

# Green ICT, Lighting up the Green Future

## Trendek és lehetőségek a távközlés minimál karbonkibocsátására

**Kiefer Tamás**

Key Account Director



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**Green  
Development  
Trends & Challenge**

Huawei Green  
Development  
Solution

Huawei Green  
Development  
Practice

# “Green Development” Has Become Global Consensus

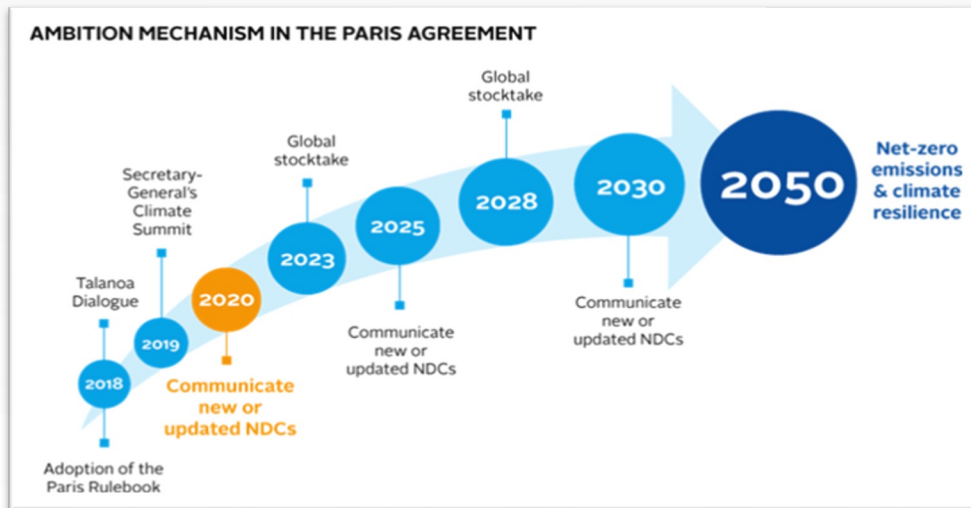
## 192 Countries Signed Paris Agreement



Temperature rise  
< 2.0 °C Target  
< 1.5 °C Challenge

Emission  
56→25  
Billion tons

### The Paris Agreement was born on COP21



192 countries committed 68% of countries carbon Net Zero in 2050

## Government Publishing Policies

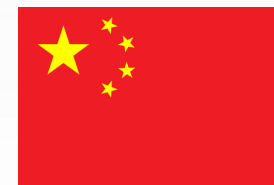
### EU: “Green Deal”, Carbon Net Zero by 2050



The European Green Deal is our new growth strategy. It will help us cut emissions while creating jobs.

Ursula von der Leyen,  
President of the European Commission

### China: Emission Peak 2030, Carbon Net Zero 2060

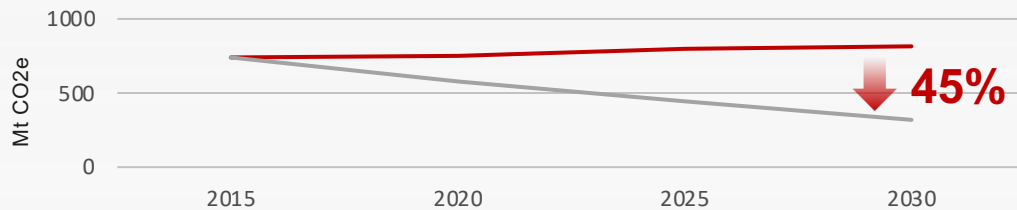


China proposed at the 75th United Nations General Assembly: China will increase its nationally determined contribution and adopt more powerful policies and measures.  
Emission Peak by 2030 and Carbon Net Zero by 2060

# ICT Setting Target of 45% Emission Reduction by 2030

## 29 Operators Signed ITU L.1470

### ITU L.1470 set 45% reduction target



### 29 operators have signed commitments

Logos of 29 operators: américa móvil, BT, airtel, Jio, kpn, stc, AT&T, telenor, SK telecom, verizon, proximus.

2020→2030  
Carbon Emissions

- ↓ 45% @ Mobile
- ↓ 62% @ Fix
- ↓ 53% @ DC

Source: <https://www.itu.int/rec/T-REC-L.1470>

## Leading Operators Launch Strategy

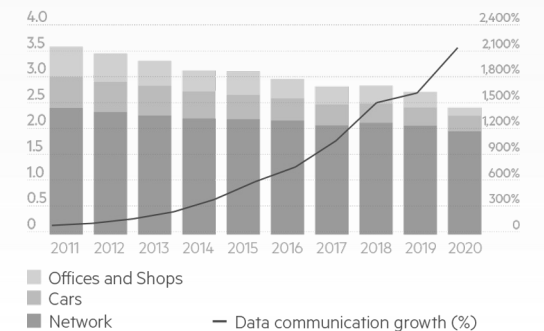
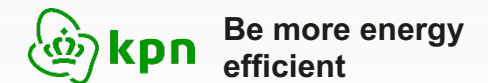
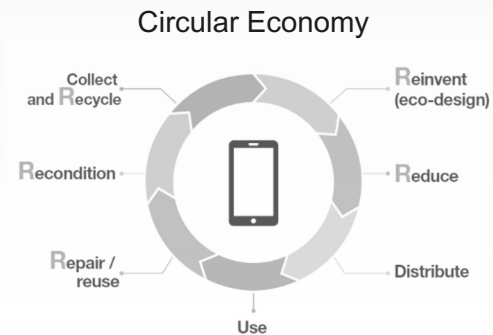
### DT Green Magenta Strategy



