



Litgrid

CYBERSECURITY OF ELECTRICAL GRID

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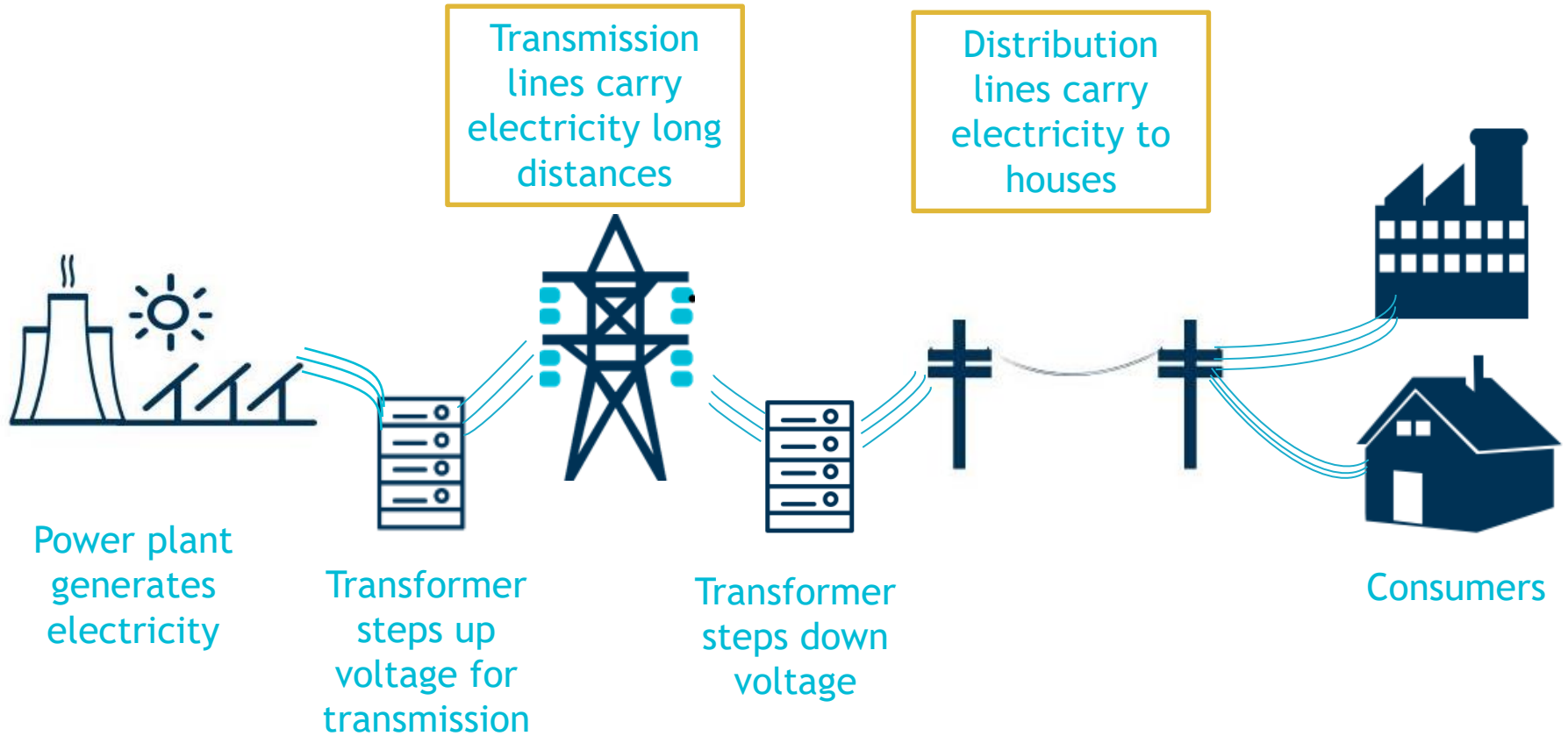
Information security manager, Litgrid

Industrial Cyber Security Professional (GICSP)

