

S M A R T  
G R I D  
FORUM

November 29, 2017

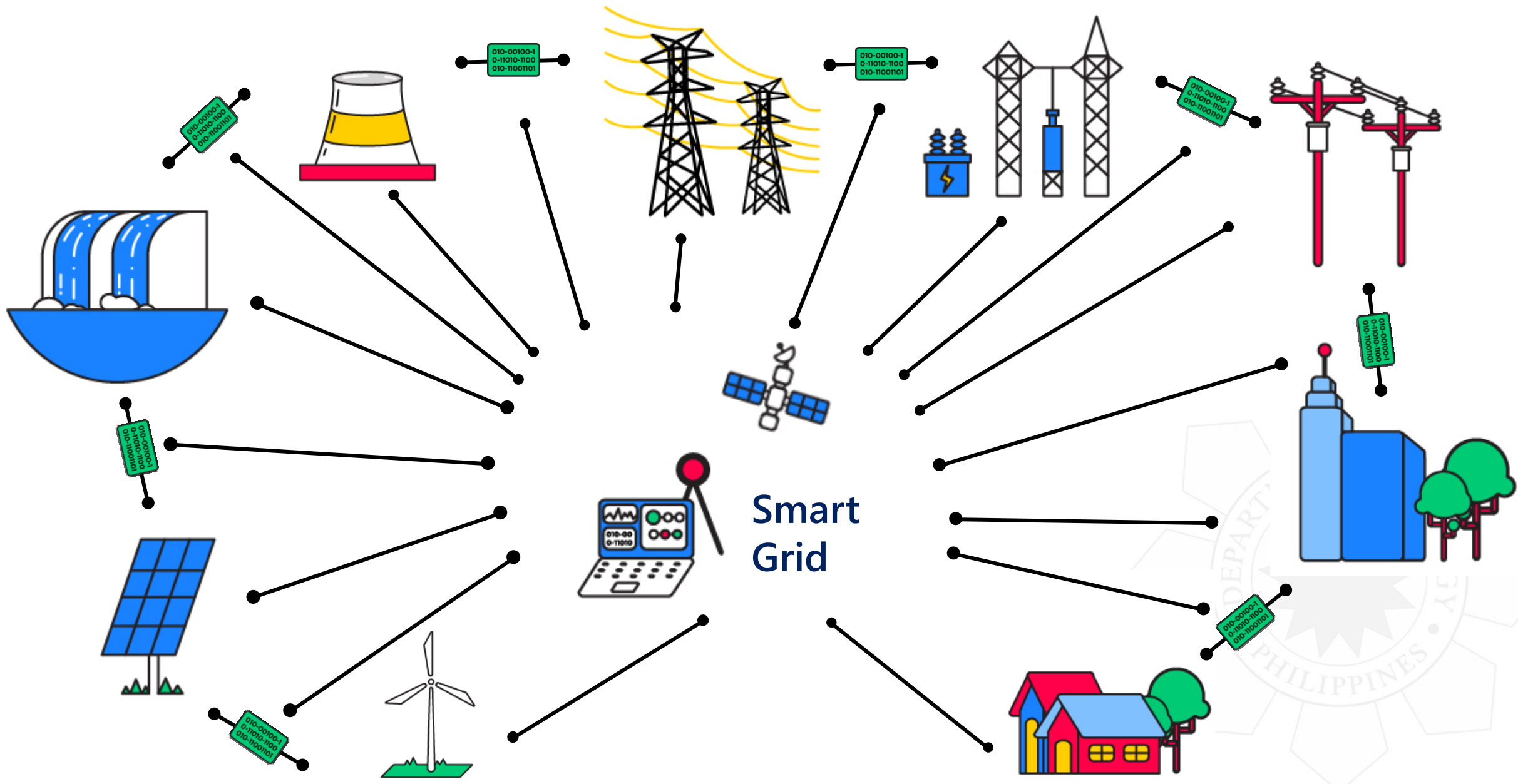


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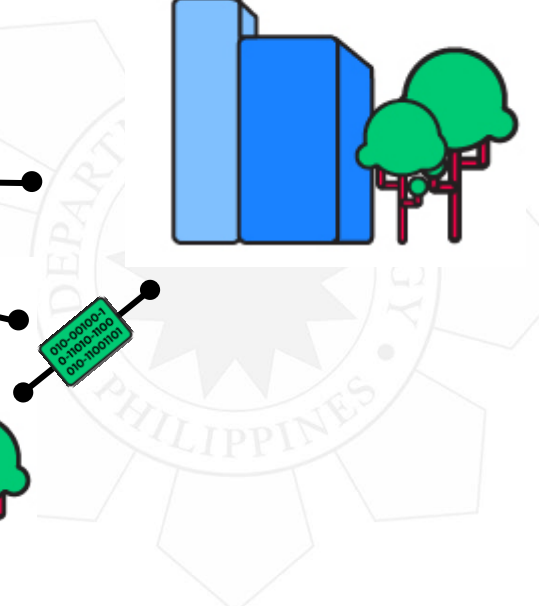




