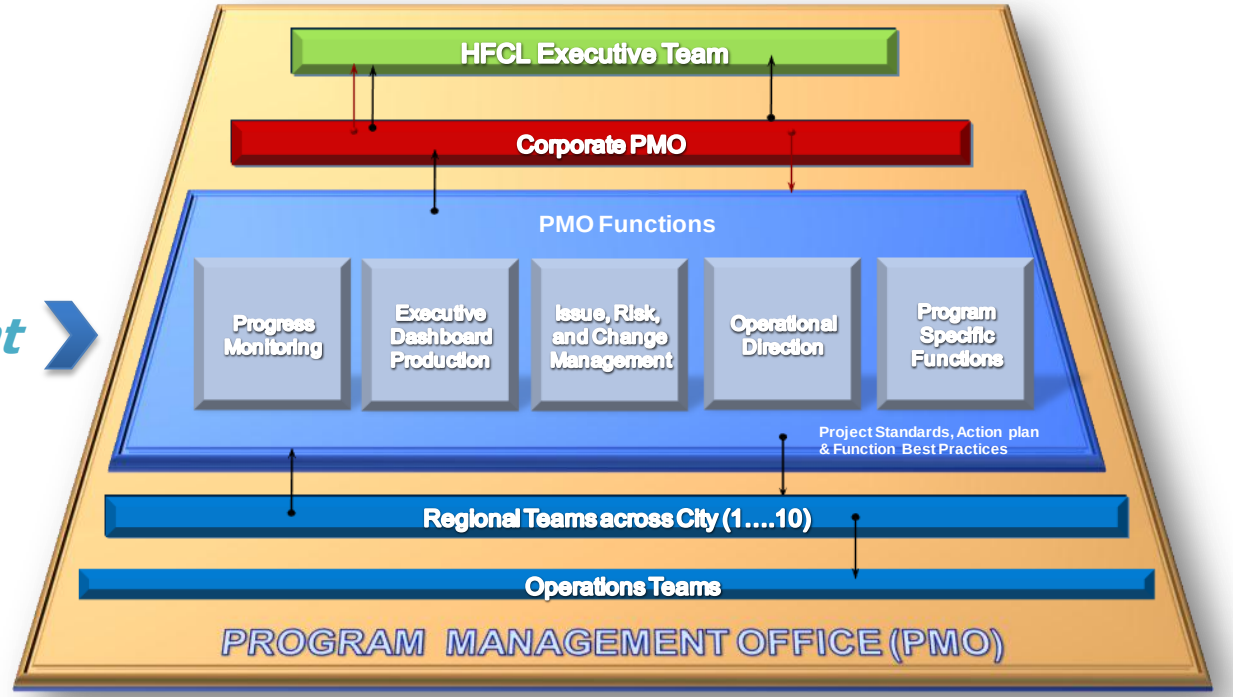


“ExiNMS” – Energy Consumption Reports



Project Execution – Our Critical Success Factor

Program Management Approach



Program Tracking & Monitoring

Critical Activities

Critical Activity	Dependency	Target Date as per Deadline	Current Feasibility State
RF Planning	A	- DD-MON	Y
Vendor Short-listing	B	- DD-MON	R
Site Short-listing & Finalization	C	- DD-MON	R
Vendor Short-listing & Finalization	D	- DD-MON	R
Site Feasibility Completion	E	- DD-MON	Y
Construction Completion	F	- DD-MON	R
Electrical Work Completion	G	- DD-MON	R
Site Ready for Hand-over	H	- DD-MON	R

Illustrative

R Risk for launch Y Needs focus G In progress

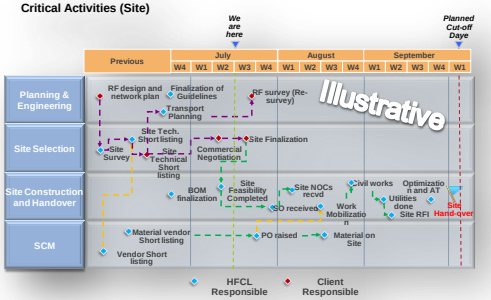
Overall Status – Corporate

Functions	Region A (Target date)	Region B (Target date)	Region (Target date)	Region (Target date)	Overall (Target date)
Planning	Y	G	G	G	G
Rollout (Active)	Y	G	R	G	G
Rollout (Passive)	R	R	G	G	G
SCM	Y	Y	Y	R	Y
Support Functions	G	G	G	G	G

