

**Regional Standardization Forum**  
Emerging Economic,  
Regulatory and Policy Trends  
in a Fast-Changing Digital World

Xi'an, China, 27 August 2018

## Smart Energy Makes Life Greener and Healthier

*Qi Shuguang*

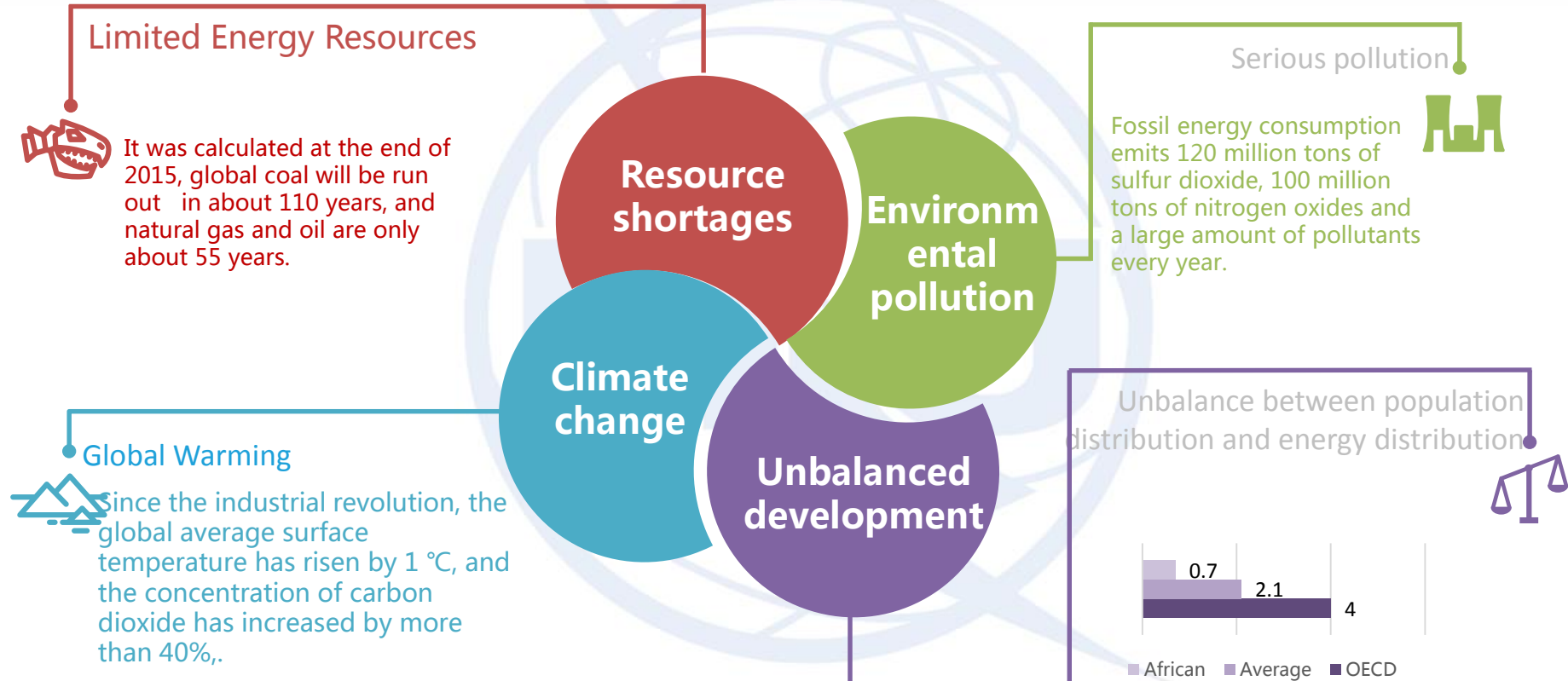
*Deputy Director ,EE deptment of CTTL in CAICT, China*



