



# Survey Paper on the Competition Framework in Other Jurisdictions

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**MAY 2021**

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Market Surveillance Committee

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## 1.0 INTRODUCTION

The process of deregulation in the electricity sector, as well as in other industries, mainly comes from the idea that competition is actually a source of efficiency. Generally, it lowers or removes barriers to entry to market participants and leads to reasonable prices for consumers. In addition, a market that is competitive enough will provide the appropriate signals for the policymakers, the regulator, and the participants of the industry in planning future actions including but not limited to new investments of generation facilities and updating of transmission network. Eventually, these will benefit the consumers in the long run. When the market is competitive, businesses are more attuned to consumer demand. Competition also drives firms to use their inputs in the most efficient and cost-effective way. Competition likewise allows companies to play fair where no one benefits from undue advantages which attracts investors, both local and foreign, to start and operate new businesses. Competition also enables small businesses to swim with bigger businesses in a level-playing field. This is the very same reason why many electricity markets around the globe including Philippines have undergone restructuring or deregulation.

Similar with other sectors, the electricity market is also subject to exercise or even abuse of market power which is mainly due to a combination of several factors including inelastic demand, lack of extensive practical storage of electricity, transmission congestion, and capacity constraints coupled with diversity in the marginal costs of different types of generators<sup>1</sup>. With this, several efforts by the government, such as implementation of laws, regulations and even interventions, were made in order to discourage businesses for participating in any acts that may harm the competition in the market, such as gaming and manipulation for the purpose of significantly increasing profits. However, the restrictions need to be balanced to ensure that these will not create barriers to entry to unlock more investment opportunities for all big and small businesses and that level playing field is maintained to enhance participation from industry participant in the private sector.



**Figure 1 Competition Perspectives**

<sup>1</sup> Competition Policy in the Electricity Sector, Policy Roundtable by Organization for Economic Co-operation and Development, 2002

## 1.1. BACKGROUND

In the Philippines, a major policy reform known as Electric Power Industry Report Act of 2001 (EPIRA) was introduced to establish a central avenue (which is the Wholesale Electricity Spot Market or the “WESM”) for trading of electricity that will facilitate a transparent and reliable market for electricity as well as to address problems faced by the country with the monopolized setup of the industry – absence of consumer choice, highly fragmented distribution sector and lack of incentives to drive the stakeholders to operate more efficiently.

Constituted by the Department of Energy (DOE) as a non-stock and non-profit private organization, the Philippine Electricity Market Corporation (PEMC) governs the operation of the WESM, which is administered by the Independent Electricity Market Operator of the Philippines (IEMOP). By the virtue of DOE Department Circular, IEMOP assumed the market operator functions from PEMC since 26 September 2018<sup>2</sup> to facilitate WESM’s operations of both the Luzon<sup>3</sup> and Visayas<sup>4</sup>.

From then, competition has improved in the Philippine electricity market for over the past decade and new competitors have entered the market. However, the dominance of few major players across the power supply chain and the possibility of market power abuse or gaming are still concerning the market. In fact, the market was intervened by the regulator in 2013 following a sharp price spike, which was later ruled that there are market players engaged in anti-competitive behavior to the disadvantage of consumers<sup>5</sup>. This showed that ensuring and improving the competition in the power generation segment is critically important as well as disincentives to behavior which impede competition.

On 9 June 2006, prior to the commercial operation of the Luzon WESM, the WESM Tripartite Committee, adopted the implementation of a WESM offer price cap of PhP62,000 per megawatt-hour (MWh). The WESM offer price cap was adopted as a mitigating measure to limit or reduce possible instances of excessive increases or high market prices as well as protect consumers against unjustifiable prices.

With the significant price spike event during the SPEX Malampaya natural gas supply curtailment in November and December 2013, the WESM Tripartite Committee resolved to reduce the WESM offer price cap to an interim level of PhP32,000 per MWh effective 27 December 2013 until 30 September 2015. On 17 December 2015, the Committee adopted the offer price cap of PhP32,000 per MWh and the offer price floor of negative PhP10,000 effective 01 January 2016.