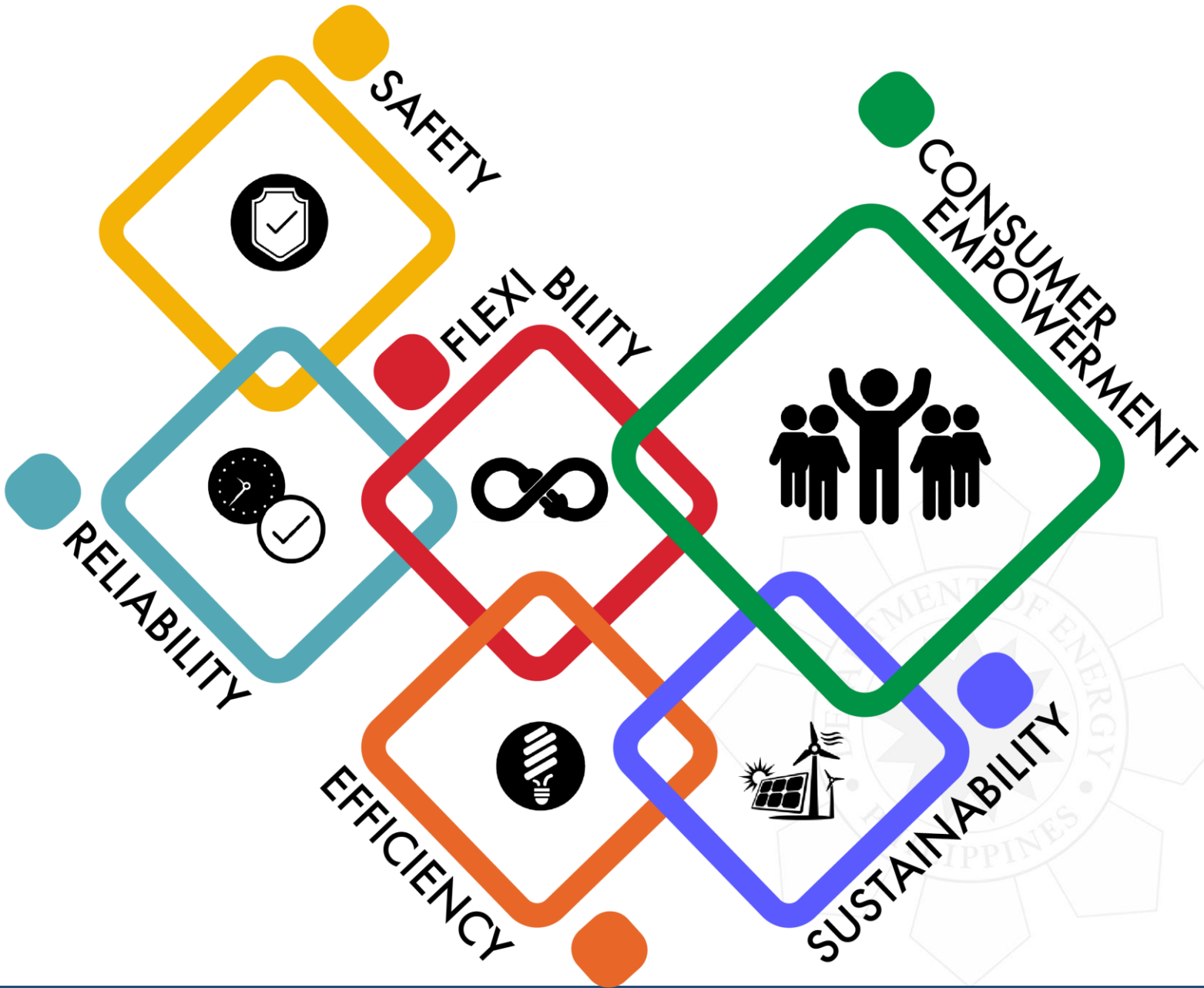
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# Aspects of Smart Grid



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# Smart Grids for Consumer Empowerment and Energy Efficiency

## ICT and Cybersecurity: System and Infrastructure Preparedness

Summary Status: Current ICT and infrastructure is not ready for smart grid systems

