



Cyber Security

Cyber Security Regulation in Brazilian Electric Power System.

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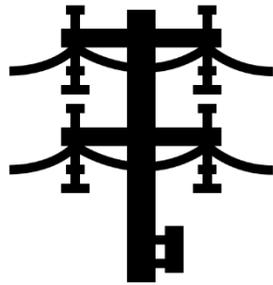
Brasília, March 24th of 2021

Diversity of the sector

Distribution, Generation, Transmission

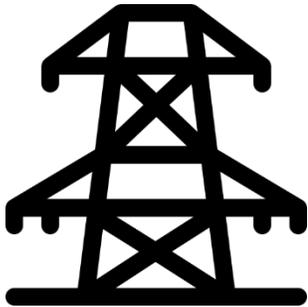
- *Type of services;*
- *Monopoly vs. competition;*
- *State owned versus private companies.*

Diversity of the sector



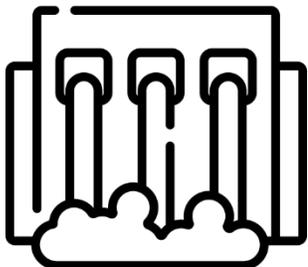
Distribution

- Largest with more than 11 million consumers
- Smallest with 1,000 consumers



Transmission:

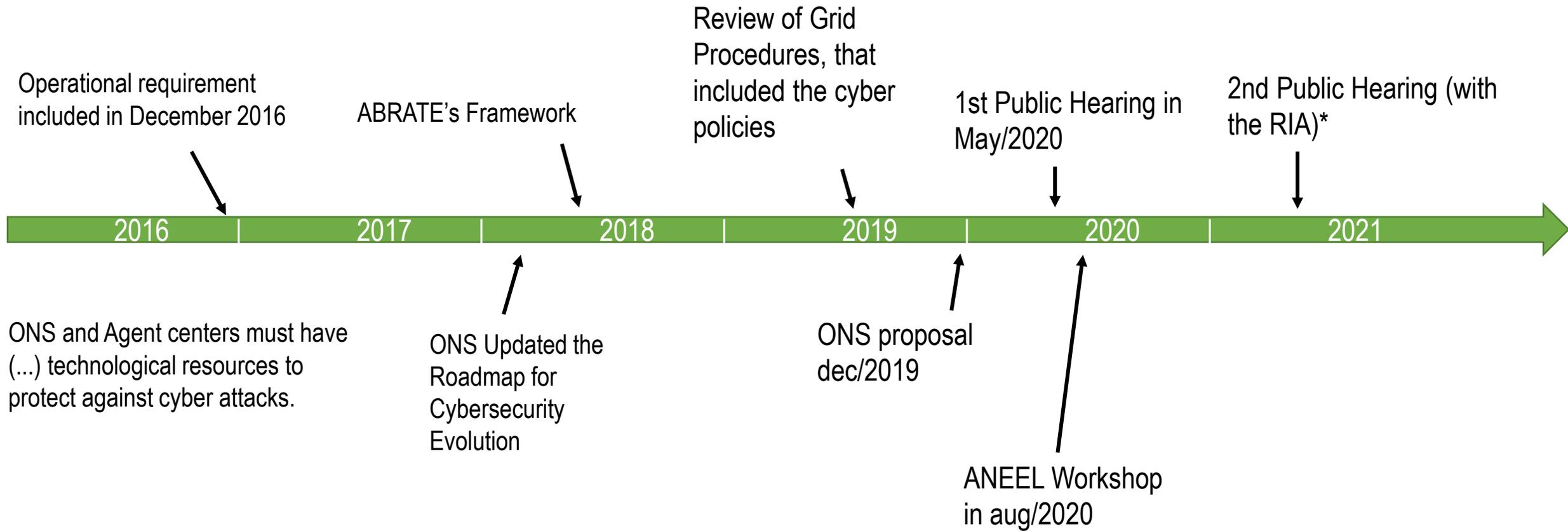
- Largest with revenue of R\$ 2 billion
- Smallest with revenue of R\$ 1.1 million



Generation

- 5 MW to 14 GW Itaipu

Chronology



* CP 7/2021, opened until April 26th

Regulatory Problem, causes and consequences

Risk of cybersecurity incidents in the Electric Power System.

