Infrastructure management service

Paolo Gemma

www.huawei.com

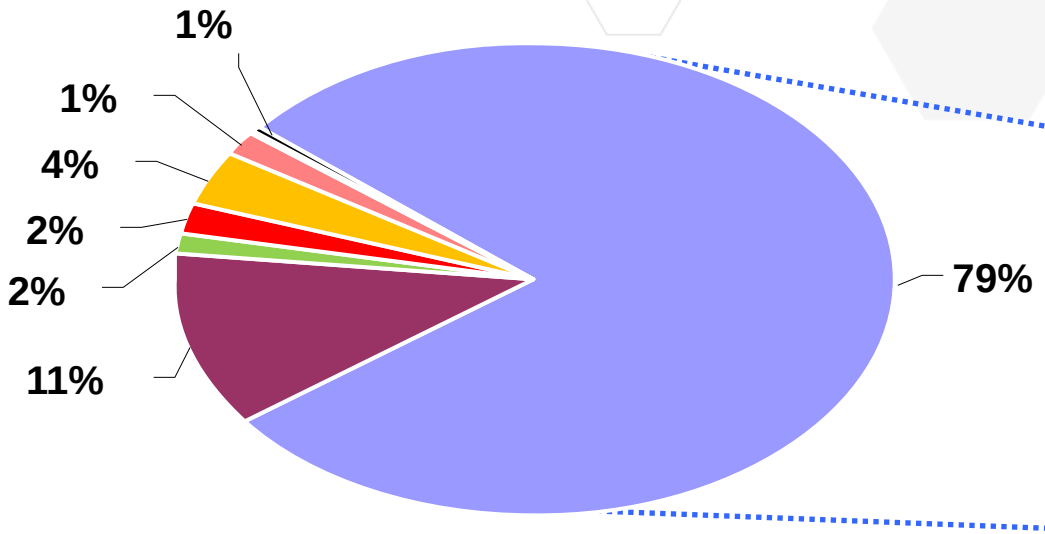
HUAWEI

SUMMARY

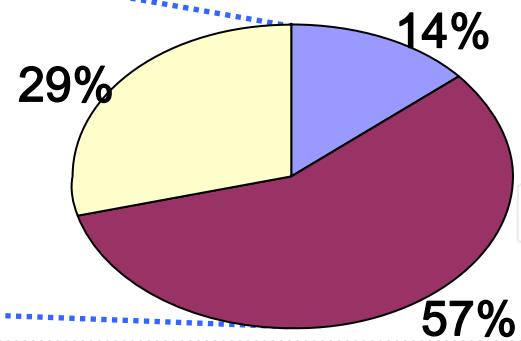
- MANAGED SERVICE PROPOSAL
- ENERGY PROPOSAL
- MONITORING PROPOSAL

Traditional OPEX Analysis

Existing network analysis of an operator from Africa :



OPEX Breakdown



- Field Maintenance: 79%
- Others: 2%
- Vehicle Expenses: 4%
- Training: 1%
- Salaries: 11%
- General Expenses:2%
- Travel & Ente: 1%

- Generator Maintenance Costs: 14%
- Generator Fuel Fee: 57%
- Field Maintenance Service Fee: 29%

Main reason of high OPEX: High fuel consumption & frequent maintenance cost of D.G.

Consultant Service For Network Power Ecosystem

Improve the operational indicators, performance and quality

Reduce investment, cost and energy consumption

Increase the revenue

Diagnosis



Energy supply running data analysis
Customer operating data analysis (Energy payment)
Problem identification & determination

Design



Customer profitability and operating model design
Network construction and project design
Product configuration and customized development

Optimization



Network optimization, ensure the healthy operation
Spare parts, maintenance and professional services
Other value-added services

Turnkey



Product manufacturing, supply
Engineering design, installation, and training.



Diagnosis, Design &Development, Verification& Delivery, Optimization

Field Maintenance Managed Site Power Service

Product

Managed Site Power Service

Services

D.G & Battery Hybrid Power System

Power 1000 D.G & Battery Hybrid
Provide customized model to meet multi Scenario
Special designed battery suits telecom requirement
KPI report /Remote upgrade

Engineering Service

Site evaluation
Engineering design
Site Supervision
Installation & Commissioning
Acceptance
Cutover

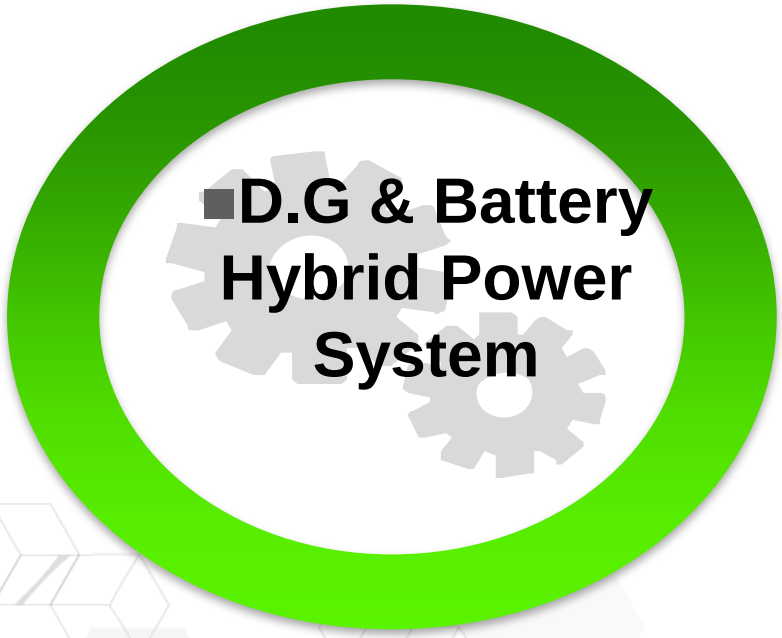
Facilities & Hybrid Power Maintenance(Telecom Option)

