

Challenge: How to Improve Electric Grids

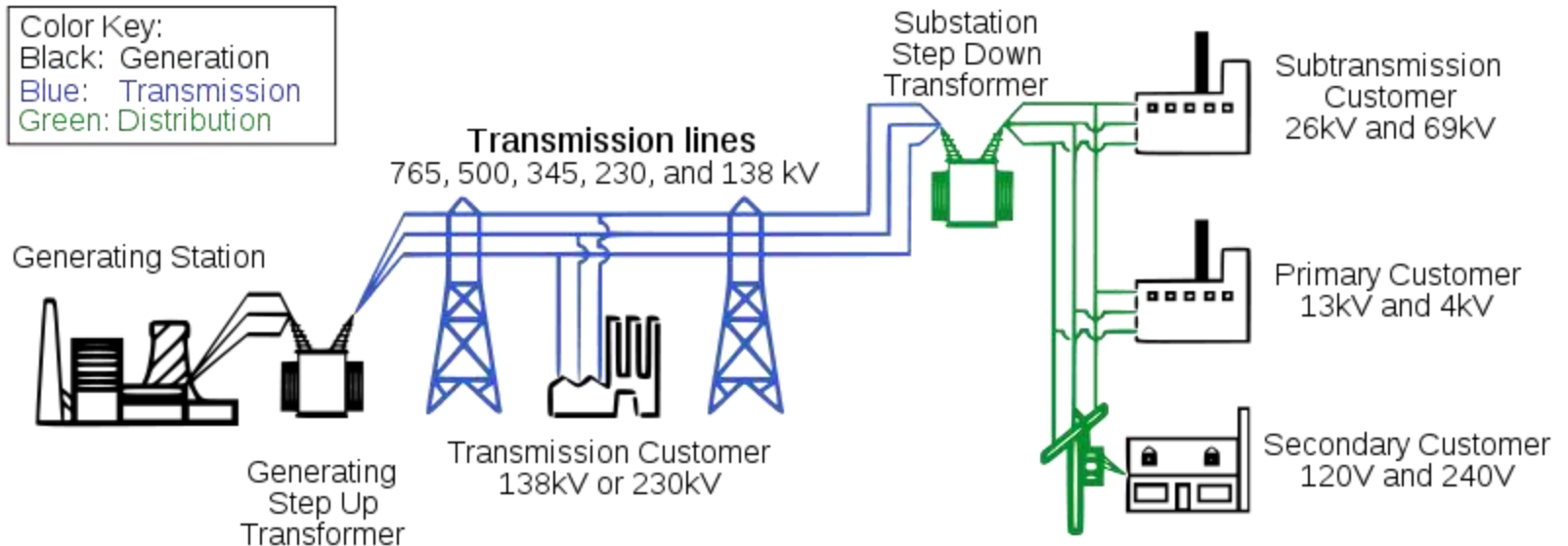
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Current Electric Grid:

Electric Power Transmission:

- Bulk transfer of electrical energy



Current Problems:

1. Excessive Power Demands
2. Black Outs
3. Inefficient Transmission
(Electricity lost through Resistance)



Solution:



Smart Grid Technology



What is a Smart Grid?

- Delivers electricity to consumers using two-way digital technology to control appliances at consumer's homes to save energy, reduce cost and increase reliability and transparency.

ISO-New England



-Ensure the constant availability of electricity by:

1. Providing
2. Overseeing
3. Managing



Smart Grid Technology

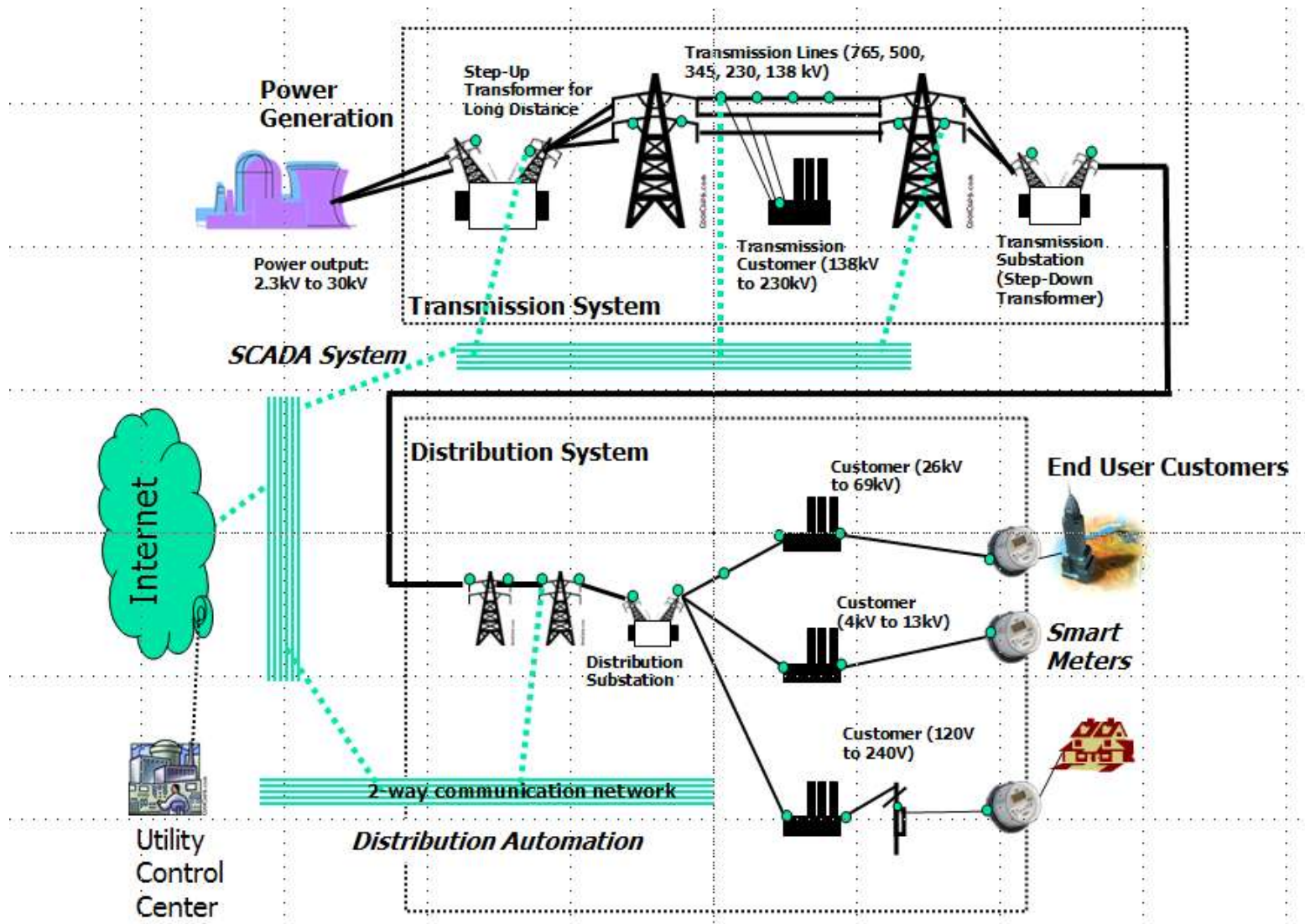
Supply:

- Microgrids
- Distribution Generation
- Electric Energy Storage

Demand:

- Advanced Metering
- Home-Area Networks
- Smart Appliances

Smart Grid



Smart Grid

Transmission – The Flow of Electricity

Resistance –
(cost)

Lost Electricity
during Transmission



Smart Grid

- Real-time transmission information
- The Extended Model - Control
- Downed lines: Locating and Rerouting



Questions?