**50** | ITU-T  
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GROUPS  
1968-2018

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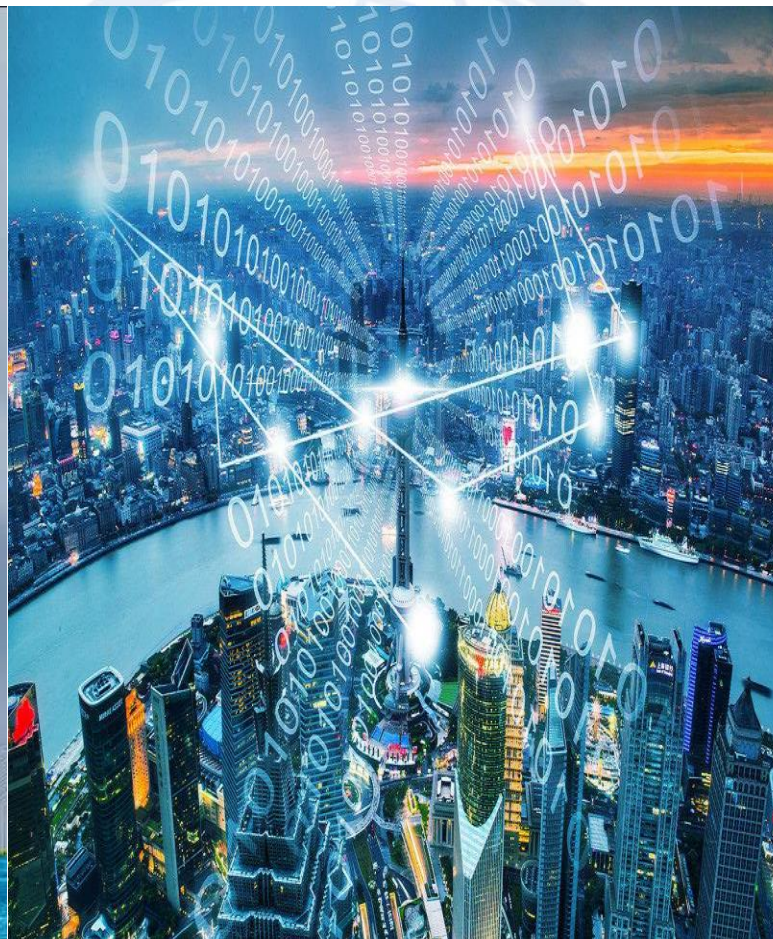
**It is imminent to be greener and saving energy**



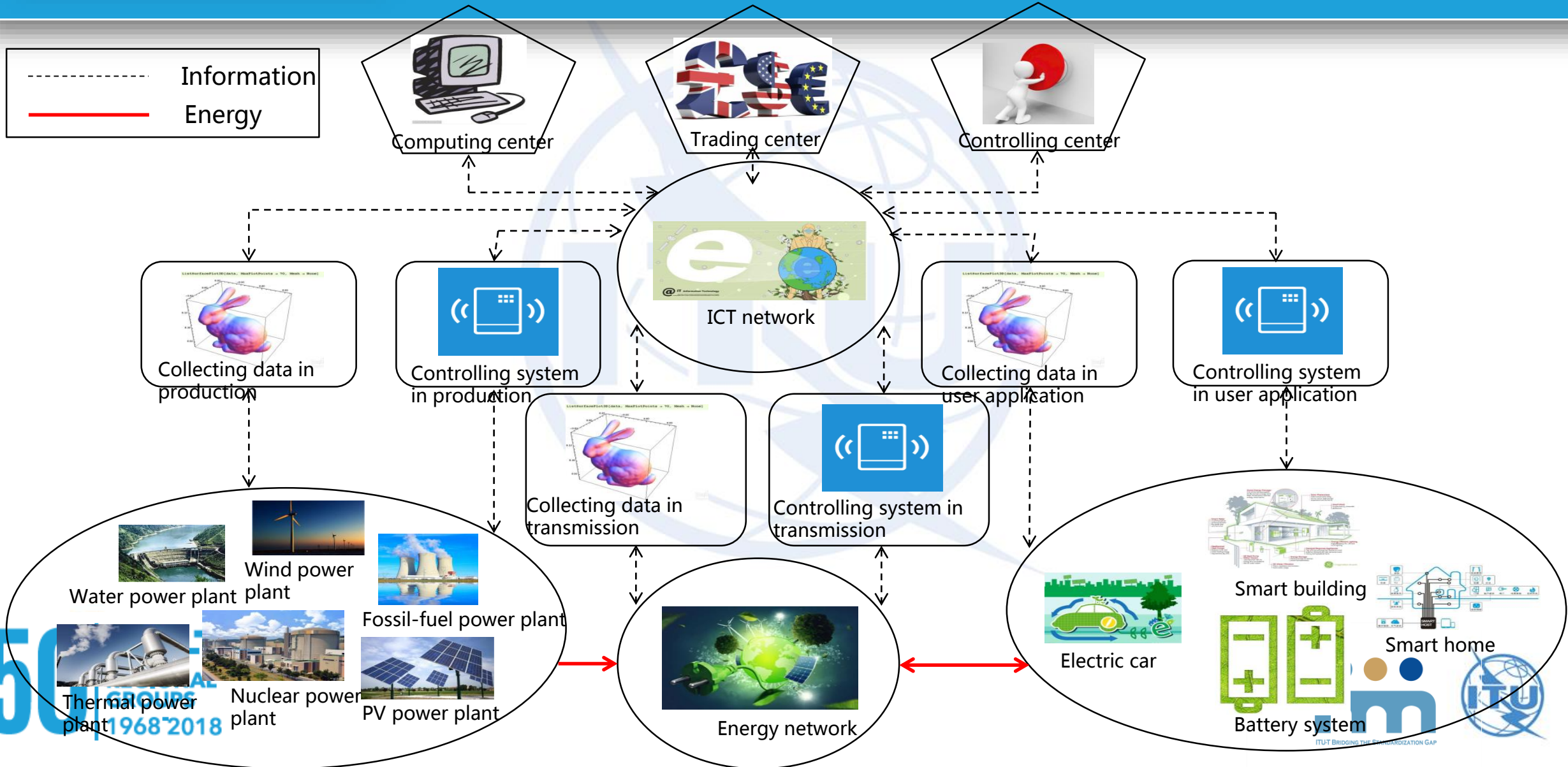
1.2 billion people do not have electricity access ;