Including energy saving standards, innovative solutions, product selection



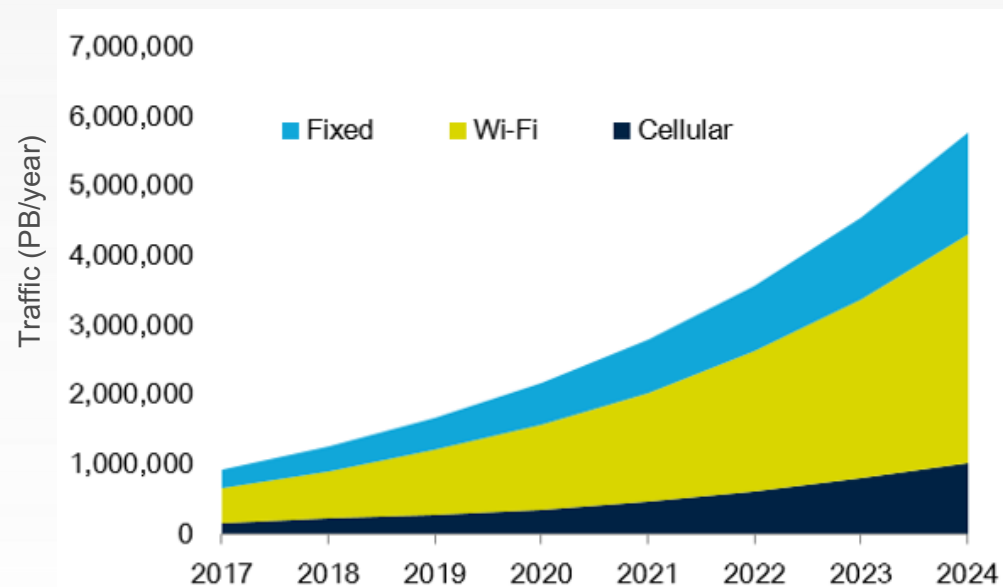
1. Reducing Emissions in Operations
2. Reducing Scope 3 Emissions
3. Building a Circular Economy
4. Helping Society To Decarbonize



# Challenge: Explosive Digital Business Brings More Energy Consumption

## Digital Market Fast Growth Generate More Traffic

CAGR **29%** ↑      **5.8ZB@2024** ↑



Source : Informa Tech

## More Traffic Leads to More Energy and Carbon



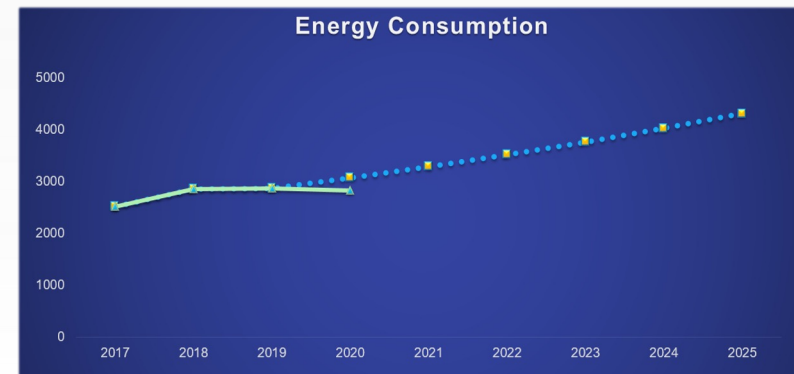
Orange forecast energy budget increase 26%