As an additional mitigating measure, the ERC issued a resolution imposing the interim secondary price cap which was implemented in May 2014 for the protection of public welfare and to thwart the replication of exorbitant and unreasonable high market prices. In addition to the aforementioned, another mitigating measure in place is the Price Substitution Mechanism

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<sup>2</sup> Department of Energy Department Circular 2018-01-0002 entitled “*Adopting Policies for the Effective and Efficient Transition to the Independent Market Operator for the Wholesale Electricity Spot Market*”

<sup>3</sup> Commenced its operation on 26 June 2006

<sup>4</sup> Integrated into the Luzon market on 26 December 2010

<sup>5</sup> ERC Case No. 2014-021 entitled “*In the matter of the prices in the Wholesale Electricity Spot Market (WESM) for the supply months of November and December 2013 and the exercise by the Commission of the Regulatory Powers to intervene and direct the imposition of regulated prices there in without prejudice to the ongoing investigation on the allegation of Anti-Competitive Behavior and possible abuse of market power committed by some participants*”

(PSM)<sup>6</sup> implemented to address the undesirable market pricing situations that arise from the effects of network congestion in the power system, particularly during the occurrence of extreme nodal price separation<sup>7</sup>.

Currently, the integrated Luzon and Visayas market remained to be dominated by four (4) major participant groups based on the registered and offered capacity led by San Miguel Corporation (SMC) with a market share of 24 percent based on registered capacity which grew in the last years from 21 percent in 2014 and at around 26 percent when measured in terms of offered capacity by the end of 2019<sup>8</sup> from 27 percent in 2014 . Aboitiz Power (AP) came next followed by First Gen Corporation (FGC) and Power Sector Asset and Liabilities Management (PSALM) (see **Figure 2** below). Although new players entered into market, it may be noted that the aggregated market share of the other players in terms of registered capacity declined to 31 percent by the end of 2019 from 32 percent in 2014 denoting the faster growth of the top four firms.

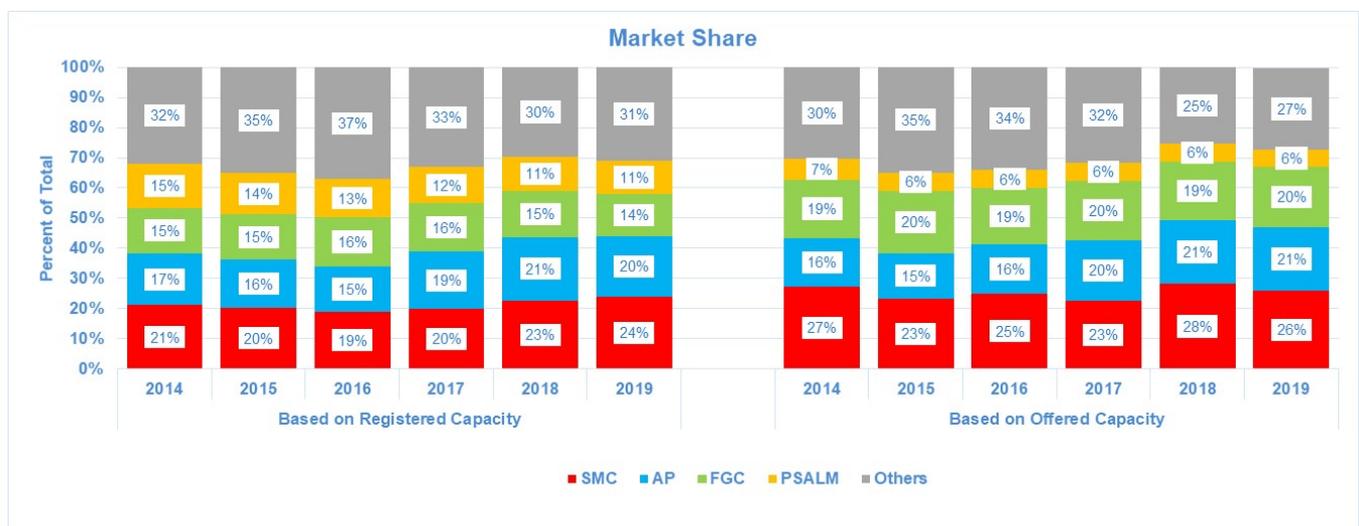


Figure 2 Market Share Based on Registered and Offered Capacity, 2014 to 2019

As previously mentioned, competition does not only refer to the competitiveness of the market but also encompasses the behavior of the participants that may harm the market for both the consumer side as well as the supplier side particularly the small ones. Hence, to assess the competition, various indices were monitored in the market<sup>9</sup>.

