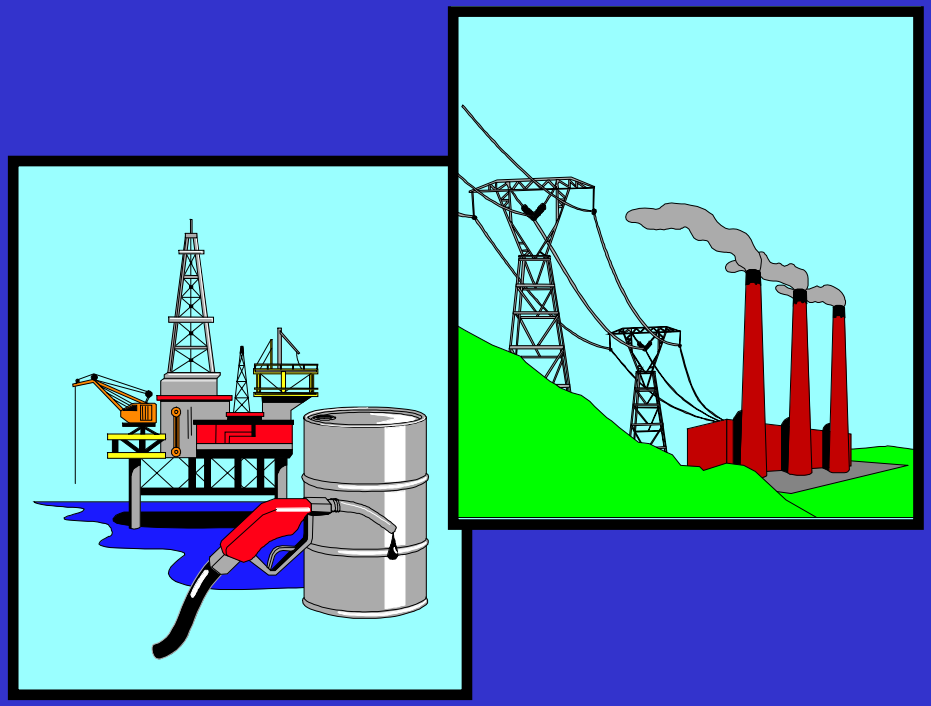
Energy Sector

