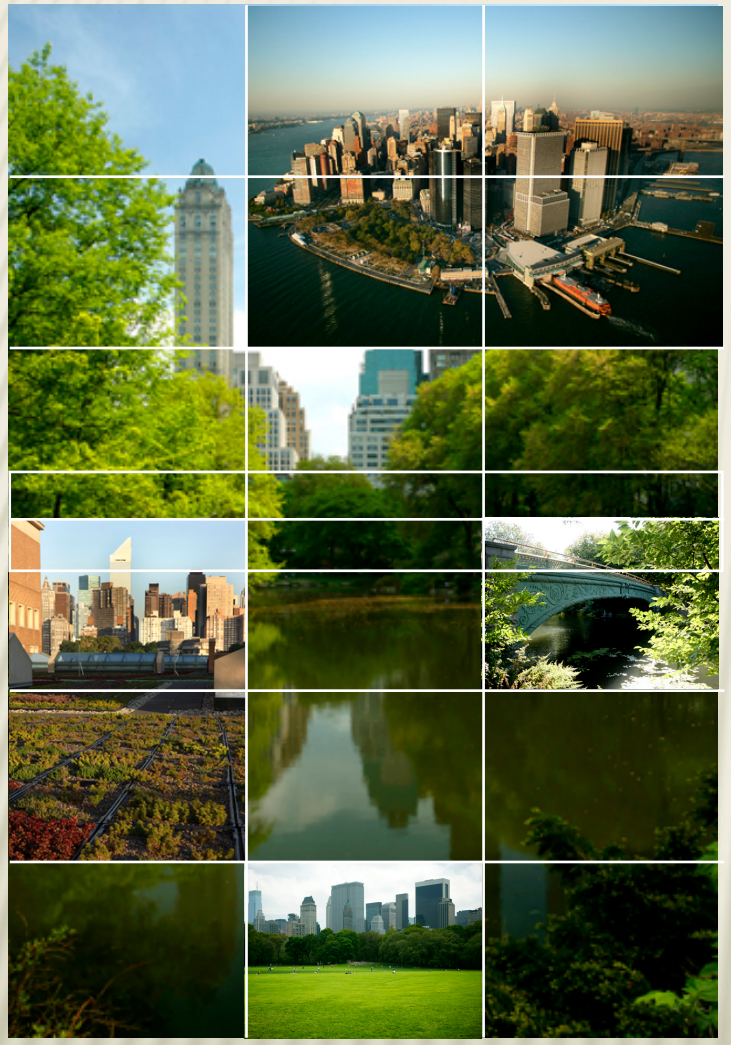


Arthur Kressner

CON EDISON'S ELECTRIC SYSTEM
NEW YORK CITY AND WESTCHESTER COUNTY

- 3.2 million customers, 14-16 million people
- 36,000 miles of overhead lines
- 94,000 miles of underground lines
- 80 local distribution networks

OVERVIEW

Substations

Transmission	37
Sub-Transmission (Area)	60
Distribution Transformer Vaults	78,700

System Voltages

Transmission	345kV, 500kV
Sub-Transmission	138kV, 69kV
Primary Distribution	33kV, 27kV, 13kV, 4kV
Secondary Distribution	120/208V, 460V