Current competition indices need to be reviewed regularly. In addition, research on the best practices and methodology used and accepted in other markets must be undertaken. Developments in how other markets view competition may be useful to determine how the current practices, monitoring and event rules may be improved. This will also ensure that the monitoring activities adapt to the changes in the industry and in the participants' behavior. Apart from the actual practices, implementation and/or transition to new activities including the

<sup>6</sup> WESM Manual on the Methodology for Determining Pricing Errors and Price Substitution Due to Congestion for Energy Transactions in the WESM Issue 4.0

<sup>7</sup> WESM Rules Clause 3.12.7

<sup>8</sup> Based on the 2019 Annual Market Assessment Report of the Market Surveillance Committee

<sup>9</sup> Offer Pattern Analysis, Bid Splitting behavior, etc.

challenges and lessons learned may also be useful in complementing the current monitoring activities in place.

## 1.2. OBJECTIVES

This study aims to survey how other electricity markets define or view competition and the various conditions or factors in consideration that affect the overall competition of their respective jurisdictions. In addition, to identify best practices and methodologies used in other jurisdictions that may be adopted in the WESM including the challenges and lessons learned that may also be useful in complementing the current monitoring activities. Moreover, the paper aims to be an input to the upcoming engagement of a third party expert for the development of monitoring framework and parameters of anti-competitive behavior in the WESM.

## 1.3. SCOPE AND LIMITATIONS

The scope of this paper is limited to survey the competitive electricity spot market in other jurisdiction, with an emphasis on the wholesale market. The best practices and methodology in other markets will also be included in the study. Hence, retail competition is not covered in this paper.

## 2.0 PHILIPPINE COMPETITION FRAMEWORK

Competition in the Philippine Electricity Industry is anchored by the establishment of EPIRA. Section 45 of the EPIRA particularly provides that no participant in the electricity industry or any other person may engage in any anti-competitive behavior including, but not limited to, cross-subsidization, price or market manipulation, or other unfair trade practices detrimental to the encouragement and protection of contestable markets.

Aside from EPIRA, Philippine Competition Act of 2015 (PCA) or the Republic Act 10667 is the primary competition policy of the Philippines for promoting and protecting competitive markets. This law aims to protect the well-being of consumers and preserve the efficiency of competition in the Philippine markets *including the electricity industry*. In general, the PCA makes it illegal for business rivals to act together in ways that can limit competition, lead to higher prices, or hinder other businesses from entering the market.

Generally, both two laws aim to enhance economic efficiency and promote a free and fair competition. These are the rules which the participants must adhere in addressing anti-competitive agreements, investigating alleged price manipulations in the WESM and alleged collusion and to prevent any economic concentration which will stifle the competition of the market.

Below is the summary of the key provisions and objectives of the Republic Act (RA) 9136 and 10667.

**Table 1 Summary of Key Provisions of EPIRA and PCA in relation to Electricity Market**

	<b>Electric Power Industry Reform Act of 2001 (EPIRA) or RA 9136</b>	<b>Philippine Competition Act of 2015 or RA 10667</b>
<b>Oversight</b>	<b>Department of Energy (DOE)</b> as policy making body <b>Energy Regulatory Commission (ERC)</b> as regulatory body <b>Philippine Electricity Market Corporation (PEMC)</b> as governing body of WESM	<b>Philippine Competition Commission (PCC)</b> as the oversight in partnership with each market's regulatory bodies
<b>Focus</b>	Philippine Electricity Industry	Philippine Markets ( <i>including the electricity industry</i> )
<b>Spot Market</b>	Establishment of WESM	Not applicable
<b>Fines and Penalties</b>	Set of corresponding fines and penalties are in place for any violations and non-compliance of the Act.	Set of fines and penalties are also in place (penalties varies depending if the act is administrative, civil or criminal liabilities) to penalize all forms of anti-competitive conduct.