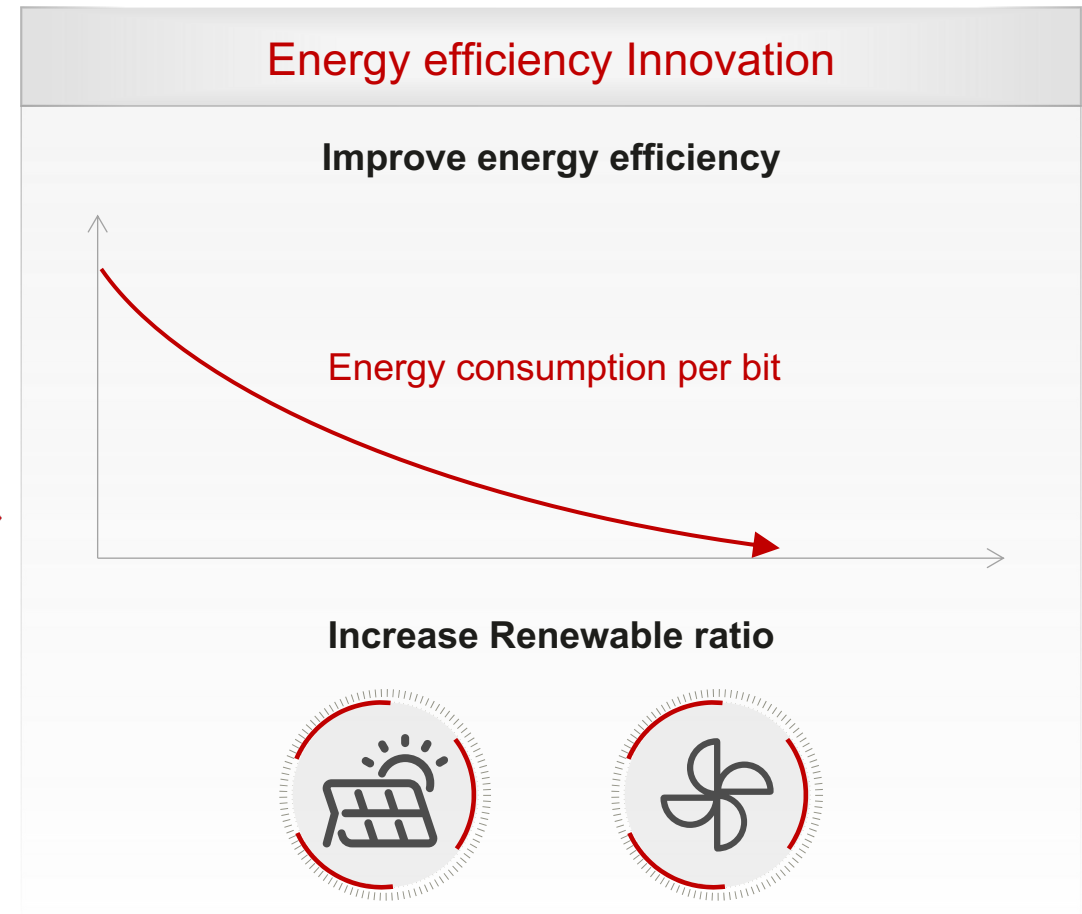
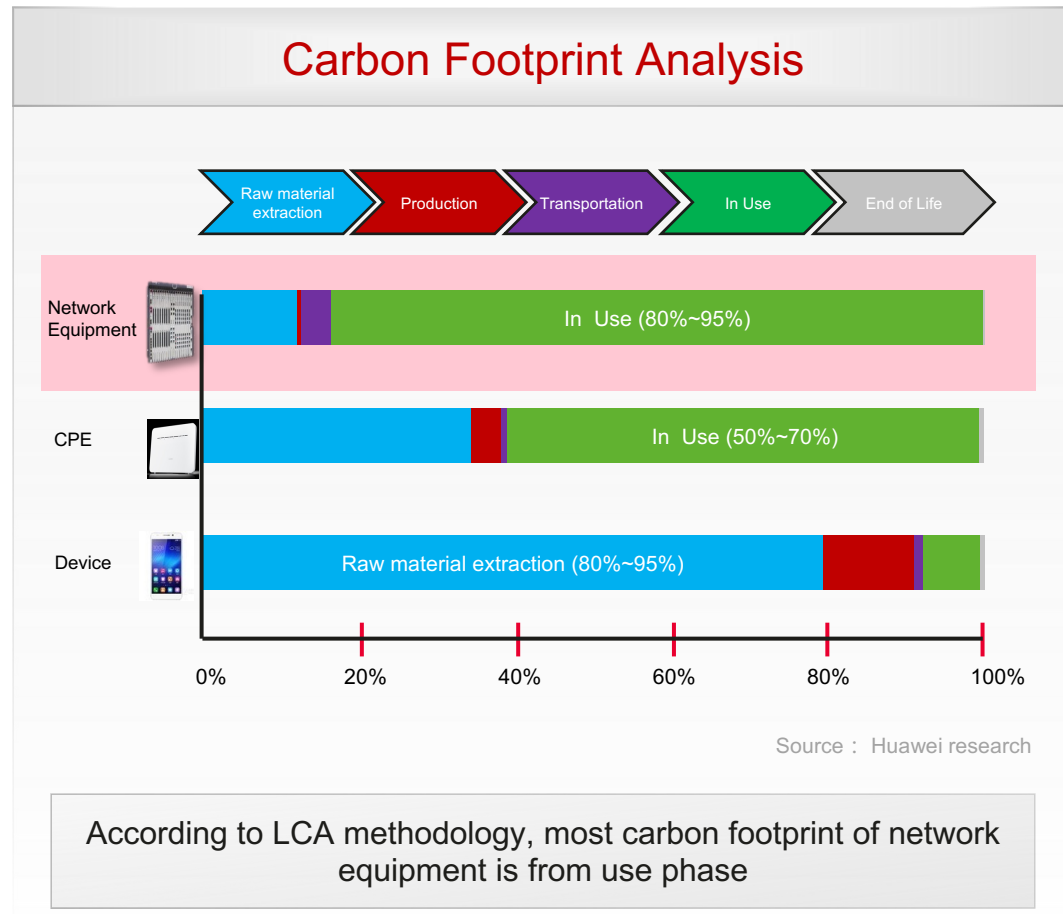
In 2019, we shifted our focus to energy, underpinned by the premise that energy demand will rise by **26%** from 2019 to 2023.



