

NAME : Paulo R Antunes de S Jr  
COUNTRY : Brazil  
REGISTRATION NUMBER : 5534

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**Question 2.4:** What is the impact (financial, technical, etc.) of a more prescriptive regulatory approach for EPU's?

In Brazil, this topic was deeply discussed between ANEEL (National Agency for Electrical Energy) and society. From 02/09/2021 to 18/10/2021 ANEEL collected contributions to discuss the impact of a regulatory cyber security framework for EPU's. Cigre Brasil took the chance to answer all the questions raised by the Agency.

The goal of this open discussion between regulator and society (EPU's, suppliers, consultants, etc.) was to understand if a official framework was needed or not in Brazil, given the scenario observed in 2021. In this moment, in the middle of pandemic, an increase of cyber security incidents was perceived in several energy utilities (generation, transmission and distribution energy companies). According to ANEEL, the target of the framework (if needed) would be to mitigate the impact of cyber security incidents in the transmission and generation grid in Brazil.

In the questions raised by ANEEL, the most important was about the type of regulation. Agency suggested 4 scenarios (Being 1 less prescriptive and 4 more prescriptive):

1. No regulation from ANEEL
2. Guide and disseminate best practices for cybersecurity to sector agents.
3. Regulate cybersecurity policy items
4. Regulate more prescriptive requirements for cybersecurity

After collecting all the data, ANEEL prepared a report detailing the results and also the conclusion from internal workshops in the Agency. Full report can be found here:

[https://antigo.aneel.gov.br/web/guest/consultas-publicas?p\\_p\\_id=participacaopublica\\_WAR\\_participacaopublicaportlet&p\\_p\\_lifecycle=2&p\\_p\\_state=normal&p\\_p\\_mode=view&p\\_p\\_cacheability=cacheLevelPage&p\\_p\\_col\\_id=column-2&p\\_p\\_col\\_pos=1&p\\_p\\_col\\_count=2&participacaopublica\\_WAR\\_participacaopublicaportlet\\_ideDocumento=44702&participacaopublica\\_WAR\\_participacaopublicaportlet\\_tipoFaseR euniao=fase&participacaopublica\\_WAR\\_participacaopublicaportlet\\_jspPage=%2Fhtml%2Fpp%2Fvisualizar.jsp](https://antigo.aneel.gov.br/web/guest/consultas-publicas?p_p_id=participacaopublica_WAR_participacaopublicaportlet&p_p_lifecycle=2&p_p_state=normal&p_p_mode=view&p_p_cacheability=cacheLevelPage&p_p_col_id=column-2&p_p_col_pos=1&p_p_col_count=2&participacaopublica_WAR_participacaopublicaportlet_ideDocumento=44702&participacaopublica_WAR_participacaopublicaportlet_tipoFaseR euniao=fase&participacaopublica_WAR_participacaopublicaportlet_jspPage=%2Fhtml%2Fpp%2Fvisualizar.jsp)

Most important is to show the scenario selected by the Agency, based on the risk of the occurrence of cyber security incidents in the electric sector:

Probabilidade	Muito Alta					
	Alta				A2	A1
	Moderada					
	Baixa		A3	A4		
	Muito Baixa					
		Muito Baixo	Baixo	Moderado	Alto	Muito Alto
		Impacto				

Figura 24: Matriz de risco para o RISCO DE OCORRÊNCIA DE INCIDENTES DE SEGURANÇA CIBERNÉTICA NO SETOR ELÉTRICO.

The report published by ANEEL also compares the easiness of implementation for each scenario:

Tabela 3 – Resumo da comparação das alternativas

Alternativas	Alternativa 1	Alternativa 2	Alternativa 3	Alternativa 4
Colocação na Análise de Risco	4º	3º	1º	1º
Colocação na Avaliação dos Critérios	3º	1º	2º	4º

Showing that scenario 3 has the best position in the risk table (jointly with scenario 4, more prescriptive) and second position in terms of criteria of implementation.

I personally had the chance to participate in several group discussions with EPU's and I understood that their main concerns were the following:

- Brazil energy sector is based on concession auctions. The company that provides the lowest price for the investment won the deal and runs the concession for at least 20 years.
- When the auctions happen, no costs were considered for cyber security solutions. So EPU's were concerned that all the investments required by a more prescriptive framework would represent additional costs not foreseen and, consequently, directly impacting the revenue margins.
- At the same time, EPU's needs to maintain the system under operation. High penalties apply in case of service interruption (either due technical problems or cyber security incidents). Therefore, utilities understand that a minimum level of cyber security should be applied.
- In their perception, the best trade off between investments and cyber security was scenario 3. Which brings certain level of mitigation with a limited additional cost

As a result, a normative resolution was published by ANEEL in 14/12/2021. Full text available here: [https://antigo.aneel.gov.br/web/guest/consultas-publicas?p\\_p\\_id=participacaopublica\\_WAR\\_participacaopublicaportlet&p\\_p\\_lifecycle=2&p](https://antigo.aneel.gov.br/web/guest/consultas-publicas?p_p_id=participacaopublica_WAR_participacaopublicaportlet&p_p_lifecycle=2&p)

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As a conclusion, Brazil now has a governmental cyber security resolution that gives the minimum direction of mechanisms to mitigate the risks in the electric sector. A certain level of prescriptive guidelines seems to be acceptable, but there is always a trade off with costs and, consequently, the tariff paid by the consumer. Probably each country will need to find the best balance between costs and cyber security level desired. As happened in Brazil.