Power 1000 D.G & Battery Hybrid Maintenance
D.G maintenance
Air-condition maintenance
Shelter maintenance

Refueling Service

Purchasing fuel
Fuel transportation
Fuel storage
Refueling at site

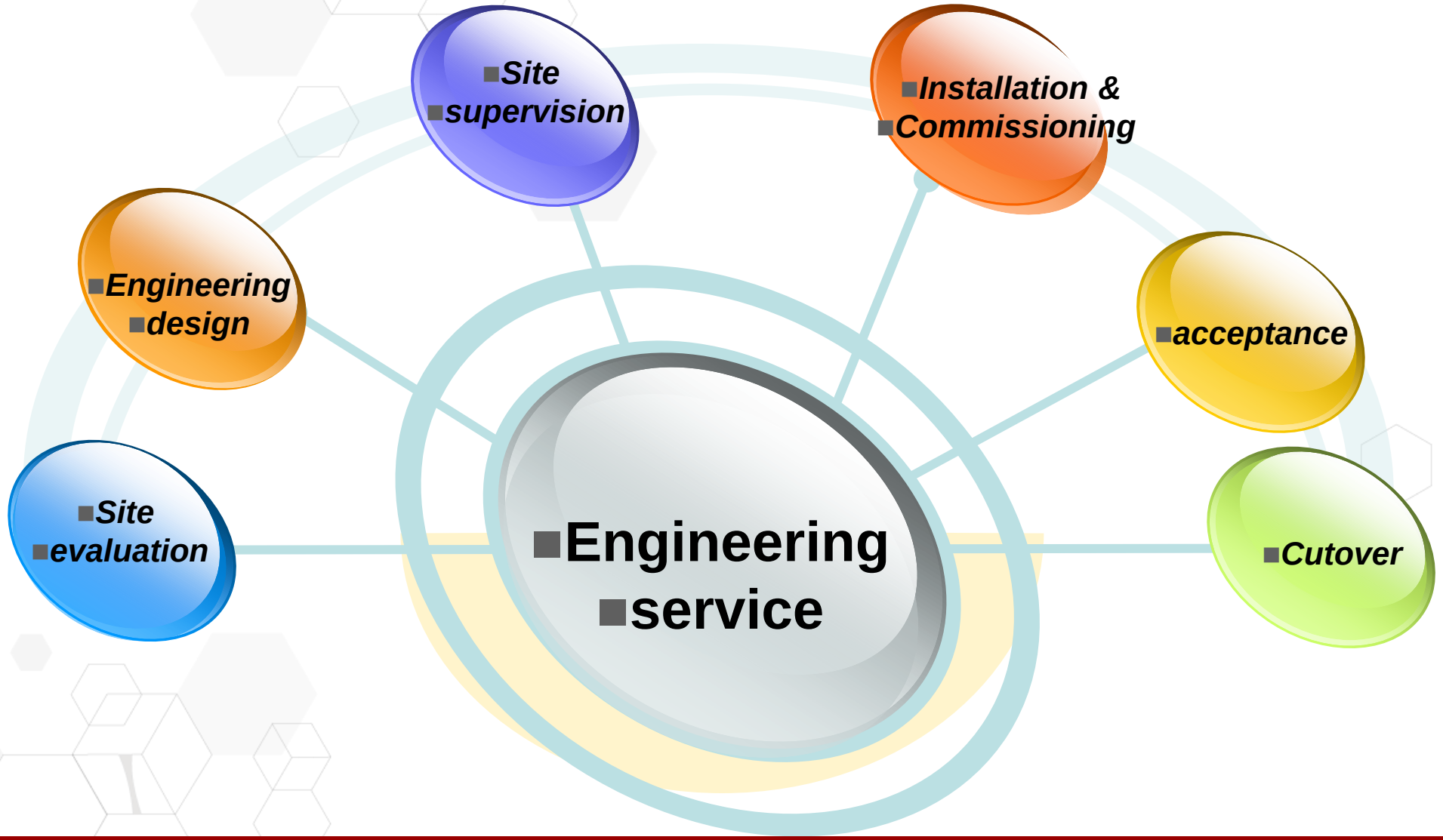
Huawei D.G & Battery Hybrid Power System



- Power1000 D.G & Battery Hybrid
- Provide different battery for different scenario(DCB,FCB,ACB)
- Real-time site monitor system
- KPI report/ remote upgrade