General and specific objectives

Minimize the impacts of cybersecurity incidents on the electric power system.

Desired goals

- *Increased resilience of ONS (Brazilian ISO) systems and agents connected to the Operator;*

Alternative solutions

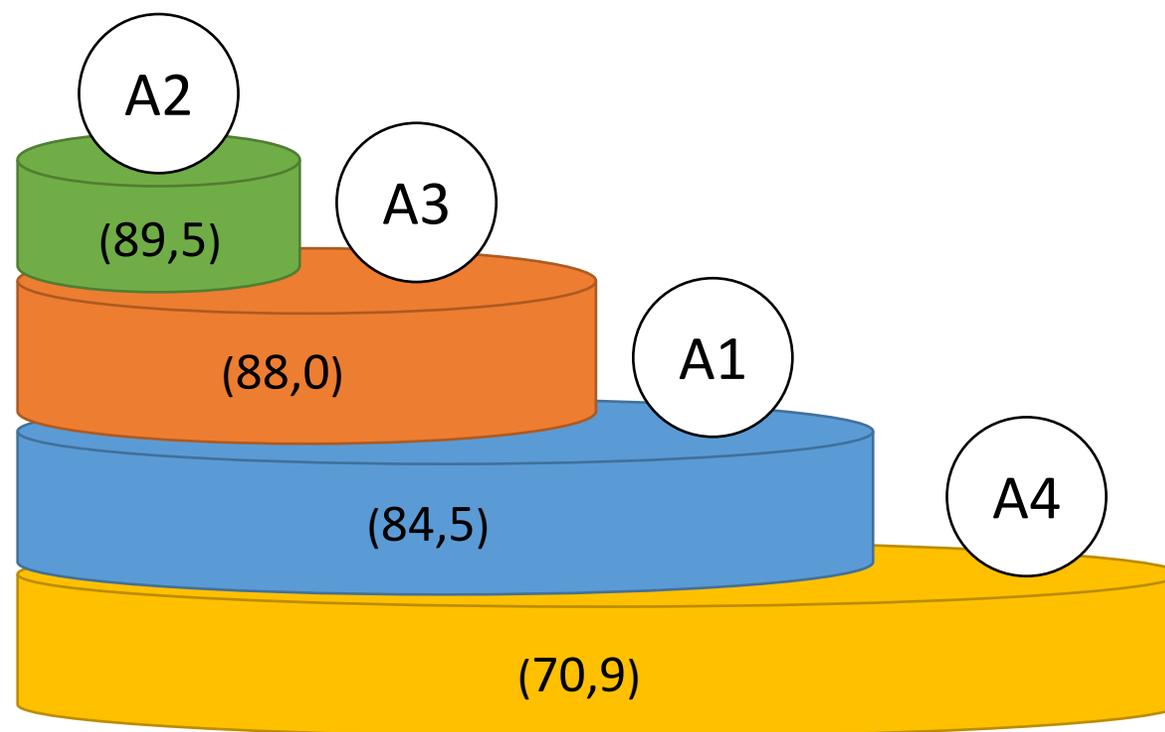
- *Alternative 1 (A1): Do not regulate;*

Alternative Choice Analysis – Risk matrix

Risk of cybersecurity incidents in the Electric Power System

Alternative choice analysis – Evaluation Criteria

- Implementation time
- Degree of effort
- Simplification
- Administrative burden
- Regulatory impact
- Applicability
- Society acceptance
- Political acceptance
- Available technology
- Available knowledge
- Available resources



Decision matrix

Alternatives	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Risk Analysis Position	4º	3º	1º	1º
Criteria Evaluation Position	3º	1º	2º	4º



AGÊNCIA NACIONAL DE ENERGIA ELÉTRICA

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