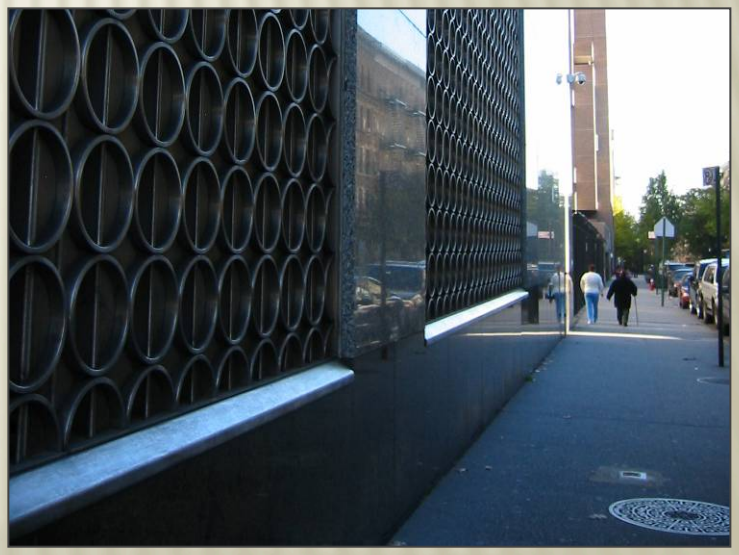
Distribution Design Criteria

N-2 in high density

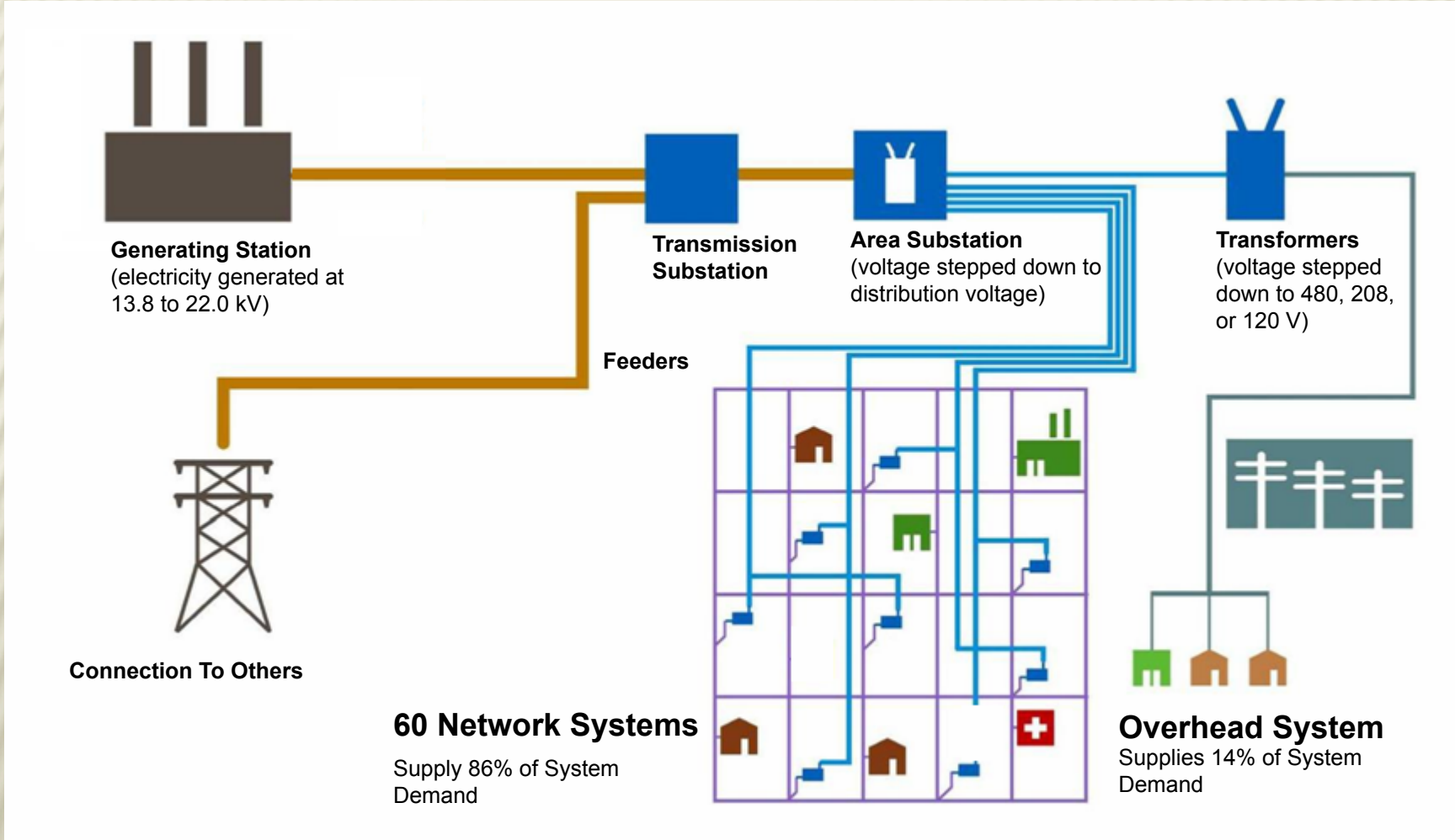
N-1 minimum throughout entire system

Low voltage distributed grid and spot networks

Area Substation



CON EDISON ELECTRIC DISTRIBUTION SYSTEM

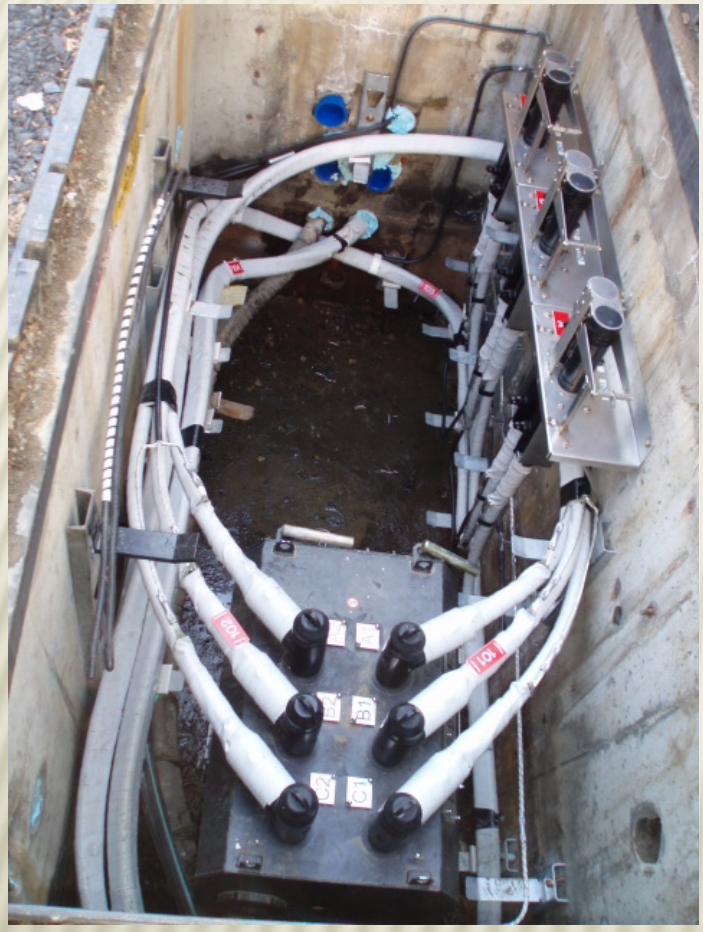


UNDER THE STREETS

Why the "Smart GRID"?

- Photovoltaic and Wind Power are getting more efficient and lower cost – intermittent and unreliable
- Electric vehicles are emerging – a mobile and large new use for electricity
- Customers want choices - to generate their own power and buy power from others,local options
- Electricity is increasingly vital to our personal, economic and societal well being
- The existing grid is aging and incompatible with these changes