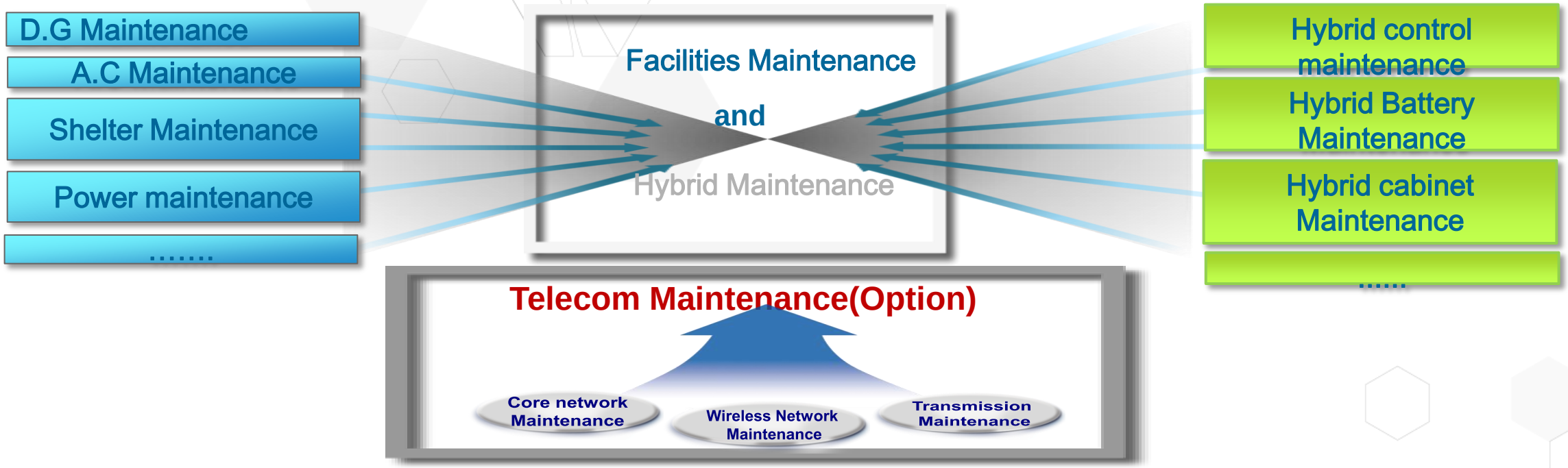
Provide Customized Battery for different Scenario to suits telecom requirement

Engineering Services



We provide comprehensive and competitive engineering service

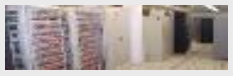
Facilities & Hybrid Power Maintenance service



Managed site power service offers maintenance for the operator's network in accordance with the predefined scope of service, such services include Facilities with Hybrid Power preventive maintenance, corrective maintenance and planed maintenance.

Telecom filed maintenance service is option by customer requirement.

Telecom Equipment(Option)



