

S M A R T
G R I D
FORUM

November 29, 2017



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Developing and Scaling-up Smart Grids for Consumer Empowerment and Energy Efficiency

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POWER SYSTEM
OPERATION



SUSTAINABLE &
RENEWABLE ENERGY

CONSUMER
EMPOWERMENT



TECHNICAL
WORKING
GROUPS



ICT &
CYBERSECURITY

REGULATORY
SUPPORT



STANDARDIZATION



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Smart Grids for Consumer Empowerment and Energy Efficiency

Power Systems (System Inter Operability)

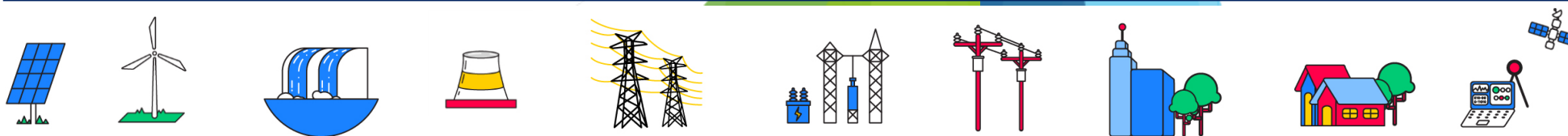
Summary Status: The generation, transmission, and distribution sectors have sufficient levels of smart grid systems for reliability and efficiency within their respective jurisdictions; however, inter-operability systems are insufficient for stronger network resilience and flexibility.

Issues

- Current configuration of transformers limit transmission-distribution interface specifically for parallel connections;
- Information sharing between generation, distribution, and generation is insufficient, hindering integrated planning and forecasting

Recommendations

- As part of a long term plan, upgrade transformers to increase the resilience and flexibility of both transmission and distribution grids;
- Mandate and enforce information sharing mechanisms among the generation, transmission, and distribution sectors to aid monitoring and forecasting



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Smart Grids for Consumer Empowerment and Energy Efficiency

Power Systems (Network Integrity)

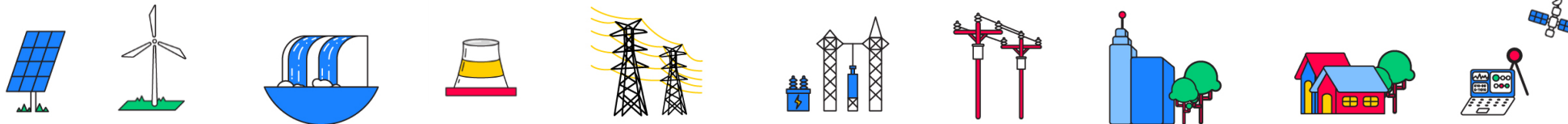
Summary Status: Physical disruption continue to affect transmission and distribution lines effectively preventing plans for smart grid systems

Issues

- Hazardous trees and vegetation disrupt transmission and distribution lines;
- Infrastructure construction activities disrupt transmission and distribution lines;

Recommendations

- Strengthen the fundamental integrity of network systems before implementing smart grid systems;
- Support the passing of the Anti Power Line Disruption Bill;
- Increase interagency coordination specifically between DOE and DPWH through its MOU provided under the Amended NEA law and with DENR for enhancing policies on tree cutting;
- Assess the feasibility of underground cables and include it as an option in resiliency initiatives



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Smart Grids for Consumer Empowerment and Energy Efficiency

Power Systems (Policy on Ancillary Services)

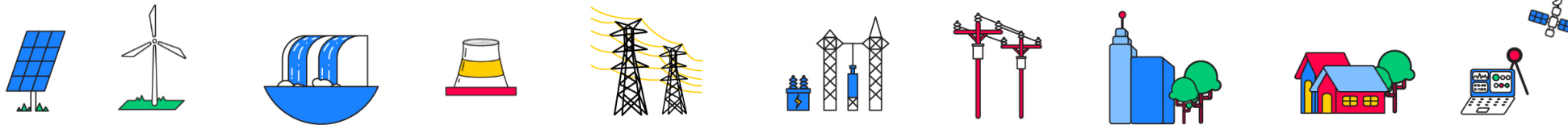
Summary Status: New technologies or systems for ancillary services are available for strengthening grid reliability and flexibility but deployment or adoption is still limited

Issues

- Policies on the use of ancillary systems particularly power storage systems for transmission and distribution grid application are not clear

Recommendations

- Revisit and push policies and initiatives on the competitive reserves market;
- Clarify or formulate regulatory policies (technical and capital expenditures) on the use of power storage systems for distribution applications;



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Smart Grids for Consumer Empowerment and Energy Efficiency

Power Systems

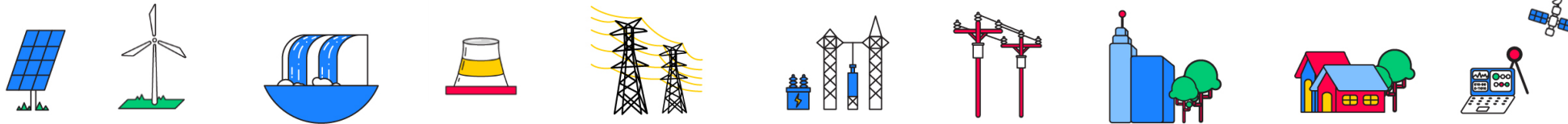
Summary Status: The generation, transmission, and distribution sectors find smart grid systems beneficial but investments are limited due to policy constraints (Policy on Capital Expenditure)