3 billion people rely on wood, coal, and animal waste for cooking and heating



## Data changing the Energy

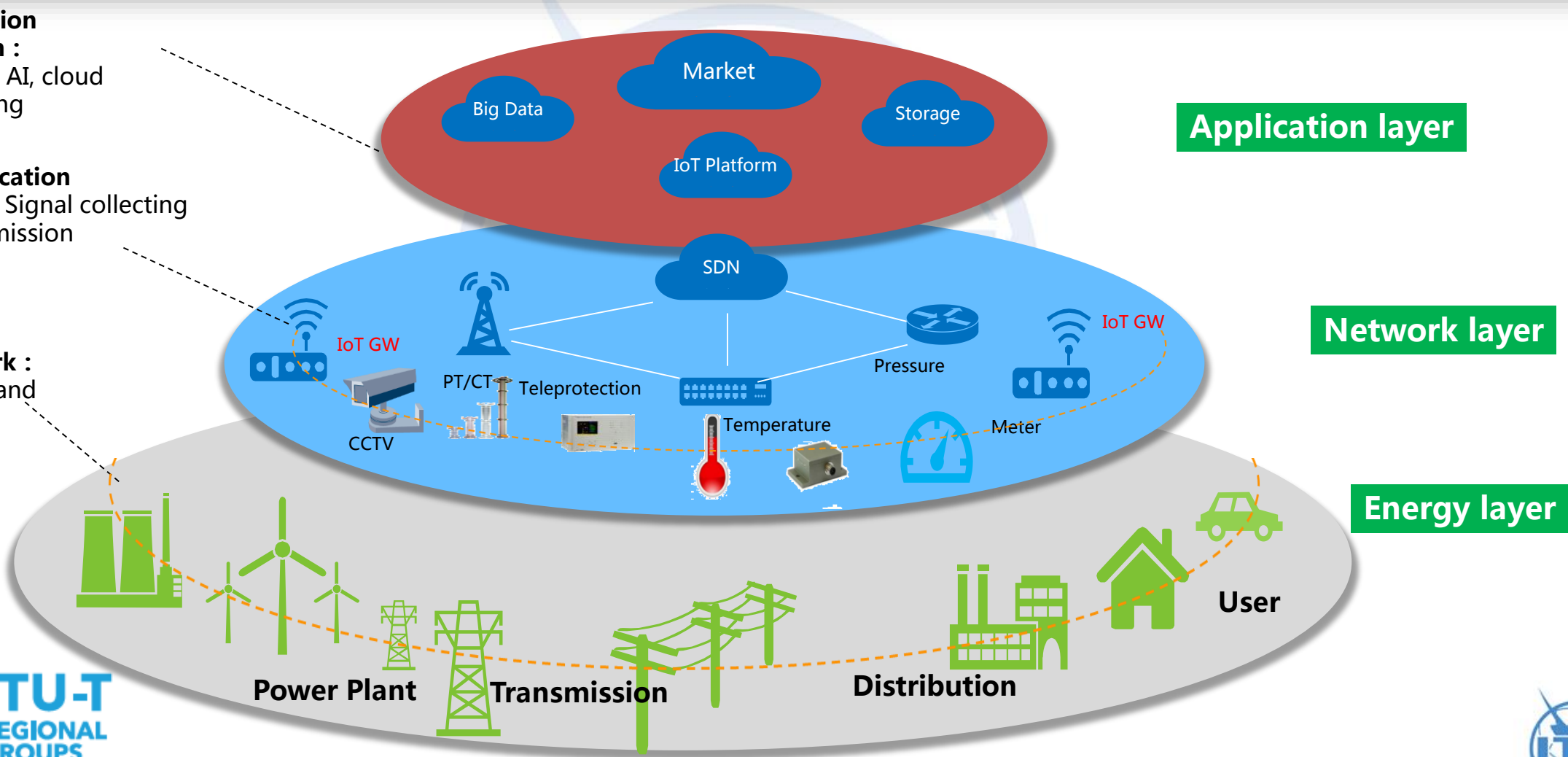


# Smart Energy Introduction

**Application Platform :**  
Big data, AI, cloud computing

**Communication network :** Signal collecting and transmission

**Energy network :** Energy supply and transmission



**Application layer**

**Network layer**

**Energy layer**

# Standardization activity on Smart Energy

## Recommendation under study in ITU-T Study Group 5

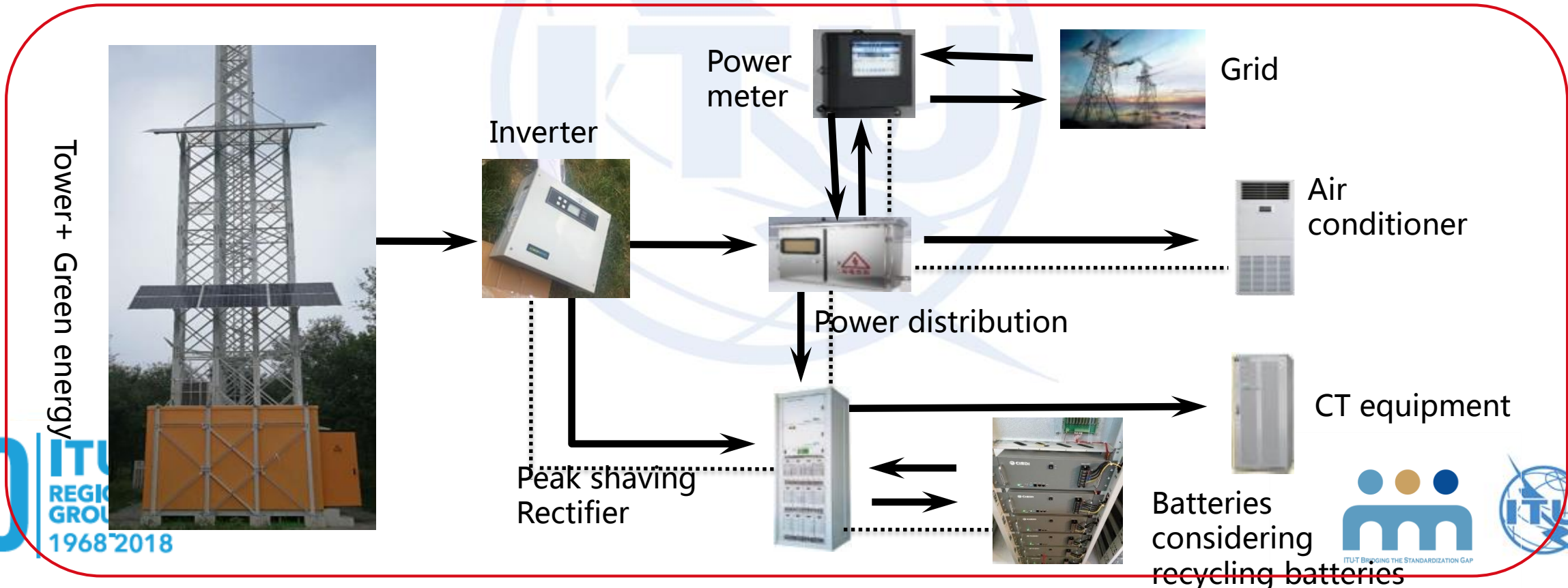
- **Smart energy solution for telecom base stations**
- **Smart energy solution for data centres and telecom centres**
- **Smart energy for cities and home applications**

# Standardization activity on Smart Energy

## Smart energy solution for telecom base stations:

## ITU-T Study Group 5

The aim of this work item is to establish clear requirements on base station smart energy system performance, safety, energy efficiency and environmental impacts.





# Standardization activity on Smart Energy

## ITU-T Study Group 5

### Smart energy solution for data center and telecommunications rooms:

The aim of this work item is to establish clear requirements on data centre and telecom centre smart energy system performance, safety, energy efficiency and environmental impacts.