Telenor forecast energy consumption increase 30%+



# Most Energy Consumption Comes From Use Phase of Network



**Energy efficiency improvement has become a major topic to cope with green development strategy.**

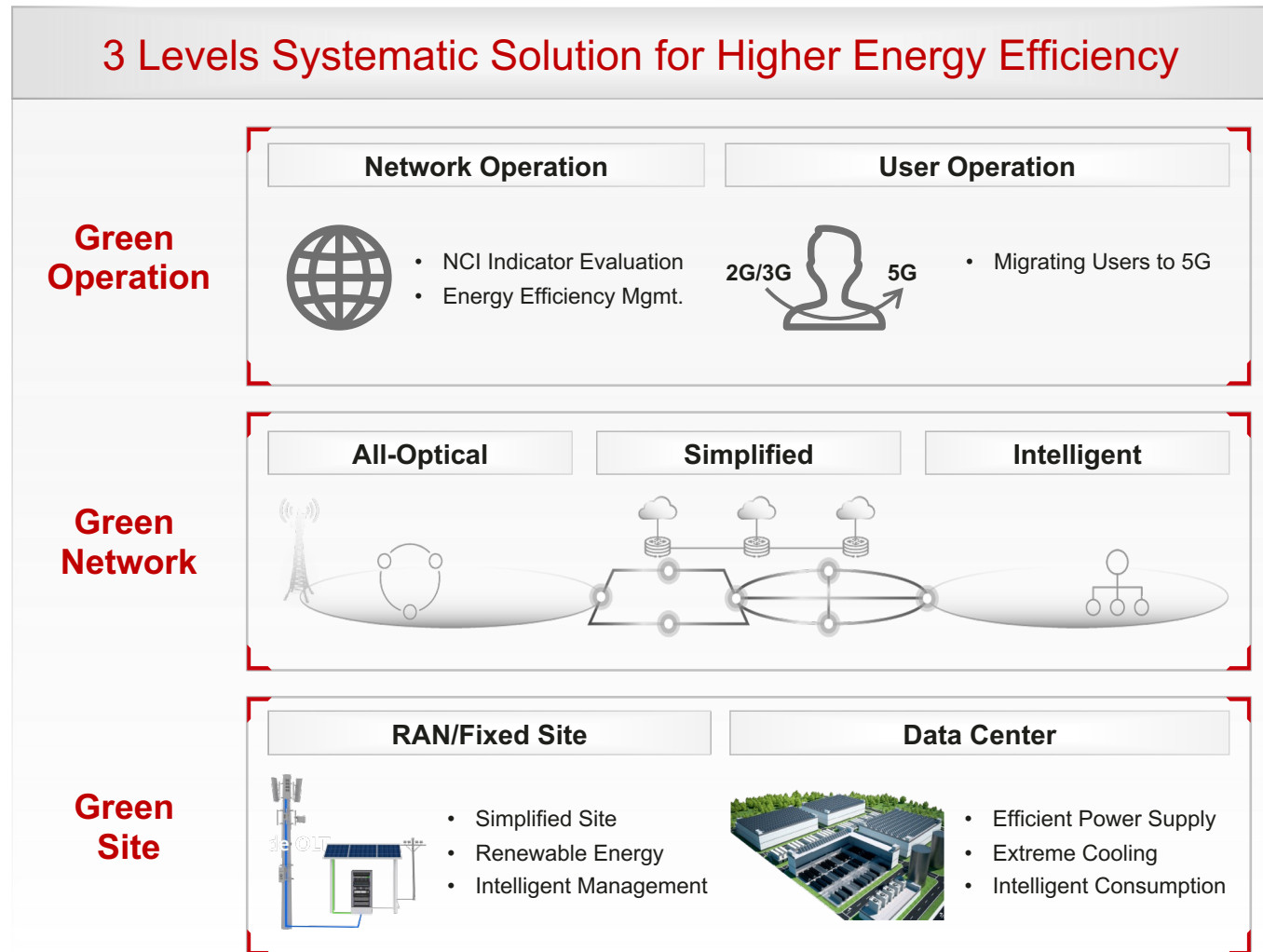
# CONTENT

Green Development  
Trends & Challenge

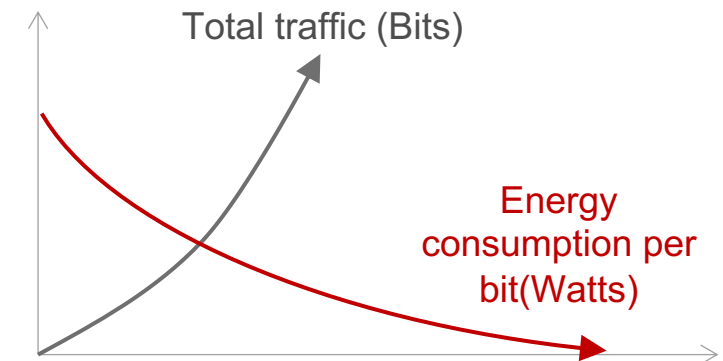
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# Huawei Green Development Solution: More Bits, Less Watts



More Bits, Less Watts





# Green Site: Simplified, Renewable & Intelligent

## Traditional Site



## Green Site

### Simplified Site

- **All-in-one ANT:** Multiple ANT -> Single ANT, coverage 20% ↑
- **High Integration RF:** one-frq RF -> multi-frq combination, power 20% ↓
- **Blade OLT:** OLT on tower, power 85% ↓
- **Indoor-to-outdoor:** Shelter -> Cabinet, power 15% -25% ↓

### Maximizing Renewable Energy

- **Solar Access:** D.G. + Grid -> Solar + Grid, mains power 15% ~ 25% ↓

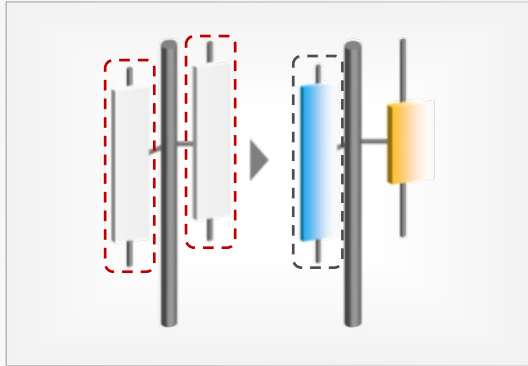
### Intelligent Energy Management

- **PowerStar:** Intelligent management, power 10% ↓

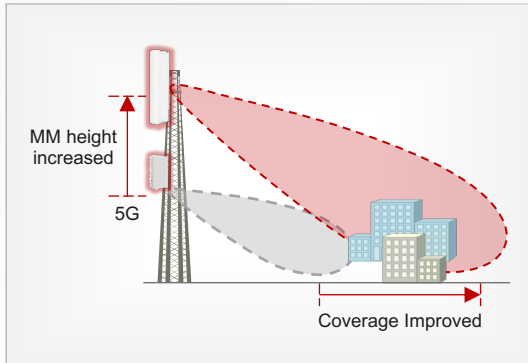
Note: There have been 100+ countries deployed...

# Simplified Site and Highly Integrated Module

## All in One Antenna



- Multi-frequency antenna replace legacy antennas.
- Enable MM and passive antennas on same height.