Illustrative

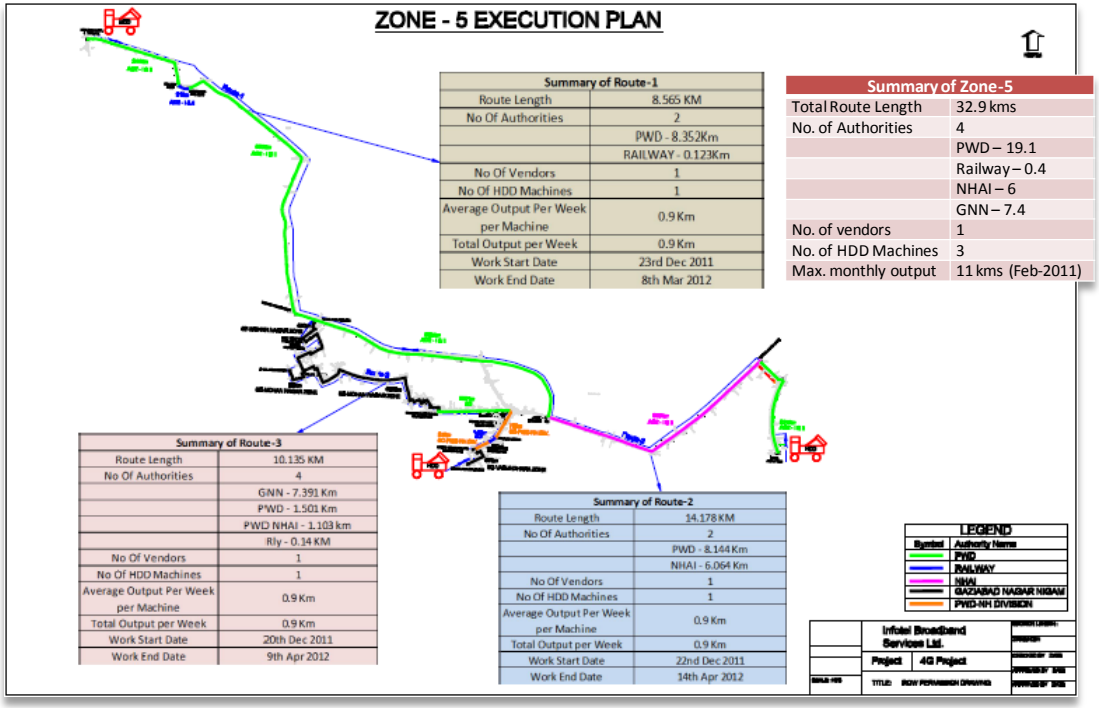
R Risk for launch Y Needs focus G In progress

Critical Activities (Site)

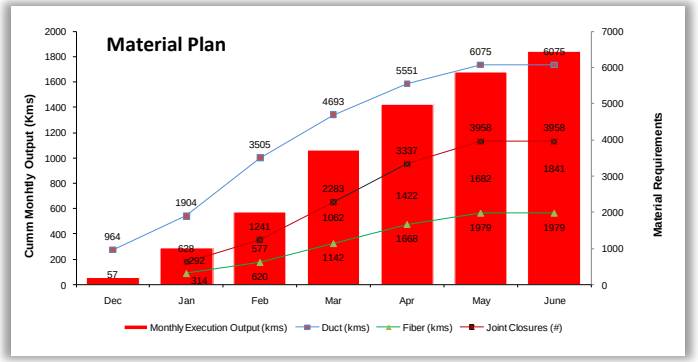


Illustrative

Our Strength – Planning



Our execution success, relies on our ability to plan and forecast; and thereby manage the peaks and turfs during the project execution phase