# Standardization activity on Smart Energy

## Smart energy for cities and home applications :

## ITU-T Study Group 5

Scope of this Recommendation is to define the smart energy for city, building, and home application. Different kinds of input energy especially renewable energy (including PV system, wind system etc) energy storage and DC micro-grid should be considered. In addition, monitoring and controlling methods are necessary to given so that let energy system can be smart and controllable. And safety characteristics are also important to consider in this Recommendation to body and equipment protection.



### Environment, climate change and circular economy

- Studying ICT environmental aspects of electromagnetic phenomena and climate change and **protection of telecommunication networks and equipment from interference and lightning.**
- Studies related to **electromagnetic compatibility (EMC)**, to safety and to **health effects connected with electromagnetic fields** produced by telecommunication installations and devices, including cellular phones.
- Studies on methodologies for **assessing the environmental impact of ICT**, publishing guidelines for using ICTs in an eco-friendly way, tackling **e-waste issues, energy efficiency and power feeding systems.**
- Studies on how to use ICT **to help countries** and the ICT sector **to adapt to the effects** of environmental challenges, including **climate change.**
- It is also identifying the needs for more consistent and standardized **eco-friendly practices for the ICT sector** (e.g. labelling, procurement practices, eco-rating schemes for mobile phones)



# ITU-T Study Group 5

## Working Party 1/5: EMC, lightning protection, EMF

- Q1/5 - Protection of information and communication technology (ICT) infrastructure from electromagnetic surges
- Q2/5 - Equipment resistibility and protective components
- Q3/5 - Human exposure to electromagnetic fields (EMFs) from information and communication technologies (ICTs)
- Q4/5 - Electromagnetic compatibility (EMC) issues arising in the telecommunication environment
- Q5/5 - Security and reliability of information and communication technology (ICT) systems from electromagnetic and particle radiations

## Working Party 2/5: ICT And Climate Change

- Q6/5 - Achieving energy efficiency and smart energy
- Q7/5 - Circular economy including e-waste
- Q9/5 - Climate change and assessment of information and communication technology (ICT) in the framework of the Sustainable Development Goals (SDGs)

## Regional Groups :

- [SG5RG-ARB](#) ITU-T SG5 Regional Group for the Arab Region
- [SG5RG-LATAM](#) ITU-T SG5 Regional Group for Latin America
- [SG5RG-AFR](#) ITU-T SG5 Regional Group for Africa
- [SG5RG-AP](#) ITU-T SG5 Regional Group for Asia and the Pacific

Chair: Qi Shuguang (CAICT, China)

Vice Chair: Takaya kazuhiko (NTT, Japan)

Vice Chair: Byung Chan Kim, (ETRI, Korea )

## Meeting information :

- **May 24<sup>th</sup> 2017**                      **AP-RG of ITU-T SG5 is established for new study period**
- **November 17<sup>th</sup> 2017**              **Coordination meeting**
- **March 16<sup>th</sup> 2018**                    **E- meeting**
- **July 13<sup>th</sup> 2018**                      **E- meeting**
- **September 11<sup>th</sup> 2018**              **Coordination meeting**
- **December 3<sup>rd</sup> 2018**                **Face to Face meeting**

## Topic Discussed :

- **P&I test possibility within ITU-T SG5 tasks and standards**
- **5G infrastructures standardization**
- **Application of AI technology in data center and base stations**
- **EMC, EMF and safety protection topics**
- **Any other topics**

## Next meeting information of Asia Pacific-Regional Group in ITU-T SG5:



### **Meeting of ITU-T Study Group 5 Regional Group for Asia and the Pacific (Wuxi, China, 3 December 2018)**

ITU-T Study Group 5 Regional Group for Asia and the Pacific will hold its first meeting in Wuxi, China on 3 December 2018.

The meeting will open at 0830 hours and participant registration will begin at 0800 hours on 3 December 2018. Details for the venue of the meeting along with the practical information will be made available on the [SG5RG-AP](#) webpage.

The meeting will be held in conjunction with the [ITU-T Study Group 20 on “Internet of things and smart cities and communities”](#) (3-13 December 2018), the [ITU Forum on “Artificial Intelligence, Internet of Things and Smart Cities”](#) (3 December from 1030 to 1600 hours) and the [Joint Coordination Activity on Internet of Things and Smart Cities and Communities](#) (JCA-IoT and SC&C) (6 December 2018, from 1400 to 1600 hours). All events will take place at the same venue.

***International Cooperation on BSG!***

***Thank you for all of your attention !***