Core network Maintenance



Wireless Access Network Maintenance



Microwave Maintenance

Facilities and Hybrid



Shelter Maintenance



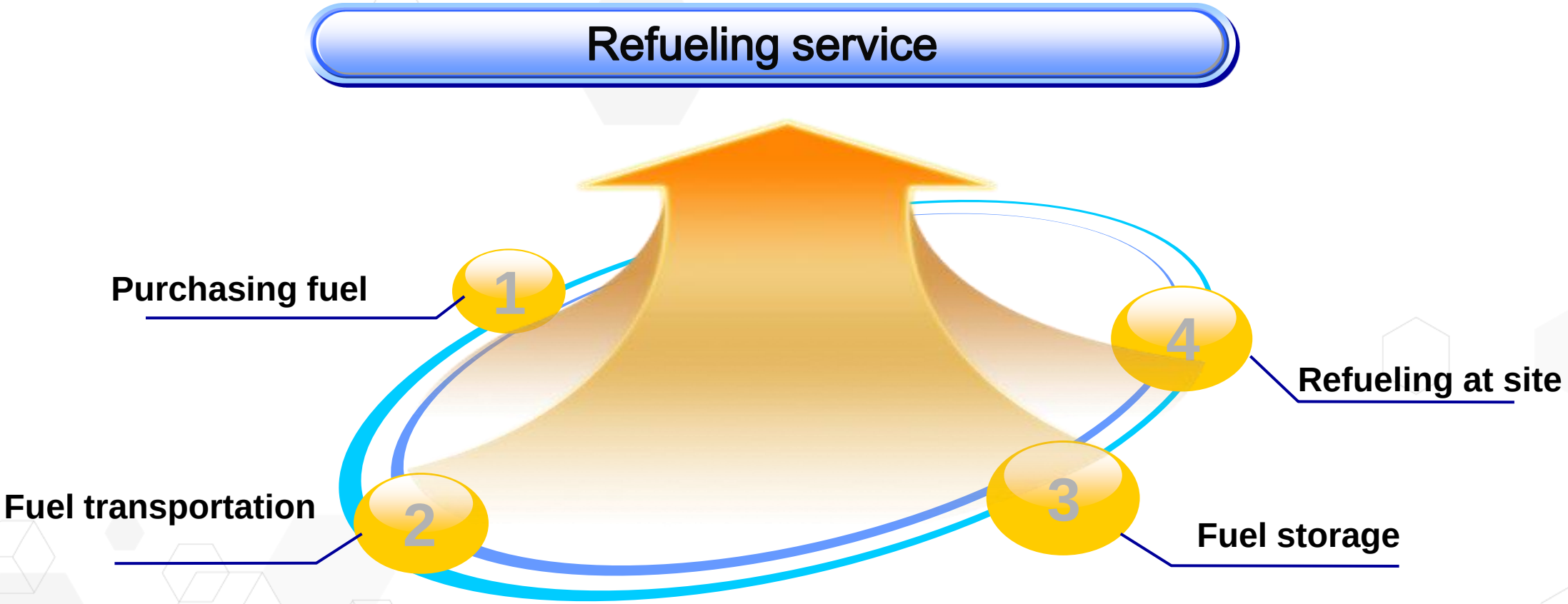
Site Generator Maintenance



Power & Battery Maintenance

… …

Refueling Service



Help operators to ensure the energy supply to site

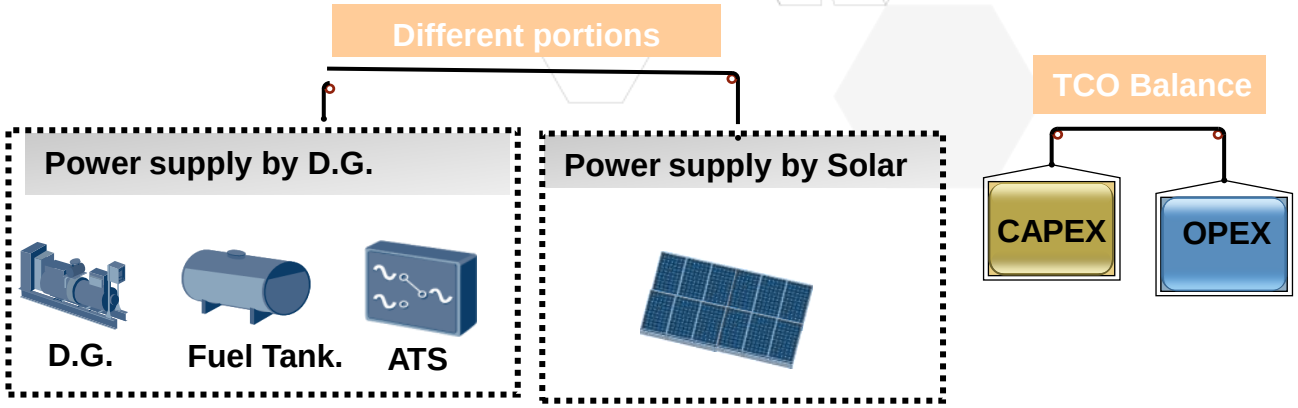
Example High Level Responsibility Assignment Between parties

	Network Survey and Solution	Capex investment and Deployment	Acceptance and Operation
Customer	Setup joint team to implement survey Provide sufficient data Approve propose solution	Purchase Hybrid system Approve Engineering plan Acceptance	Manage and cooperate service delivery Payment for service Bear fuel cost of sites
Huawei	Setup joint team to implement survey Analyze network and propose solution	Supply Hybrid systems Project management System engineering and integration	Provide professional service Reporting
Deliverable	Agreed solution	Deployed Hybrid Systems	OPEX Savings Improved Network Quality

Benefits

OPEX saving and predicable	reduce fuel cost and relevant maintenance cost Huawei takes on E2E responsibility, and the operating cost are more predictable
Reliable and qualified service	Leverage professional skills and global experience to provide reliable service. Assurance of network availability
Focus on core business	Few resource put in field operation and focus on core business enhance end-user satisfaction Release complicated network maintenance
Green Solution	less impact on environment due to less fuel consumption Low generator running time, reliable battery, and good quality facility maintenanc

Well Balanced Investment @ Smart SolarConfigure



TCO Comparison

	Solution1	Solution 2	Solution 3
CAPEX	……	……	……
3 years TCO	……	……	……
5 years TCO	……	……	……
10 years TCO	……	……	……