### Issues

Theft

Lack of connectivity in remote areas  
Weak signal

Limited operating frequency

High cost of systems

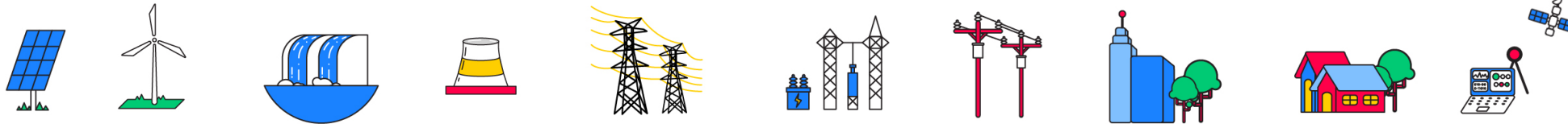
### Recommendations

Install line at 69 kV (overhead fiber optics)

Needs support of telecommunication companies

Proper frequency management by NTC

Government funding support for required investments



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# Smart Grids for Consumer Empowerment and Energy Efficiency

## ICT and Cybersecurity: Security protocols and standardization for inter-operability

Summary Status: There are many standards but no uniform standards for all

### Issues

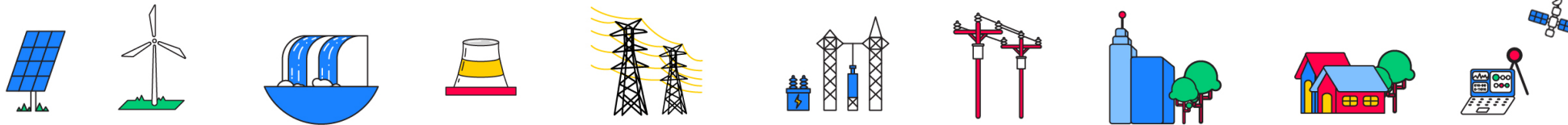
Lack of security on control systems protocol

Lack of harmonized data security and processing

### Recommendations

Development of Philippine standards compliance program across all sectors  
Adoption of existing industry-acceptable standards (e.g. ISO 27001)

Conduct of research on best practices on proven and well-known systems and pr



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# Smart Grids for Consumer Empowerment and Energy Efficiency

## ICT and Cybersecurity: Data privacy and security

**Summary Status:** The abundance of data captured in the system requires appropriate strategies in security and management

### Issues

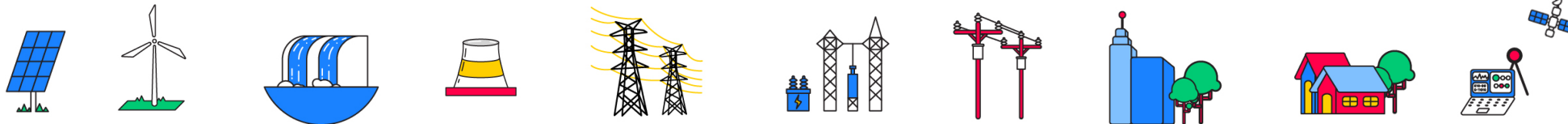
Identity theft and security of data

Lack of appropriate skills for cybersecurity management

### Recommendations

Creation of private networks; data diode and firewall  
Implementation of disaster recovery data centers  
(where data are mirrored and back up)  
Cloud-based services and in-memory base storage

Assessment and consequent conduct of applicable  
capacity building activities



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# Smart Grids for Consumer Empowerment and Energy Efficiency

**ICT and Cybersecurity:  
Fast-paced technology  
development**

**Summary Status: Inability of the system to adopt the available technologies on cybersecurity and ICT**

## Issues

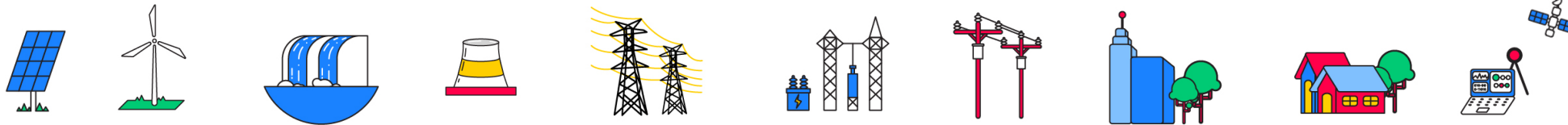
Fast technology transition

No domestic production of technologies

## Recommendations

Identification of applicable technology on operations technology and smart grid systems

DOST to spearhead the research and development of home grown technologies



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