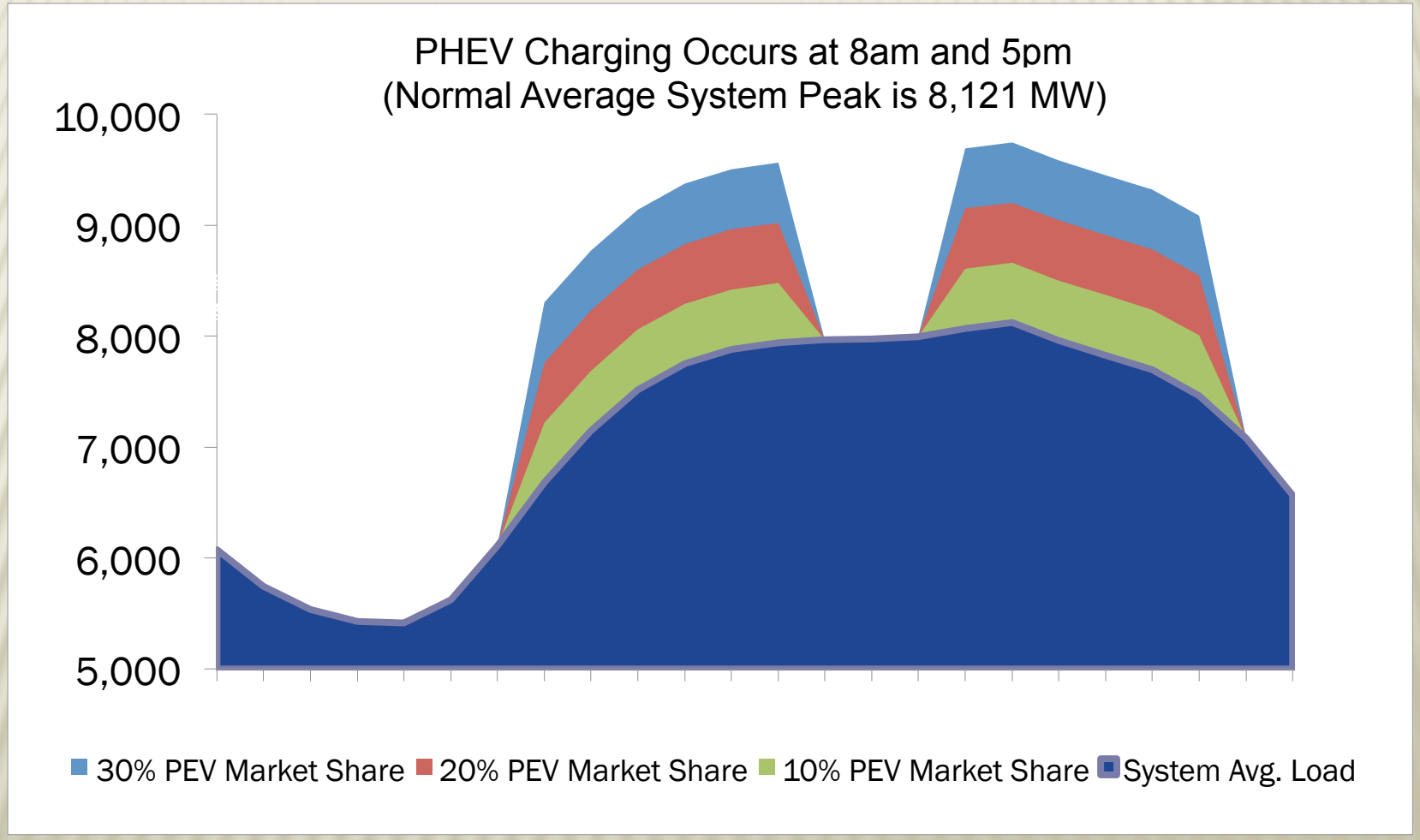
FAST SWITCH DEMONSTRATION