CAPEX driven

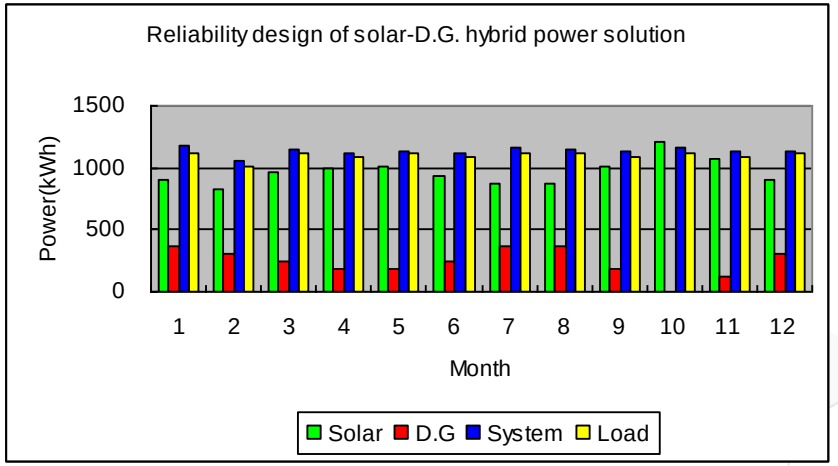
OR

OPEX driven

Solution X with configuration X

Most suitable solution

SolarConfigure™ software design system configuration

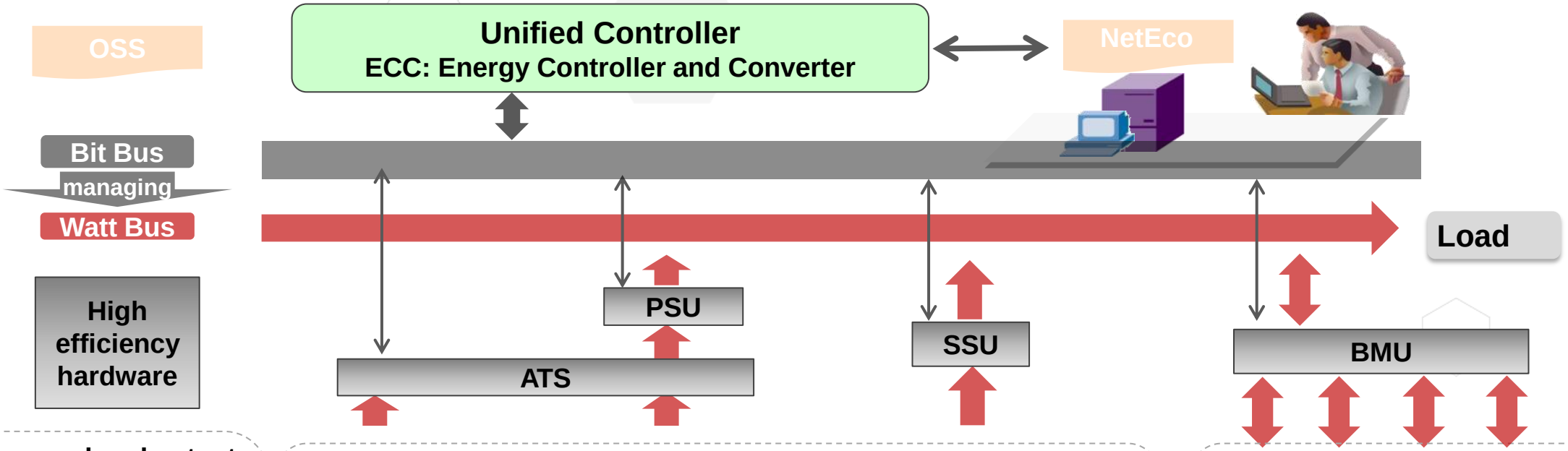


Design Principles:

- PV modules investment & D.G. OPEX well balanced by TCO analysis
- Maximum using solar energy
- Optimizing battery capacity and DOD
- Choosing best D.G. load rate

H.E. Bus Enables The Best Energy Efficiency

Unique Huawei Energy Bus Technology for BMW(Bit Managing Watt)



- Advanced and patent control technology: Genshift™ Technology
- Dual Power™ Technology
- SolarMax™ Technology



Diesel



Grid



Solar



ESS(FCB DCB SCB ACB)