	<b>Electric Power Industry Reform Act of 2001 (EPIRA) or RA 9136</b>	<b>Philippine Competition Act of 2015 or RA 10667</b>
	Competition Rules and Complaint Procedures	Implementing Rules and Regulations, and Rules of Procedure
<b>Key Provisions</b>		
<b>1) Anti-competitive agreements</b>	<b>Anti-competitive agreements, arrangements and understandings<sup>10</sup></b> <ul style="list-style-type: none"> <li>Shall <b>NOT</b> make an agreement / arrangement or arrive at an understanding that will have effect of substantially lessening competition<sup>11</sup></li> </ul>	<b>Anti-competitive agreements</b> <ul style="list-style-type: none"> <li>Horizontal<sup>12</sup> or Vertical<sup>13</sup> Agreements               <ul style="list-style-type: none"> <li>Price fixing<sup>14</sup></li> <li>Other agreements (Setting, limiting or controlling production, market sharing, etc.)</li> </ul> </li> </ul>

<sup>10</sup> Rule 4 Section 1 of the Competition Rules and Complaint Procedures (CRCP)

<sup>11</sup> Rule 4 Section 2 of the CRCP states that **Price fixing provision** is a provision that has the effect of fixing, controlling or maintaining the price at which any party or any of its Affiliates may supply or acquire, agree, offer or accept an invitation to supply or acquire, goods or services to a Person who is not a party thereto or who is not an Affiliate of such a party

<sup>12</sup> Philippine Competition Act Section 14 (a) states that those are the agreements entered into by and between two (2) or more competitors.

<sup>13</sup> Philippine Competition Act Section 14 (b) states that those are the agreements entered into by and between two (2) or more entities at different levels of distribution or production chains.

<sup>14</sup> Includes any form of bidding such as bid suppression, bid rotation and market allocation and other anomalous practices of bid Manipulation

	<b>Electric Power Industry Reform Act of 2001 (EPIRA) or RA 9136</b>	<b>Philippine Competition Act of 2015 or RA 10667</b>
	Competition Rules and Complaint Procedures	Implementing Rules and Regulations, and Rules of Procedure
<b>2) Market Power Abuse</b>	<b>Misuse of Market Power<sup>15</sup></b> <ul style="list-style-type: none"> <li>a Person / firm that has a substantial degree of power<sup>16</sup> in a Market shall <b>NOT</b> misuse that power<sup>17</sup></li> </ul>	<b>Abuse of Dominant Position<sup>18</sup></b> <ul style="list-style-type: none"> <li>Refers to conduct of one or more entities that would substantially prevent, restrict or lessen competition.               <ul style="list-style-type: none"> <li>Predatory Pricing</li> <li>Imposing barriers to entry</li> <li>Making a transaction subject to acceptance of other parties</li> <li>Discrimination of price</li> </ul> </li> </ul>
<b>3) Acquisitions and mergers</b>	<b>Acquisitions, Mergers and Consolidations<sup>19</sup></b> <ul style="list-style-type: none"> <li>Prohibits any acquisitions, mergers or consolidation that would have, or likely to have, the effect of substantially lessening competition in a market<sup>20</sup></li> </ul>	<b>Anti-competitive mergers and acquisition<sup>21</sup></b> <ul style="list-style-type: none"> <li>Refers to those mergers and acquisitions that substantially prevent, restrict or lessen competition</li> </ul> <p><i>(Conduct of investigation before the approval of any mergers and acquisitions)</i></p>
<b>4) Penalties</b>	<b>Penalties</b> The ERC may, after due notice and hearing, can make an order requiring a participant who violated an act to pay a fine or penalty of not more than PhP50,000,000.00 <sup>22</sup>	<b>Penalties<sup>23</sup></b> The anti-competitive agreements give rise to administrative, civil and criminal liabilities.

<sup>15</sup> See Appendix A for the matrix of Misuse of Market Power provided in the CRCP which will contain the degree of market power, factors considered under the rules and the set of guidelines for the use or misuse of market power.

<sup>16</sup> Rule 5 Section 2 of the CRCP states that “An entity is to be taken to have substantial market power in the market if:  
a) An affiliate of a Person has, or two or more Affiliates of a person; or  
b) A Person and its affiliates, or a Person and two or more of its affiliates  
Together, have a substantial degree of market power”

<sup>17</sup> Rule 5 Section 1 of the CRCP

<sup>18</sup> Section 15 of Republic Act 10667 or an Act providing for a National Competition Policy Prohibiting Anti-Competitive Agreements, Abuse of Dominant Position and Anti-Competitive Mergers and Acquisition, Establishing the Philippine Competition Commission and Appropriating Funds Thereof

<sup>19</sup> Rule 6 of the CRCP

<sup>20</sup> Rule 6 Section 1 of the CRCP

<sup>21</sup> Chapter 4 of the Republic Act 10667

<sup>22</sup> Rule 11 Section 2(c) of CRCP and Section 7 of the Guidelines to Govern the Imposition of Administrative Sanctions in the Form of Fines and Penalties pursuant to Section 46 of EPIRA

<sup>23</sup> Rule 6, Article 1, Section 6 of the PCC Rules of Procedure provides the corresponding fines and penalties.