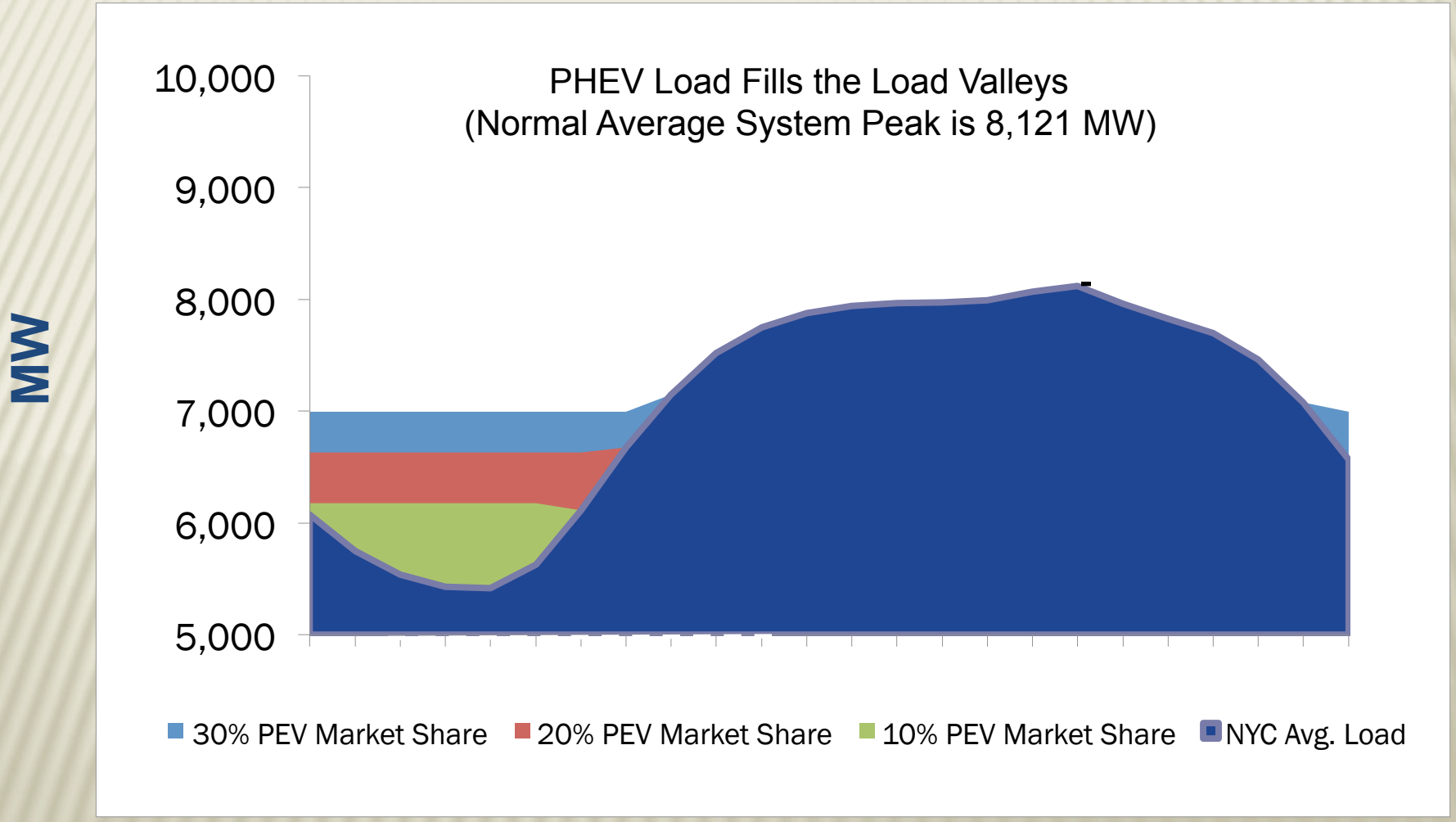
- sectionalizing and reconfigures feeders