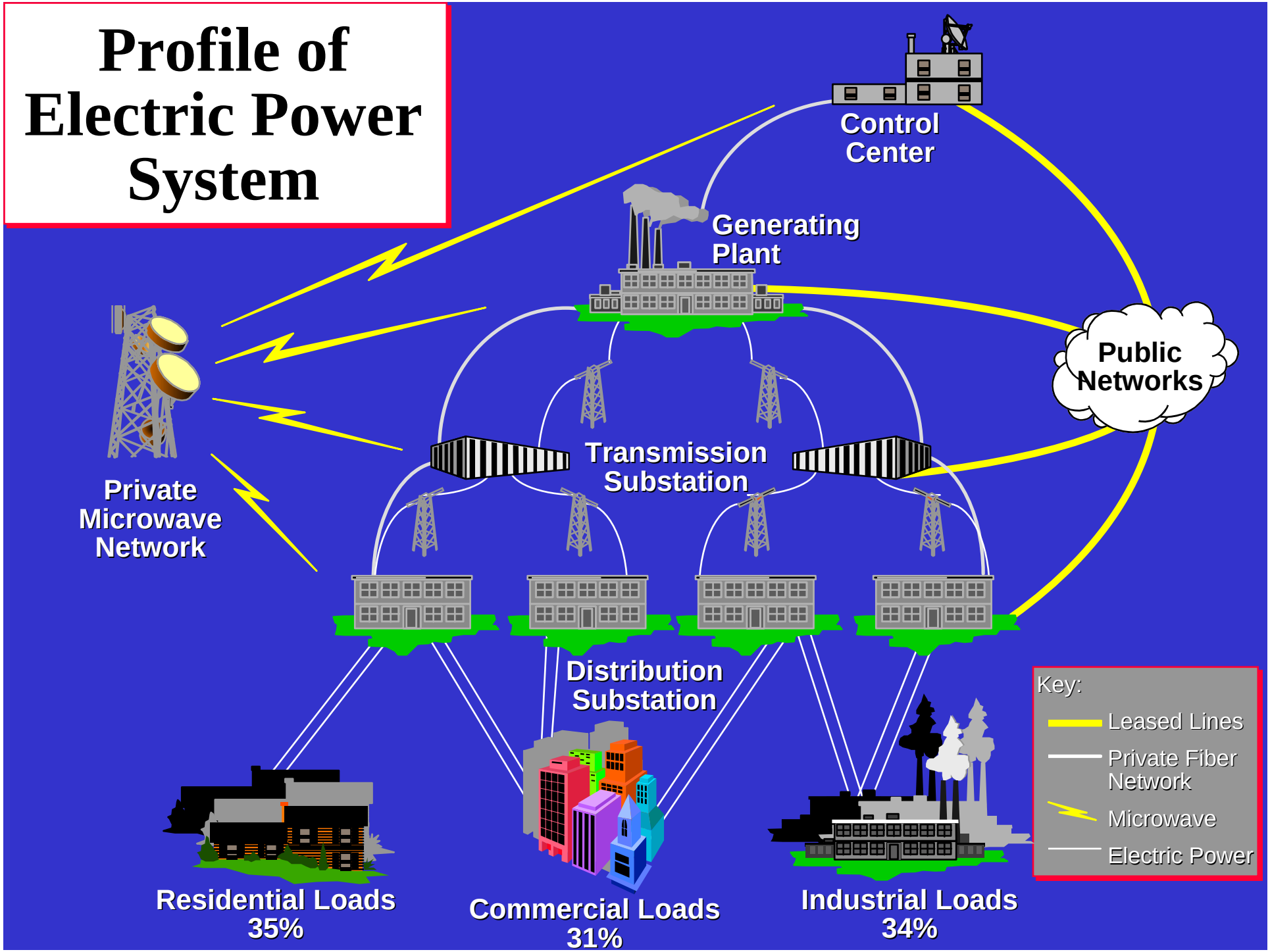
The Lifeblood of the Critical Infrastructures