Issues

- Unclear policy on capital expenditure for smart grid systems, smart grid systems not considered as necessary or “must haves”;
- Delayed approvals on capital expenditure for smart grids

Recommendations

- Clarify or formulate regulatory policies on smart grid use (technical and capital expenditures) to facilitate the investments into and deployment of smart grid systems



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Smart Grids for Consumer Empowerment and Energy Efficiency

Power Systems (Technology/Equipment)

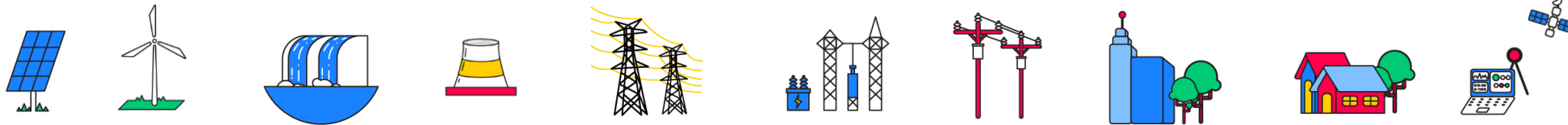
Summary Status: There are numerous options for smart grid technology but there is a need to balance equipment choice with operational costs

Issues

- Equipment becoming obsolete before valuated lifespan;
- Costly upkeep of licenses and annual fees for smart grid equipment

Recommendations

- Review and update the asset valuation methodology of the Energy Regulatory Commission to suit current and foreseen obsolescence of equipment;
- DOE to coordinate with DICT / NTC to explore other options for annual fees to reduce costs of smart grid systems



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Smart Grids for Consumer Empowerment and Energy Efficiency

Power Systems (Skills Development)

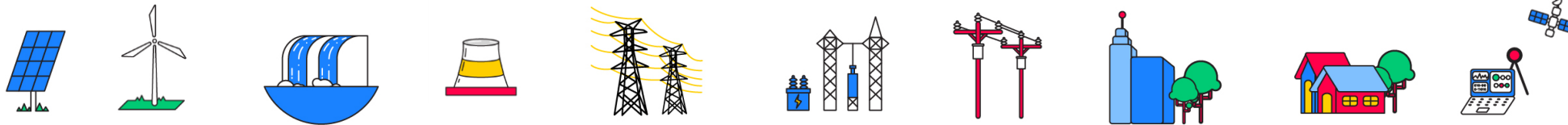
Summary Status: Smart grid systems deployment and operation is rapidly growing and requirement for specialized skills is also growing

Issues

- High turn over rate of skilled and qualified smart grid workers
- New smart grid technologies are rapidly emerging and are not covered by current training modules and continuing education curricula

Recommendations

- Conduct of regular in-depth technical conferences on smart grid technologies and systems;
- Explore partnerships with higher education institutions to develop or expand instruction on smart grid systems



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Smart Grids for Consumer Empowerment and Energy Efficiency

Power Systems (Distributed Generation)

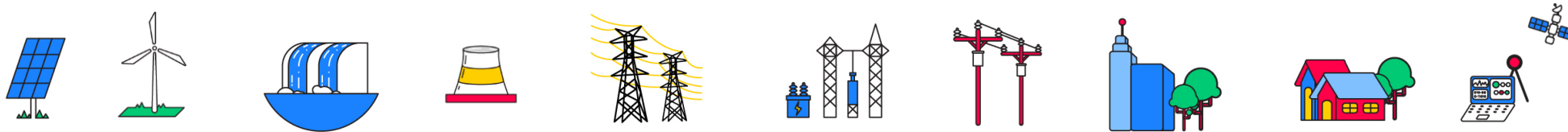
Summary Status: Distributed or embedded generation using variable renewable energy are rapidly being deployed within DU/EC; however, there are issues on franchise infringement, stranded assets, and negative impact on the grid

Issues

- Deployment of distributed generation are not sufficiently monitored and causes disruptions in the DU grid when reaching critical mass;
- Distributed generation can cause economic and technical challenges to both the DU and the customer “defecting” if the distributed generation system fails.

Recommendations

- Benchmark global and local initiatives and policies on distributed generation;
- Clarify or formulate policies on distributed generation (with due consideration to net metering, RCOA, and GEOP) policies to aid in balancing distribution utility objectives and constraints with distributed generation development



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Smart Grids for Consumer Empowerment and Energy Efficiency

Power Systems (Micro-grid Systems)

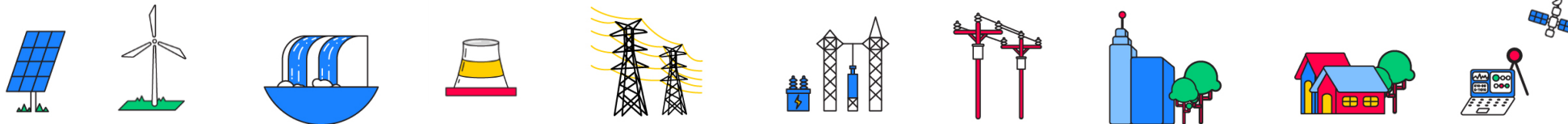
Summary Status: A number of full system micro-grid systems are underway for off-grid areas but a lot of work still needs to be done to reach more remote island and upland areas

Issues

- Off-grid / SPUG areas require more investments into new generation technologies and smart grid systems
- There is no clear policy or guidelines on rate setting for off-grid areas

Recommendations

- Revisit investment plans for off-grid areas and where appropriate, push for the implementation of programs and projects;
- Enhance existing rate setting policies or formulate new policies to cover off-grid areas considering different technical and business conditions



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Thank You!

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