	<b>Electric Power Industry Reform Act of 2001 (EPIRA) or RA 9136</b>	<b>Philippine Competition Act of 2015 or RA 10667</b>
	Competition Rules and Complaint Procedures	Implementing Rules and Regulations, and Rules of Procedure
		<ul style="list-style-type: none"> <li>• Only anti-competitive agreements give rise to administrative<sup>24</sup>, civil<sup>25</sup> and criminal liabilities</li> <li>• Abuse of dominant position and anti-competitive mergers and acquisitions give rise to administrative and civil liabilities only</li> </ul>
<b>5) Exemptions</b>	Rules under the CRCP shall not apply to the making of an agreement, arrangement, or understanding or giving effect to a provision thereof where a Clearance <sup>26</sup> or Authorization <sup>27</sup> has been granted by the ERC	Anti-competitive agreements which substantially lessen competition may be allowed if the parties are able to prove that: <ol style="list-style-type: none"> <li>a) the concentration has brought about or is likely to bring about gains in efficiencies that are greater than the effects of any limitation on competition that result or are likely to result from the merger or acquisition agreement; or</li> <li>b) a party faced with actual or imminent financial failure and the agreement represents the least anti-competitive arrangement among the known alternative uses its assets<sup>28</sup>.</li> </ol>

The EPIRA also provides the legal basis for the establishment of various agencies and clarifies the delineation of tasks. An important consideration in the current procedures under practice in the market is the proper coordination with the concerned agencies with jurisdictions or mandates based on the existing rules and/or laws in relation to Competition.

#### **a. Memorandum of Agreement between PCC and ERC**

On 05 August 2019, ERC and PCC have entered into an Memorandum of Agreement (MOA) which aims to define the PCC and ERC's respective roles with respect to the investigation and review of unfair business conduct, abuse of dominant position, and anti-competitive transactions involving the electric power industry. The MOA was established to outline the

<sup>24</sup> Administrative liability consists in the payment of the fines provided under the Act

<sup>25</sup> Civil liability consists in the payment of damages for any direct injury suffered by any person arising from the commission of the prohibited acts (may be enforced through the institution of an independent civil action after PCC investigation)

<sup>26</sup> Rule 8 of the CRCP

<sup>27</sup> Rule 9 of the CRCP

<sup>28</sup> Section 10 of the Rules and Regulations to Implement the Provisions of Republic Act No. 10667 (Philippine Competition Act)

working relationship between PCC and ERC, and not intended to modify in any way or constitute a waiver of their respective mandates of powers.

Pursuant to their respective mandates in the EPIRA and PCA, the ERC and PCC may conduct a Joint Fact-Finding Inquiries pertaining to competition matters within the electric power industry to determine whether there have been any violations of the PCA or EPIRA. And the result of this joint inquiry will be documented in a joint report. This MOA addresses one of the longstanding issues concerning both parties when it comes to which investigation of a party will prevail in competition-related matters in the electricity industry.

#### **b. Memorandum of Agreement between ERC and PEMC**

To establish the protocol between ERC and PEMC as the governing body of the WESM, a Memorandum of Agreement<sup>29</sup> was also established on 31 January 2008. This is in order to harmonize the application of certain provisions of the EPIRA, its IRR and the ERC's Competition Rules with the WESM Rules and Market Manuals relative to the monitoring of trading and anti-competitive activities.

The said MOA lays down the investigation and enforcement procedures for breaches and conduct of anti-competitive behavior. In the current procedure based on the agreement in the MOA, the ERC has the jurisdiction to penalize abuse of market power, cartelization, and anti-competitive behavior by any electric power industry participant. All matters pertaining to breach of WESM Rules and Manuals will be referred to PEMC (Enforcement and Compliance Office) for investigation and resolution. The MOA also states that PEMC shall refrain from taking cognizance of a case unless directed by the ERC. However, if during the course of PEMC's monitoring and assessment of competition as part of its market assessment and surveillance it found that there is sufficient ground to believe that a conduct constituting ACB has been committed, PEMC will have to elevate the same to ERC for further instruction and direction.