Fuel and Maintenance Saving > 50%

Single: Single Platform, Multi Play, Smooth Evolution

Diesel Hybrid



Solar Hybrid



Grid Hybrid



OSS: Operations Support System





NetEco

EPS:
Energy Plant System







- D.G.
- Solar
- Grid

ICC:
Integrated Controller and Converter







- ECC
- ATS
- PSU
- SSU
- Inverter
- Converter

Controller

Converter

ESS:
Energy Storage System



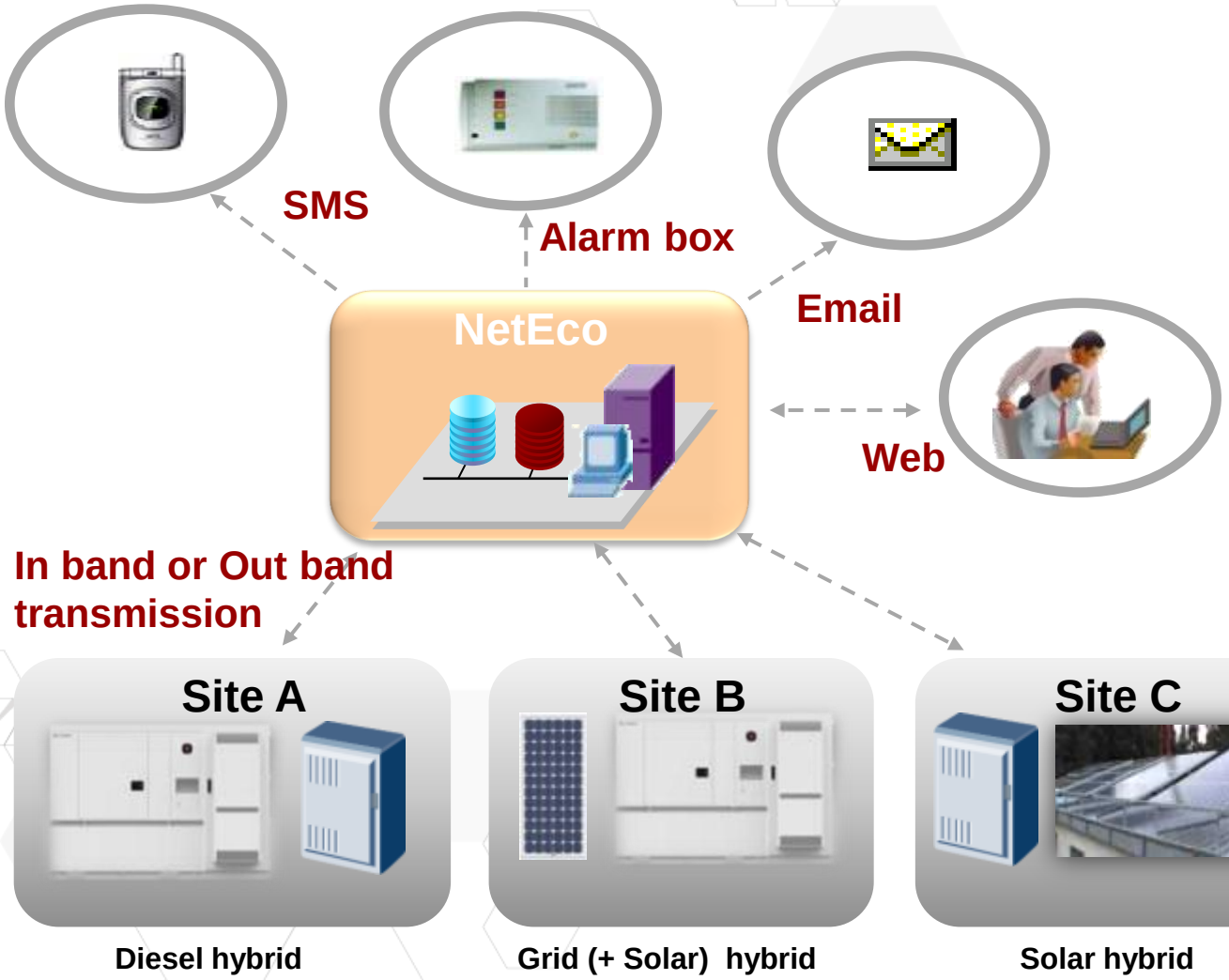
- FCB
- ACB