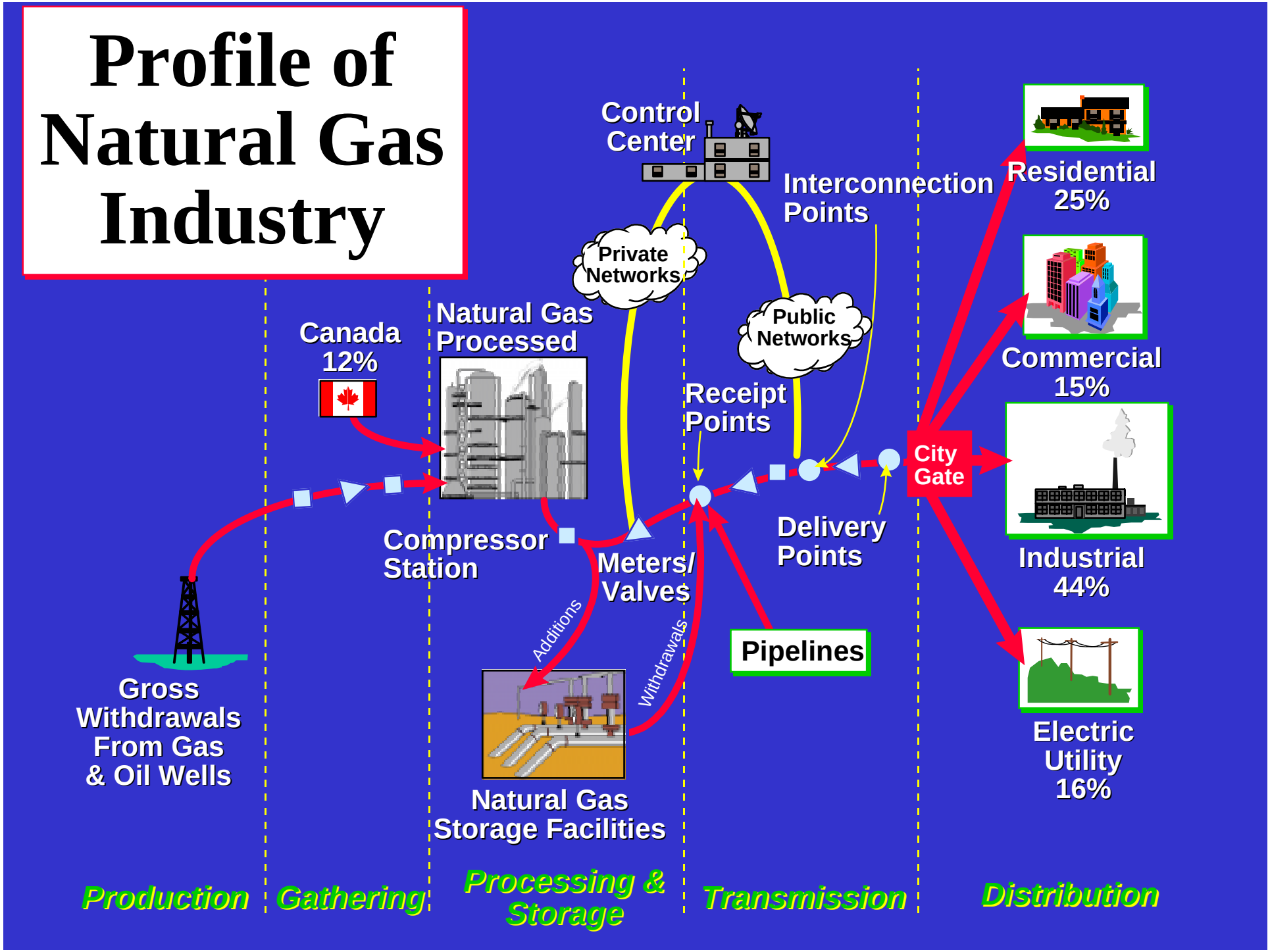
Electricity
Natural Gas
Oil

David Jones
Commissioner

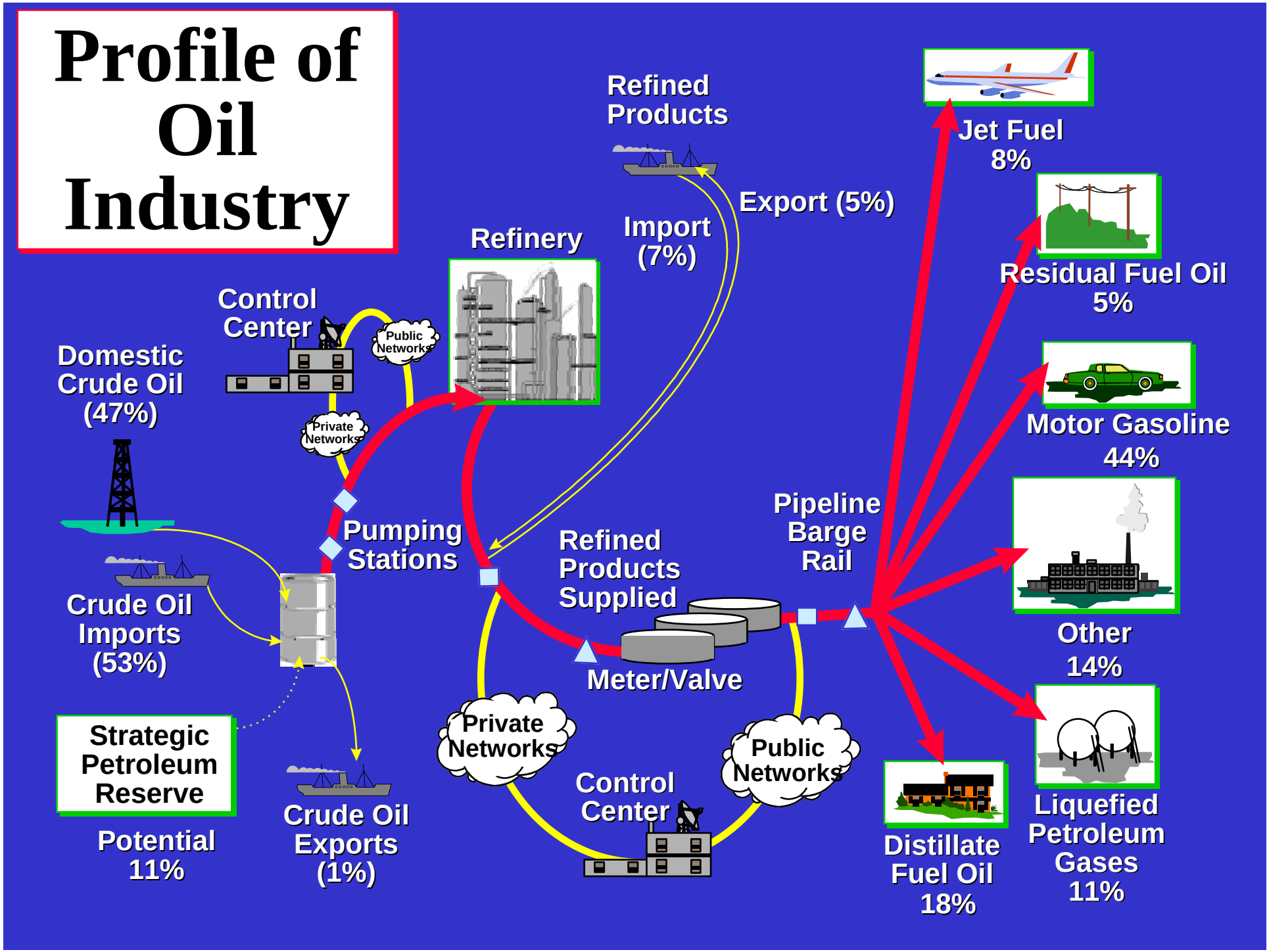
Profile of Electric Power System



Profile of Natural Gas Industry



Profile of Oil Industry



Trends

- Electric power and natural gas restructuring
  - Mergers, marketing, financial systems, consolidation of resources, downsizing, reduced reserves/capacity
  - Reliability concerns
- Significant increase in use of natural gas
- Oil
  - Lower profit margins
  - Downsizing
- Dependence on information