- MM Height increased: 6 m
- Coverage improved and reduced new physical sites by 20%

**Network-level energy Consumption: 8% ↓**

## Indoor to Outdoor

### Site Energy Efficiency



**Site Energy Efficiency Improve: 30%**

# Fixed Network Site Efficiency

## Free Cooling + Li-Battery



25°C → 35°C

**Decrease Airconditional system operation: 80% ↓**

## DSLAM to Blade OLT



- DSLAM
- Copper Connection

- Blade OLT
- Fiber Connection

**Equipment Power Consumption: 85% ↓**

# Renewable Energy for Green Development

## Solar Access



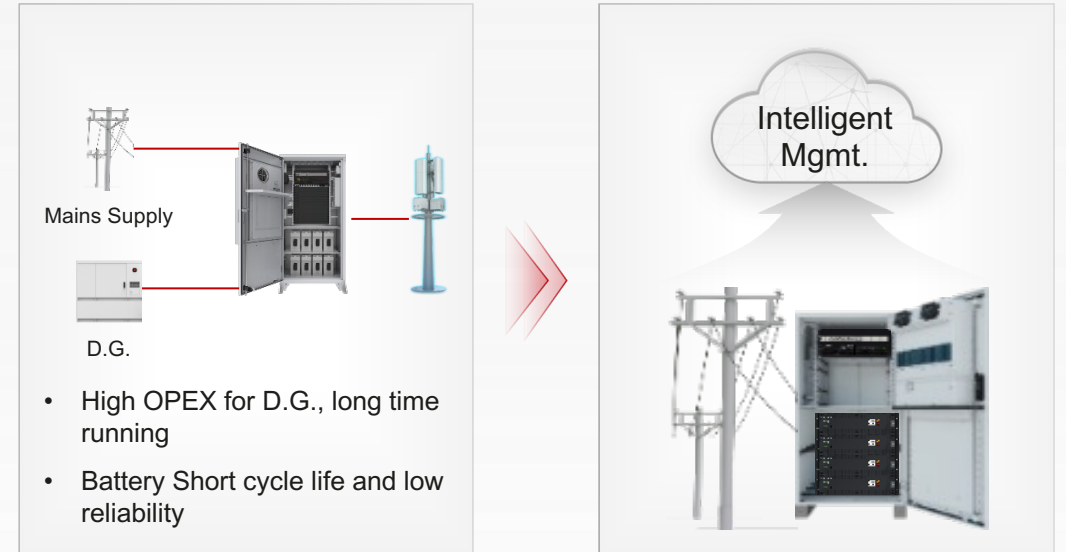
- High Efficiency: 10%+ energy yield increase
- Green Energy: Carbon reduction 25%
- Easy O&M : "0" Maintenance



**Green Energy, Carbon Emission reduce 25% ↓**

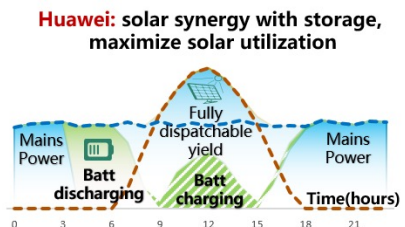
**100% grid free: Solar / Wind / H<sub>2</sub> / NH<sub>3</sub>**

## Grid Hybrid



- High OPEX for D.G., long time running
- Battery Short cycle life and low reliability

- New Site : "0" D.G.@16h blackout
- Smooth Evolution: 1 site 1 cabinet
- Intelligent: Environment Friendly