#### **c. Memorandum of Agreement between PCC and PEMC**

The content of the said MOA between PCC and PEMC are still being discussed which aims to be agreed upon by both parties by the end of 2021.

### ***Current Philippine Competition Monitoring and Assessment Practices***

Agencies, such as the ERC, PCC, and PEMC, act pursuant to their respective mandates which lead them for the establishment of their respective monitoring and assessment practices in the market. They may have their own monitoring and assessment practices, but they share the same vision of enhancing the economic efficiency of the electricity industry and promote a free and fair competition.

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<sup>29</sup> This Memorandum of Agreement is currently being reviewed by the ERC and PEMC for possible revisions

### a. Philippine Competition Commission (PCC)

- **Leniency Program.** Since PCC covers various industries or markets in the Philippine jurisdiction, monitoring of any anti-competitive behavior will be difficult. In relation to their monitoring, PCC adopted the United States Federal Energy Regulatory Commission (FERC)'s immunity program. In the Philippines, Leniency program<sup>30</sup> was designed to deter the creation of cartels, and to aid in the detection and prosecution of existing ones. This is done by providing incentives, in the form of immunity from suit or reduction of administrative fines to entities from current and former cartel participants who will disclose information and/or evidence necessary for a successful investigation and case.
- **Coordination with Regulatory Body (ERC).** The PCC recognizes that the regulatory agencies of each industry covered by their jurisdiction are the experts in its respective fields (in case of the Philippine Electricity Industry, it is the ERC). With this, ERC can also make a referral to PCC.
- **Reports received from the Public.** Given the limitation in terms of budget and manpower, PCC also relies on the reports the agency receives from any individual who has knowledge of any Anti-competitive Behavior (ACB) (see Figure 3).



#### PCC ON ALERT AMID THE COVID-19 CRISIS

Report a business behaving anti-competitively.

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Figure 3 Pop-up Ad in PCC website for reporting of ACB

- **Conduct studies for Issue Prioritization.** PCC also conduct studies to find out the lay of the land or to identify potential weaklings of an industry. They have priority sections identified for each year.
- **Merger Analysis / Competitive Effects Analysis.** In terms of mergers and acquisitions, PCC implemented a merger analysis which is a fact-specific process. Market shares and concentration are used for this analysis to reflect the best available indication of the

<sup>30</sup> For further details, see Rules of Leniency Program of the Philippine Competition Commission dated 27 December 2018

firms' future significance. Having low market shares usually supports a conclusion that a given transaction requires no further analysis. Similarly, a transaction that does not significantly increase post-merger market shares or concentration is often not subjected to further analysis, as the pre-merger competitive conditions are unlikely to be significantly altered by the merger<sup>31</sup>. Prior to the approval of any mergers and acquisitions in any market, the PCC will conduct investigation and data gathering to identify if the said merger/acquisition will affect the competition in general.

## b. Market Surveillance Committee (MSC)

As decreed under the rules, the Market Surveillance Committee (MSC) is mandated to enforce the Market Rules on Behavior as well as to assess / monitor the behavior of market participants. As a technical arm/assistance of the MSC, the Market Assessment Group monitors behavior of participants while Enforcement and Compliance Office conducts investigation for breaches of Market Rules.

- **Assessment Reports.** On 17 May 2006, the MSC has developed and established the Catalogue of Market Monitoring Data and Indices (CMMDI)<sup>32</sup> which includes monitoring indices used as an assessment tool to measure or assess competition and efficiency of the WESM. In addition, this will be used specifically for the MSC to identify anomalous circumstances, conducts or outcomes of the WESM, Trading Participants, the Market Operator, or the System Operator that require further assessment or an investigation.