- DCB
- SCB

CCS: Cabinet with Cooling System



Cabinets for ICC & ESS

Smart: Capable of O&M, Maximize Saving



Anywhere

Energy alarms are available

Any Site

Energy status are under control

Fuel Meter



DOD

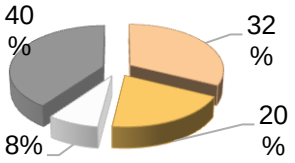


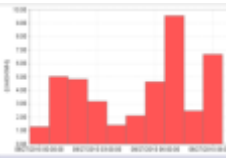
Any Energy

The highest efficiency

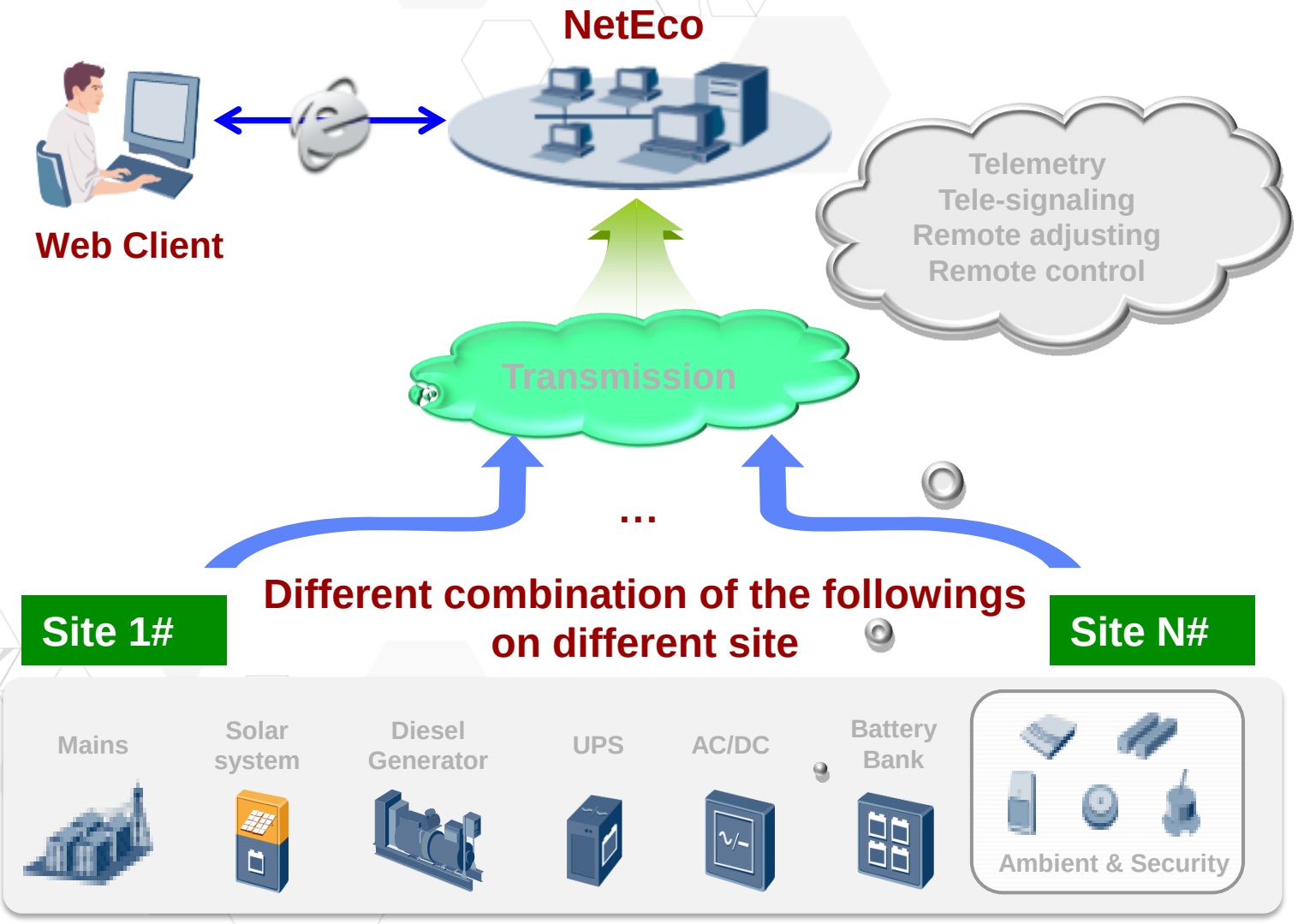
The best TCO balance

NetECO can output customized reports .