**0 D.G., Battery Life increase 3%-5%**

# Case2: Green Island in Europe, 65% Power Consumption Saving

## Europe: Green Island Trial



Shelter



**Step 1**

Outdoor Cabinet

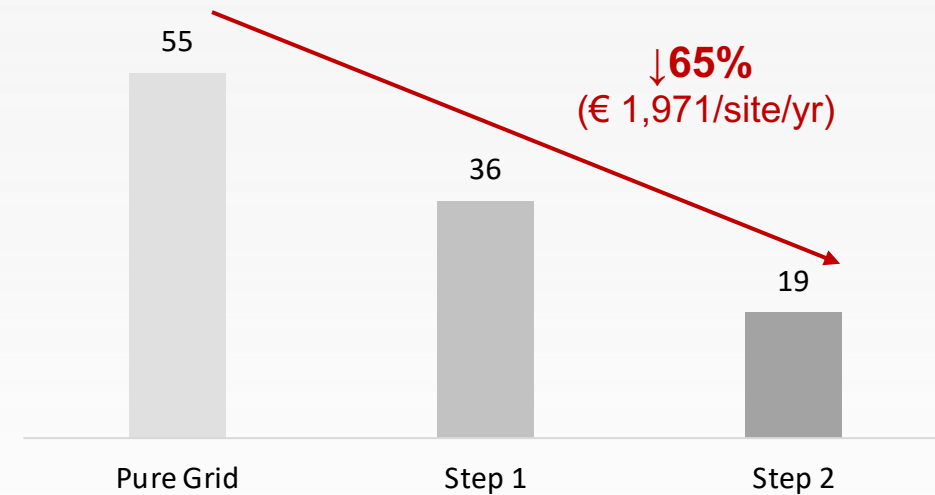


**Test Ongoing**

**Step 2**

Step 1 + Solar +  
Li Battery

## Grid Power Consumption (KWh/site/day)

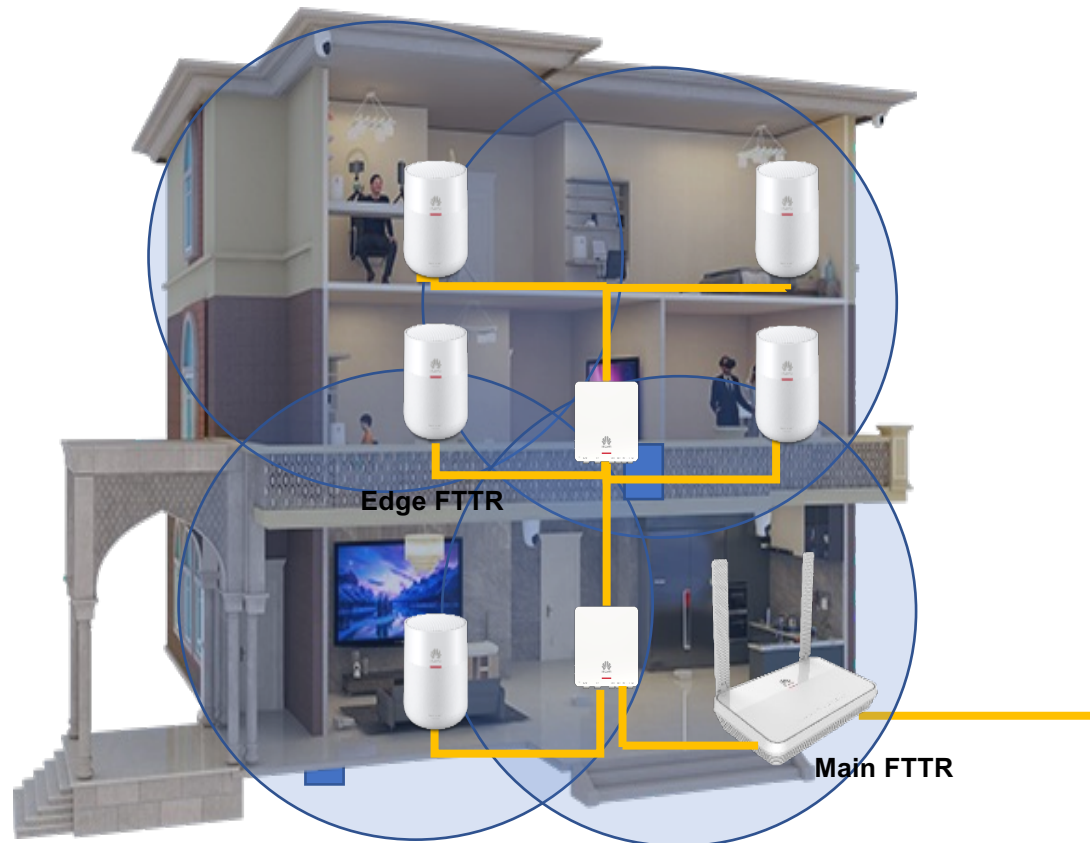


- Data reference period : 1 Apr 21 – 12 Aug 21
- After modernization AC Power is based on average AC meters and Huawei system