The “ROUTER” for the grid

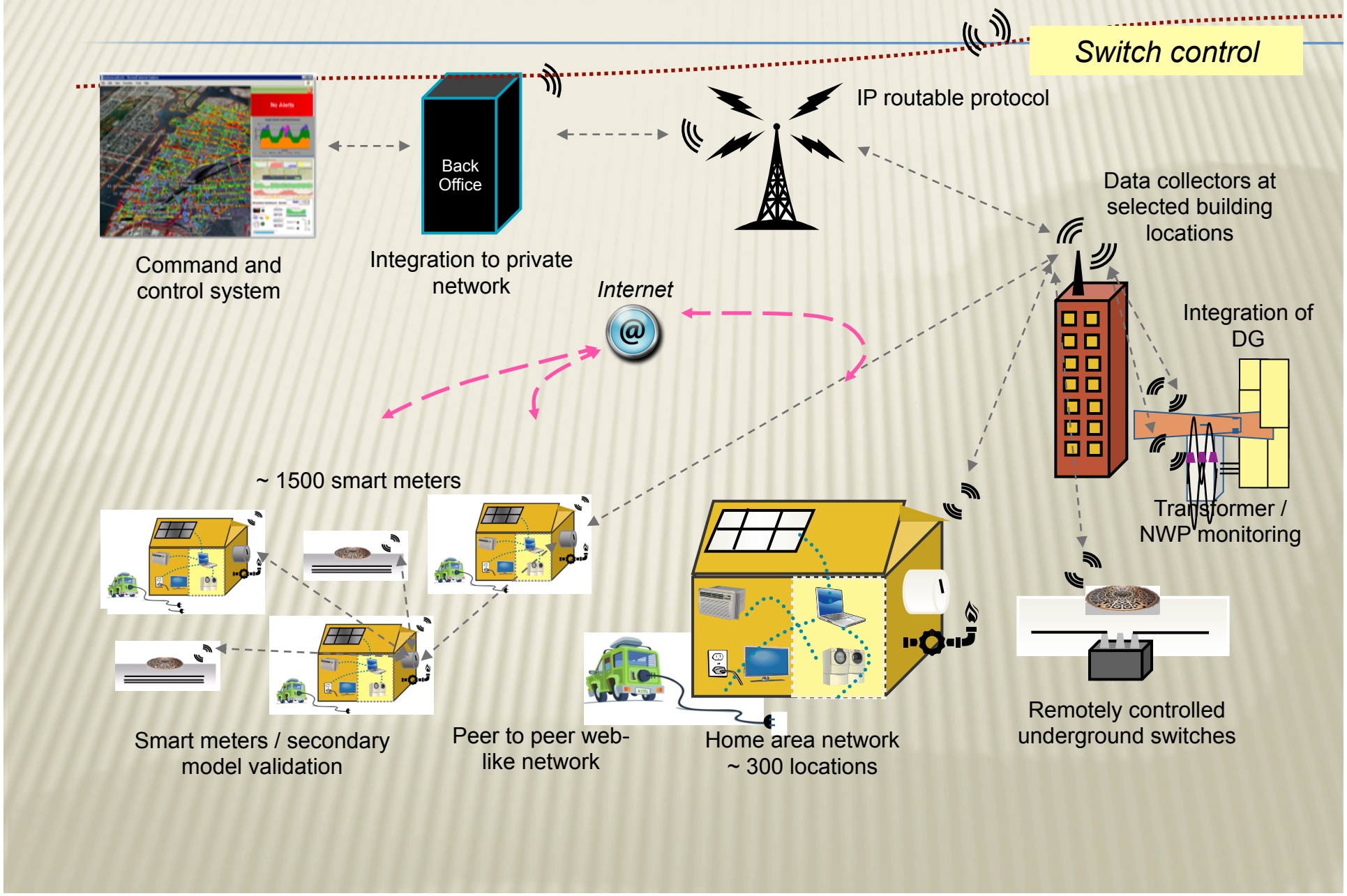
CON EDISON OPPORTUNITIES / CHALLENGES



CON EDISON OPPORTUNITIES / CHALLENGES



SMART GRID DEMONSTRATIONS



Smart Grid