NetEco Better Back Efficient O&M

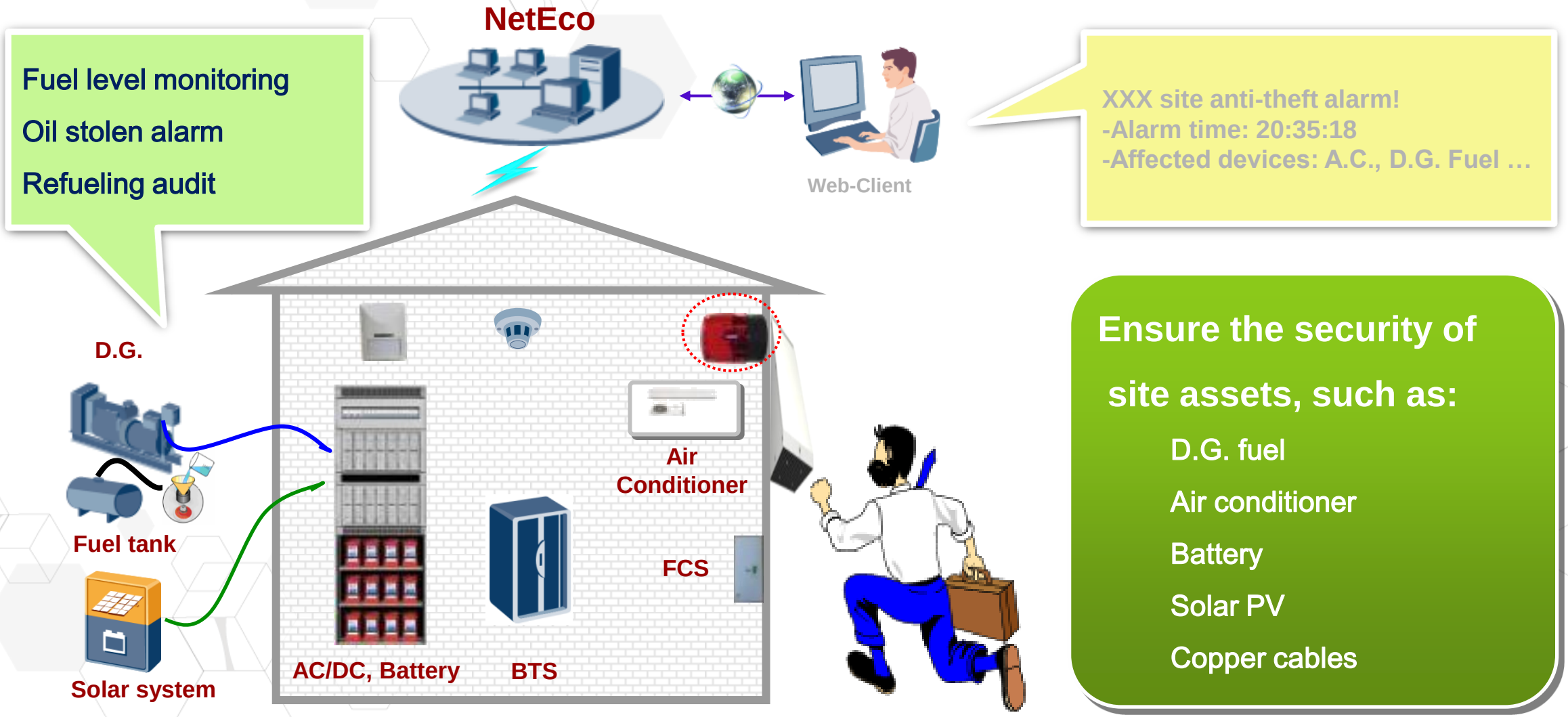


Automation and information:
Real-time monitoring site power status, alarms , parameters and performance data

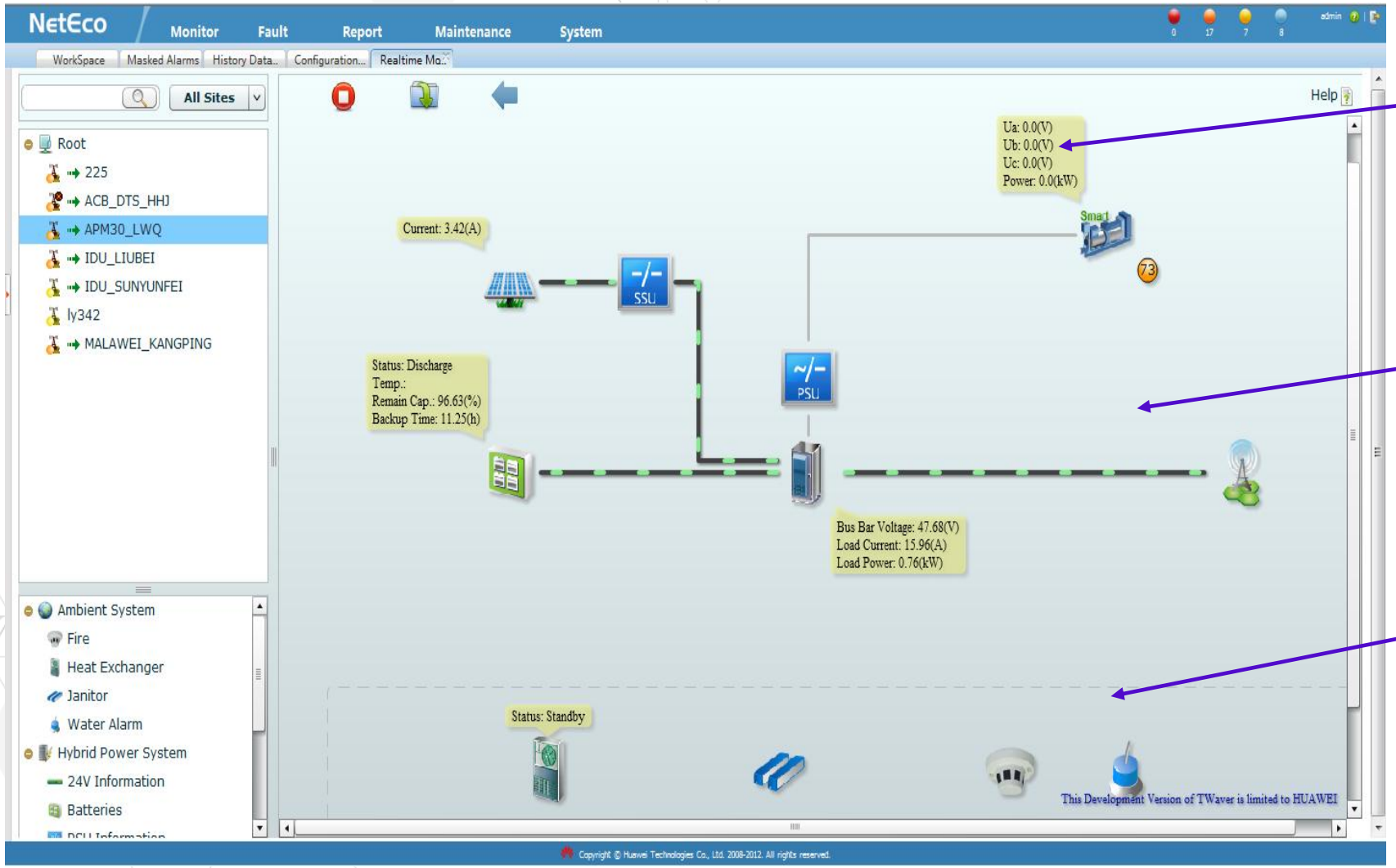
Reduce site visit cost:
Less patrolling times ,
Least inspection items

Improve power availability:
Removes obvious and hidden alarms, reduces the probability of power failure

Fuel management and site Anti-theft (Smart)



Dynamically Displays Power Supply Logic and Status



Display KPI of Energy Equipment

Display Power Supply Logic Dynamically

Display Environment Status and Alarms

THANK YOU FOR THE ATTENTION