# Energy Saving At Home

## Huawei FTTR (Fiber To The Room) Solution

GIGA Wi-Fi **Everywhere, Extreme** Experience



**Lower OPEX**  
**Fewer home visits**

**30%↓**

**Lower Power Consumption**  
**Fiber vs PLC/ETH cable**

**30%↓**

Connections: **128**

Wi-Fi **>1 Gbps**

Roaming: 200ms→**20** ms

# All-Optical: ROADM to OXC, Bring All Optical to Anywhere

## 1 OXC for 12 Directions

### Traditional ROADM Solution

12 Subracks



One Subrack for Each Direction

### OXC Solution

1 Subrack



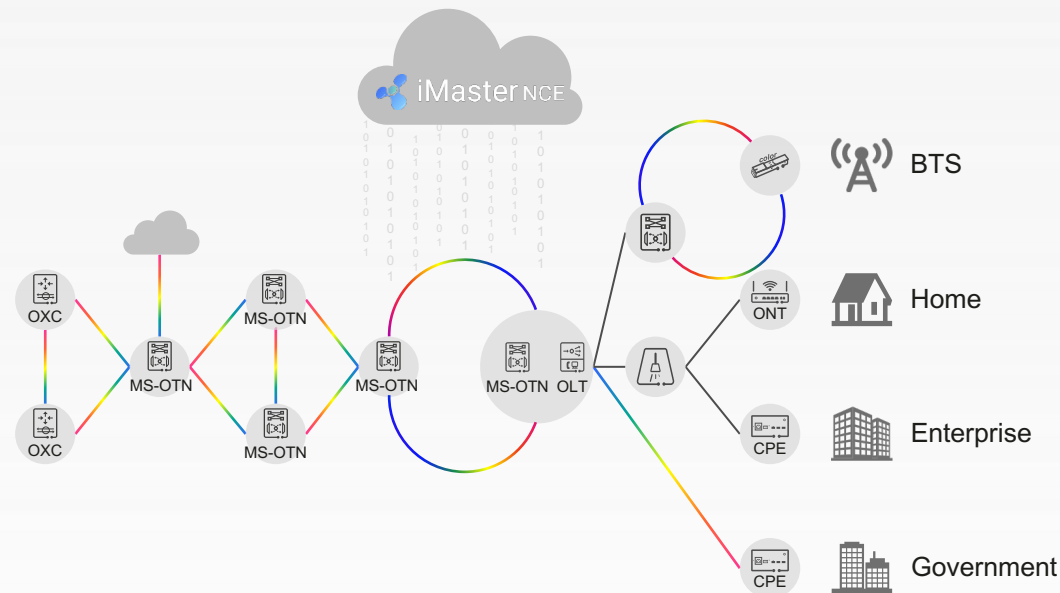
One Slot for Each Direction

# VS.

Up to 12 in 1  
Footprint saved by 90%

**Power Consumption Reduced by 40%**

## Optical to Anywhere



Intelligent Simplified **All-Optical** Network

OptiXtrans

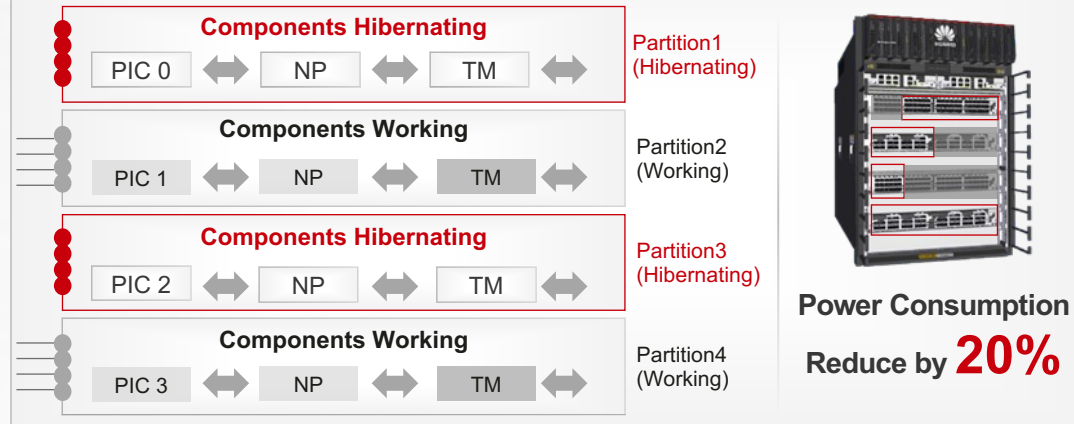
OptiXaccess

OptiXstar

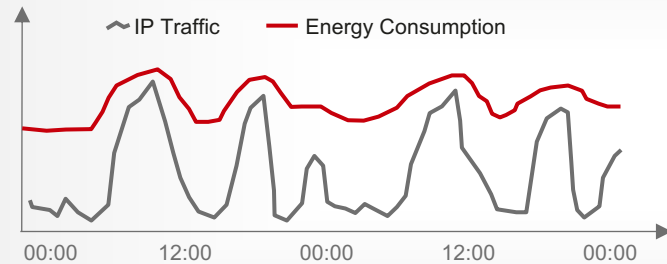
# Intelligent: Partitioned Management & Intelligent Adjustment

## Router Sleep

### Resource Partitioned Management



### Dynamic Adjustment



**Power Consumption Reduce by 20%**

Note: Over 1000 Routers have been deployed in China Tier-1 Operators.

## Microwave Sleep

### Service-Level

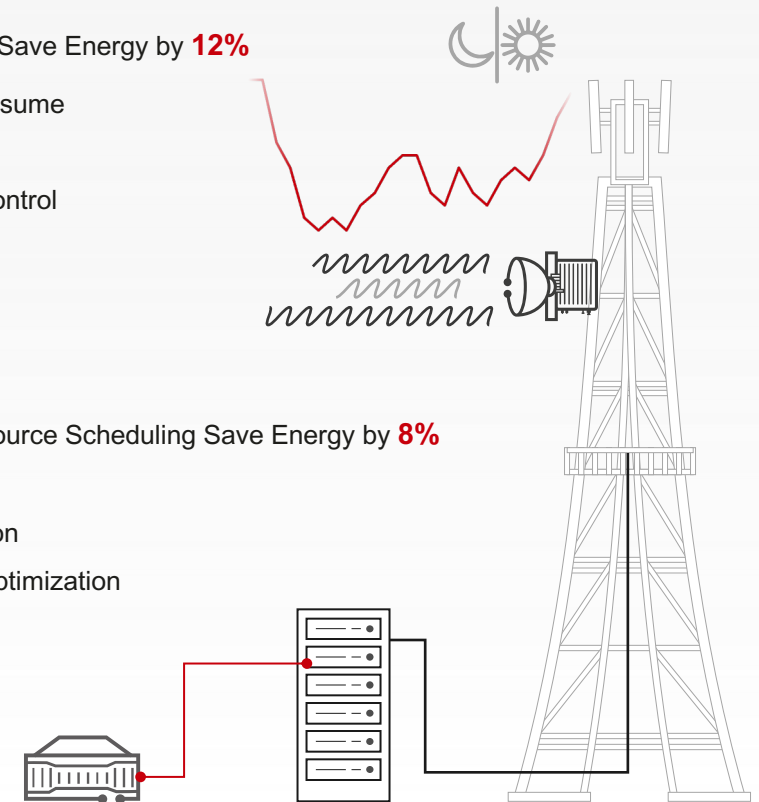
Traffic Aware RF Freeze Save Energy by **12%**

- Automatic RF Sleep/Resume
- Adaptive Modulation
- Automatic TX Power Control

### Equipment-Level

Configuration based Resource Scheduling Save Energy by **8%**

- Idle Port Shut-Down
- CPU frequency reduction
- Power Supply Model Optimization

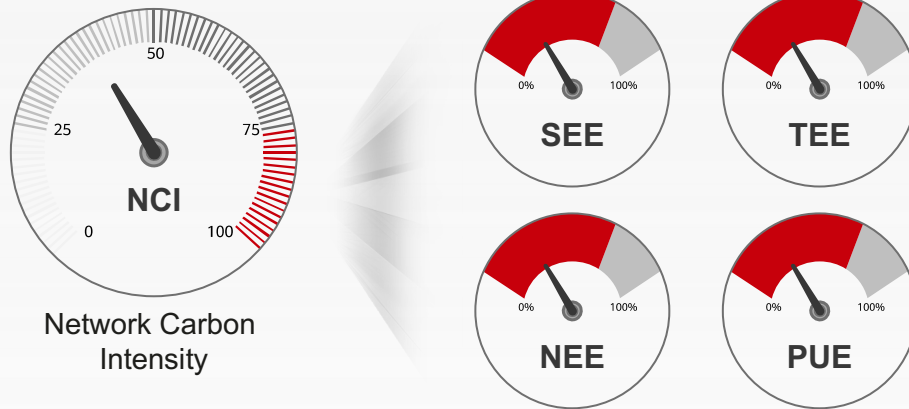




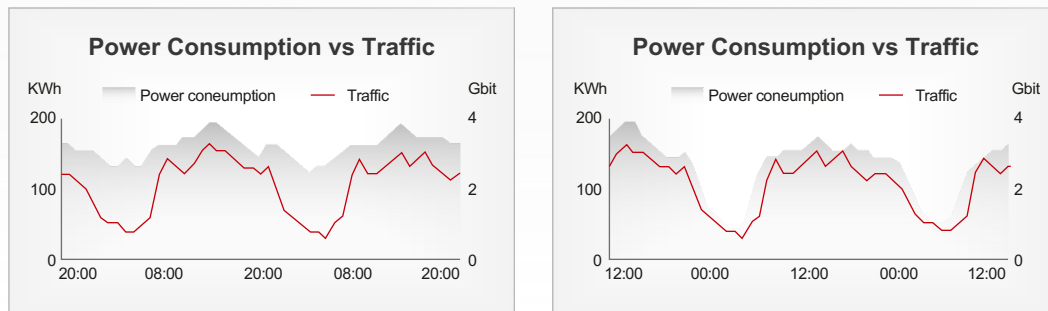
# Green Operation: Accurate Energy Efficiency Improvement