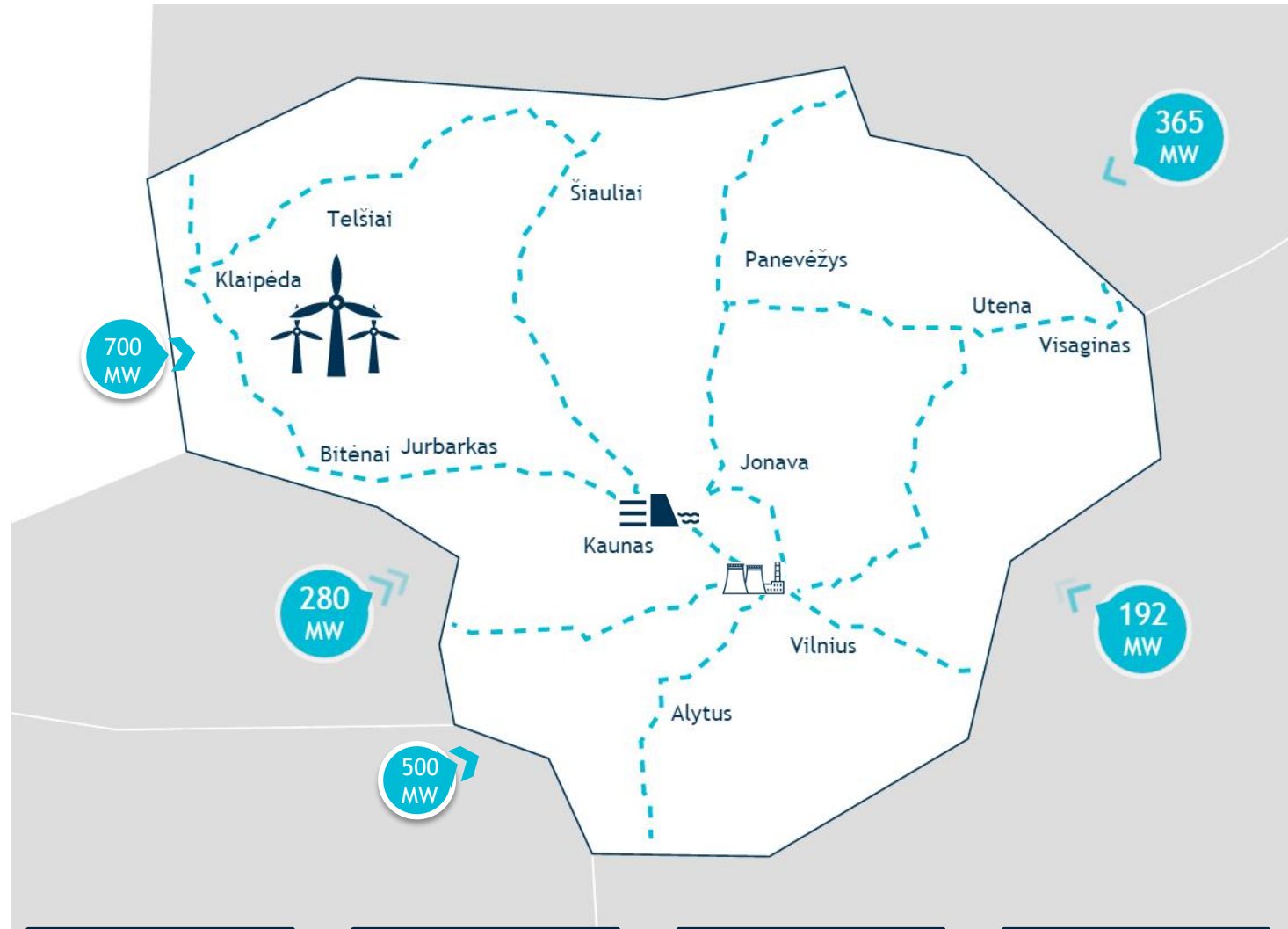
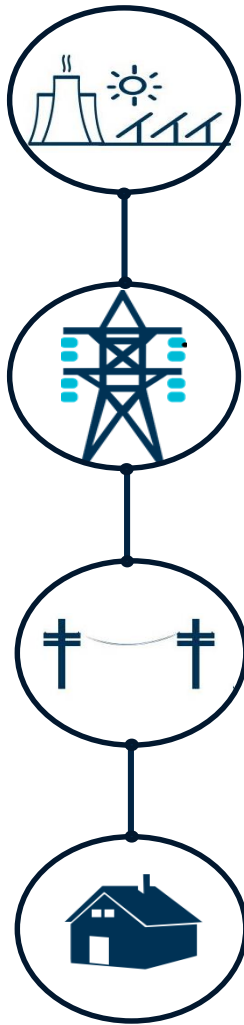
Certified Incident Handler (ECIH)