Energy Incidents

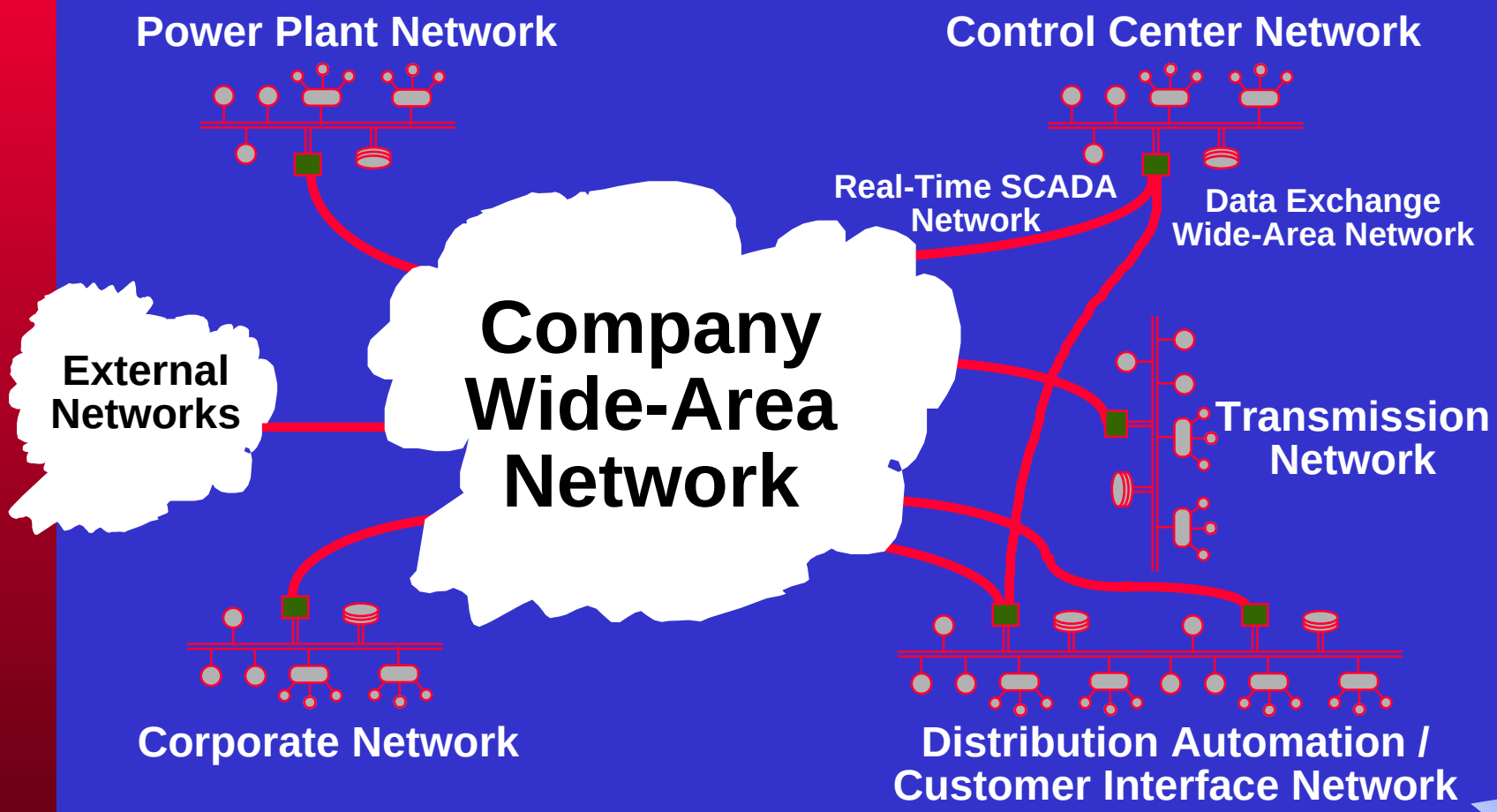
Energy Data Base Documents over 15,000 World-Wide Incidents (1,000 in U.S.) During Last 15 Years

- June 1992 - emergency alert alarm system software modified
- July 1996 - London infrastructure IRA attack interrupted

Vulnerabilities

- Major expansion of information systems
- Commercial Off the Shelf (COTS) products
- Internet
- Supervisory control and data acquisition systems
- Availability of tools to exploit cyber vulnerabilities
- Availability of targeting/critical node information
- Physical vulnerabilities of critical assets

Integrated Utility Network



Key Issues

- Information sharing
- Cyber intrusion database
- Training & awareness
- Information assurance tools
- Physical & cyber security best practices/standards

Preliminary Recommendations

- Enhance information sharing
- Process to protect sensitive private sector information shared with government
- Industry & government develop “best practices”
- Testbed/pilot project to demonstrate infrastructure assurance program
- Double research and development efforts

Preliminary Recommendations (*cont'd*)

- Industry recommendations to support:
  - Establish national standards for "one-call" program
  - Review/revise existing regulations on excessive reporting of sensitive information
  - Allow military/national guard use in time of war or credible terrorist threat
  - Form a joint center (government/industry) for sharing threat and vulnerability information
  - Joint effort industry and government to analyze cyber threats and develop countermeasures