## Network Operation

### Indicator System Evaluation



### Measurement & Optimization

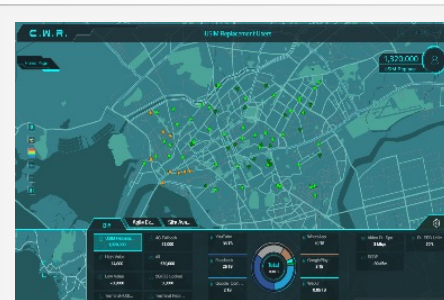


## User Operation

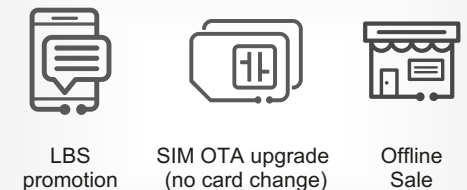
Guide users to migrate and release old devices and resources, improve energy efficiency



Real-time Geographic Insights to Identify Potential Migration Users



Real-time precision marketing



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# Huawei Protecting The Environment with Technological Innovations

## Commitment

## Tech for a Better Planet

### 2025 Goals

**16%**

reduction in carbon emissions per million CNY of revenue compared with 2019

**2.7x**

gain in average energy efficiency of main products compared with 2019

**Top 100**

suppliers have set carbon emission reduction targets

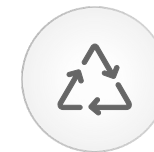
### Directions



Reducing carbon emissions



Promoting renewable energy

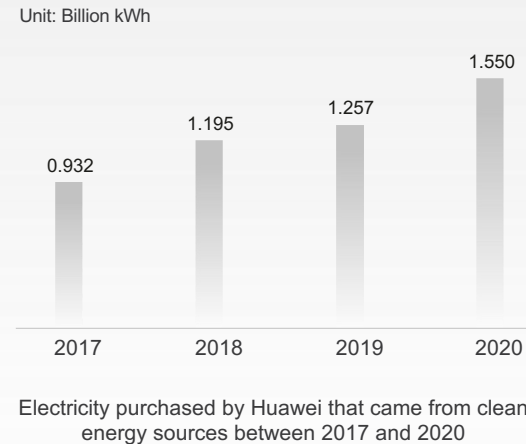
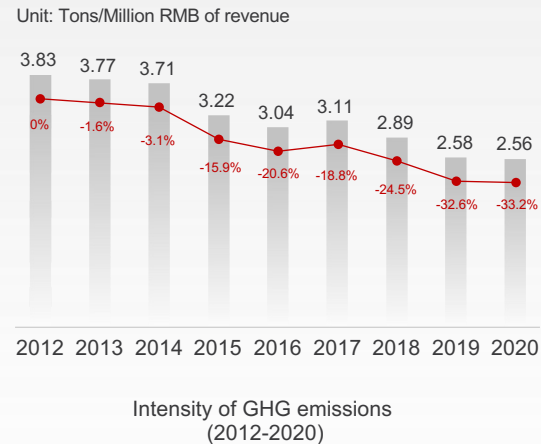


Contributing to a circular economy

# Huawei Constantly Reducing The GHG Emissions Intensity

## Key Achievements in 2020

- Intensity of GHG<sup>1</sup> emissions **reduced by 33.2%** from 3.83 ton /mn¥ in 2012 to 2.56 ton/mn¥ in 2020.
- 1.55 bn kWh** of clean source electricity used, equivalent to CO<sub>2</sub> reduction by **620,000 tons**.



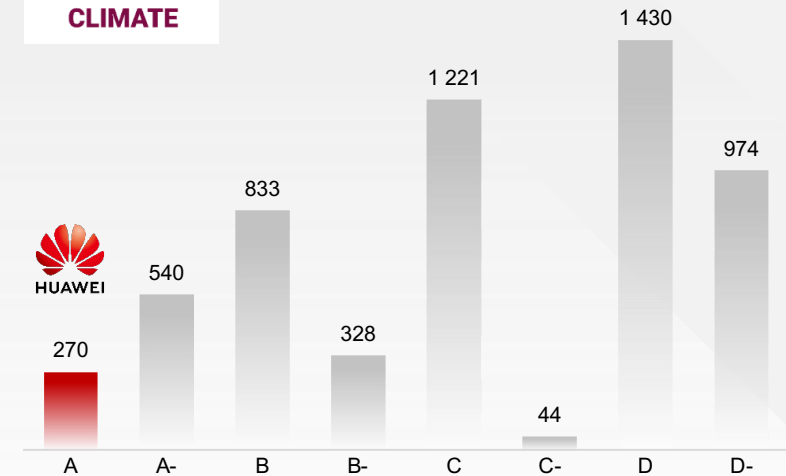
<sup>1</sup> GHG: Greenhouse Gas

## Ranked Grade "A" in 2020



2

5,800+ companies scored



<sup>2</sup> CDP: Carbon Disclosure Project, a not-for-profit charity that runs the global disclosure system.

# Thank you.

把数字世界带入每个人、每个家庭、  
每个组织，构建万物互联的智能世界。

Bring digital to every person, home and  
organization for a fully connected,  
intelligent world.

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