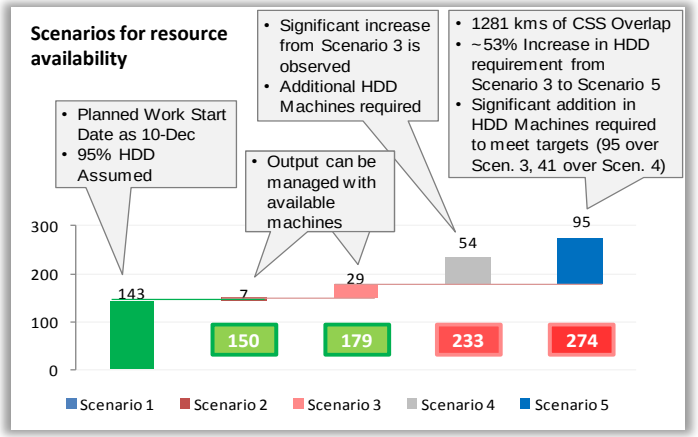


ROW Authority Wise summary – Zone 5

Authority	Kms	ROW Appln Date	ROW Avlbl date
PWD	19.1	30-Nov-11	20-Dec-11
GNN	7.4	30-Nov-11	20-Dec-11
NHAI	6	30-Nov-11	15-Jan-11
Railway	0.4	15-Dec-11	30-Jan-11

Execution Output summary

Route	# HDD machines	Monthly Output					
		Dec	Jan	Feb	Mar	Apr	May
1	1	1.1	3.4	3.6	3.9	2.1	
2	1	1	3.9	3	0.7		
3	1	1	3.3	4.5	1.3		
TOTAL	3	3.1	10.6	11.1	5.9	2.1	




OPEX Model
Our Solutions
Case Study
Our Company

Exicom's Key Clientele

OEM Vendors

Nokia Siemens Networks

ERICSSON

HUAWEI

ZTE中兴

NORTEL NETWORKS

Private Operators

TATA DOCOMO

Bharti Infratel Limited

AMERICAN TOWER

airtel

AIRCEL

CONNECT
THE SMARTER WAY TO CONNECT

TowerVision
Infrastructure Sharing

VIDEOCON
Experience Change

viom NETWORKS

Public Sector Enterprises

BSNL
Connecting India

MTNL

रेलटेल
RAILTEL

गेल
GAIL

भेल
BHEL

एनटीपीसी
NTPC

पावरग्रिड

इंडियनऑयल
IndianOil

हिन्दुस्तान पेट्रोलियम
HP

Our Vision

An innovative & customer's focused company fully integrated from designing, manufacturing to turnkey services for all types of Telecom Power Solutions

Has been a leading supplier of end to end telecom infrastructure and power solutions. Products include end to end solutions for BTS cell site to large telecom exchanges to renewable energy for Telecom

Commands customer base of various big Indian & global telecom operators, Tower Infrastructure companies , OEM's and various PSU's

Excellent customer support network and project offices on pan-India basis. World class certified manufacturing and R&D facilities accredited with ISO 9001-2000,ISO 9002 and ISO140001-1996

Vision: To enable a CO_2 neutral energy solution for our customers with an attractive CAPEX and OPEX value proposition

Mission: To be the one of the most preferred brand in Telecom space



Manufacturing Facilities



Our GOAL is highest Customer Satisfaction!

- ➔ 4.5σ Quality,
- ➔ On-time Delivery,
- ➔ Attractive Costs

- Nestled in the pollution free surroundings in Solan, H.P. , with a backdrop of Himalayan mountains, is located Exicom's modern manufacturing facilities equipped with:
  - Fully automatic SMT assembly with In-Circuit testers capable to produce RoHS complaint products
  - Automatic Test Setups
  - Climatic test chambers
  - Dedicated trained staff (250 people with 50 engineers)
  - The Company has fully documented quality system accredited to ISO 9001 standards. All processes and important functions including Marketing, Engineering, Documentation Procurements, Production, Inspection & Testing and Dispatch are covered by SAP ERP



THANK YOU