CompTIA Security+ Certified Professional

Power system

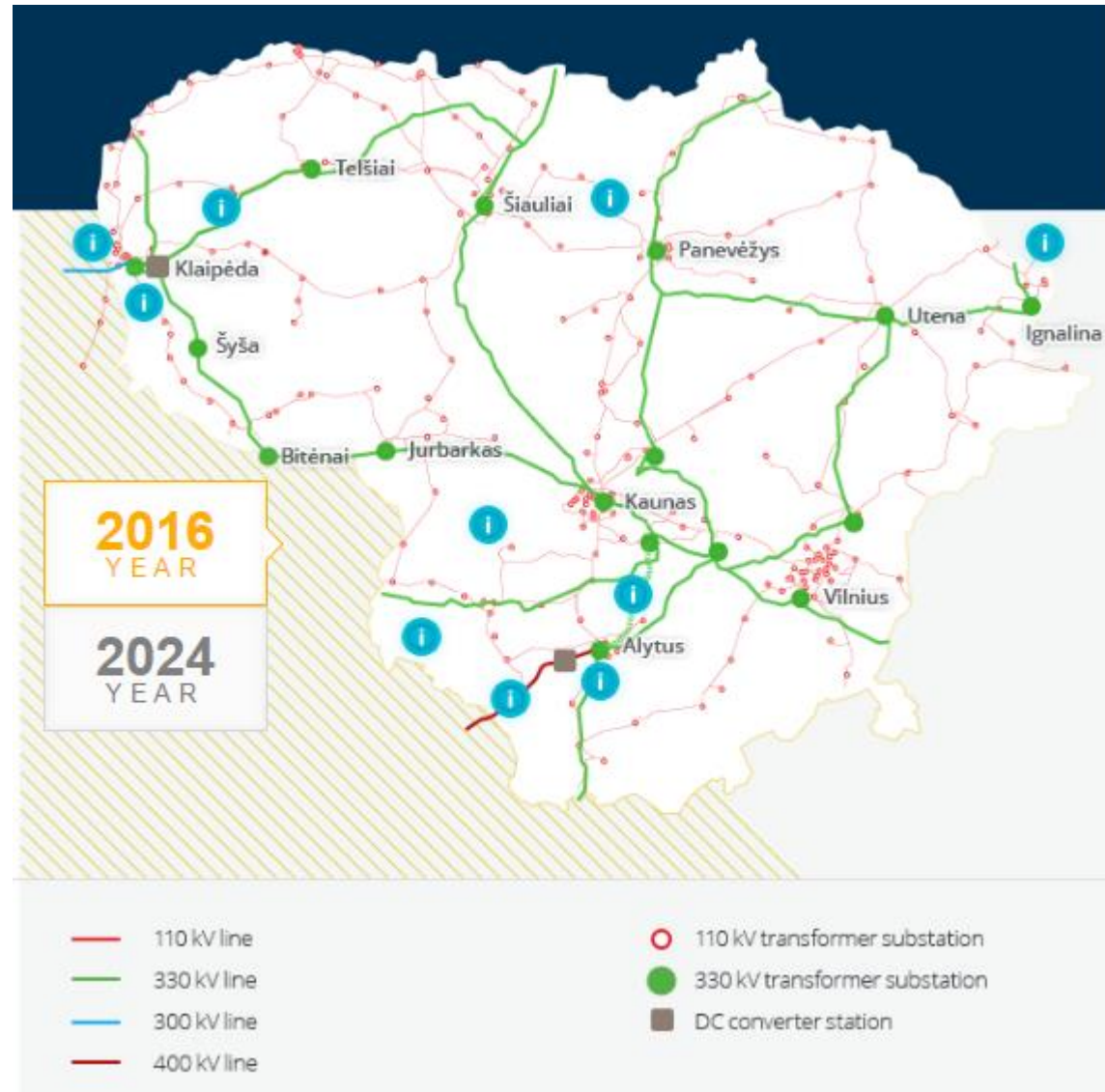


Electricity transmission never stops



The grid

- > 7 000 km lines and substations of 400, 330, 110 kV transmission grid
- > 2 500 km optical cable



Management system



Different actors

Operators

Regulators

Manufacturers

Integrators

Service
providers

Producers

Consumers

Attacks on electrical grid

- 2013 California sniper attack on substation
- 1996 IRA planned attack on London HV electrical substations
- 1959-72 KGB plan to destroy two large hydroelectric dams in Montana



Cyber attacks on control systems

- 1982 Siberian gas pipeline explosion
- 2010 Stuxnet
- 2013 "some disruption" at the nuclear power plant by cyber attack
- 2015 Ukraine power distribution grid attack

Cybersecurity requirements



Local laws



Contractual
obligations



Best
practices



Best practices

- ENTSO-E security practices
- NIST 800-82 Guide to Industrial Control Systems (ICS) Security
- NISTIR 7628 Guidelines for Smart Grid Cybersecurity
- NERC Critical Infrastructure Protection

Best practices (cont.)

- BDEW Requirements for Secure Control and Telecommunication Systems
- ISA/IEC-62443 Security for industrial automation and control systems
- IEEE 1686 Standard for Intelligent Electronic Devices Cyber Security Capabilities

Protection

- Penetration tests
- Social engineering tests
- Awareness program
- Continuity plans for blackout
- Recovery exercises
- Redundant high security operational and data centers
- Participating in NATO ENSEC COE and MoD trainings



Litgrid mission:

Ensure reliable transmission of electricity and enable competition in the open electricity market

Litgrid vision:

Full integration of the Lithuanian power system into the European power infrastructure and the common electricity market