**Table 2 Indices under the Catalogue of Market Monitoring Data and Indices Issue 1**

Catalogue of Market Monitoring Data and Indices (CMMDI) Issue 1	
Market Performance	Spot Market Exposure
Supply	Outages
	Price Setting Indices <ul style="list-style-type: none"> <li>• Price Setting Index</li> <li>• Price Setting Frequency Index</li> </ul>
	Generator Indices
	Capacity Gap
Structural	Market Concentration Indices <ul style="list-style-type: none"> <li>• Market Share</li> <li>• HHI</li> </ul>
	Pivotal Dynamic Indices <ul style="list-style-type: none"> <li>• Pivotal Supply Index</li> <li>• Residual Supply Index</li> </ul>

But these monitoring indices may be updated as the need arises. One example is the April 2019 Special Report by the MSC in response to high prices which occurred during the said period. MSC introduced new methodology to assess if the participants have engaged to any activity that harm the competition. In addition, the Committee

<sup>31</sup> PCC Merger Review Guideline

<sup>32</sup> Currently being reviewed by the MSC for updating in preparation of the commercial operation of the New Market Management System (NMMS) and for inclusion of the additional indices identified by the MSC

continuously seek better ways of assessment through the conduct of its market studies as part of the annual plan. Provided below are other indices identified through the previously conducted market studies.

**Table 3 Additional Indices used by MSC**

Other Indices			
Enhanced Offer Pattern Analysis <sup>33</sup>	Interesting Pricing Event Analysis <sup>34</sup>	Bid Splitting / Strategic Bidding Analysis	Market Monitoring Trigger

### c. Energy Regulatory Commission (ERC)

- **Market Share Limitation (MSL).** To promote free and fair competition in the generation and supply sector in order to achieve greater operational and economic efficiency and enhance competitive operation of the market, ERC formulated and adopted the “Guidelines for the Determination of Installed Generating Capacity (IGC) in a Grid and the National Installed Generating Capacity and Enforcement of the of the Limits of Concentration of Ownership, Operation or Control of Installed Generating Capacity”<sup>35</sup> in its Resolution No. 26, Series of 2005 implemented last 22 February 2006. The installed generating capacity per Grid and National Grid as well as the market share limitation determination is reviewed and adjusted by the ERC, as the need arises. On 2019, ERC adjusted the MSL as follows:

**Table 4 Market Share Limitation as of 2019**

Grid	Installed Generating Capacity (kW)	% Market Share Limitation per RA 9136	Installed Generating Capacity Limit (kW)
Luzon	15,350,824	30%	4,605,247
Visayas	3,031,458	30%	909,437
Mindanao	3,420,818	30%	1,026,245
National	21,803,100	25%	5,450,775

- **Resolutions / Issuances related to Competition.** Decisions made by the Commission following its monitoring of market participants behavior are reflected in the ERC Issuances published in its website. The said issuances contain the factual antecedents, detailed discussion of the issue and the assessment or monitoring made as well as the penalties involved<sup>36</sup>.
- **Market Analysis Framework for the Surveillance and Monitoring of the WESM.** With the evolving landscape of the electricity market, new regulatory methodologies, and the need for radical improvements on market monitoring to be developed and undertaken, the ERC engaged Potomac Economics, Ltd./PE Software Analytics to provide assistance

<sup>33</sup> MSC approved the methodology on 13 June 2019 during its MSC Meeting no. 2019-08

<sup>34</sup> See MSC Resolution No. 2020-04 entitled Recommending Approval of the Seasonality Thresholds for the Spot Price Indices on Market Price Triggers and Interesting Pricing Events

<sup>35</sup> EPIRA under Section 4(a) and Section 4 (a) Rule 11 of its Implementing Rules and Regulations

<sup>36</sup> Most recent ERC Issuance in relation to Competition or Anti-competitive Behavior was the ERC Case No. 2019-005SC, “In the Matter of Violation of ERC Orders, Rules and Regulations – Prime Meridian Power Corporation (PMPC)”

in developing a market monitoring analysis framework for both the Energy and Reserve Market to ensure that abuse of market power or anti-competitive behavior will be adequately addressed. In particular, the said engagement will aid the Commission to address the following areas: (1) the guiding principles used to evaluate market efficiency and competitive performance, and (2) specific monitoring criteria that will be used to initiate investigations on the behavior of generators. The said engagement has already concluded and corresponding report has been submitted to the Commission.

### 3.0 REVIEW OF OTHER JURISDICTIONS

This study surveyed how various jurisdictions define or view competition and other related concepts and the various conditions or factors in consideration that affects the overall competition of their respective markets. In this portion, the best practices, methodology or framework that were introduced in other markets shall also be discussed for consideration of possible adopting in the Philippine setup.

The jurisdictions that have been surveyed and considered in this study are the following:

- **Asia:** Singapore
- **Oceania:** Australia and New Zealand
- **United States:** Midcontinent and Texas
- **Canada:** Alberta and Ontario
- **Europe:** France

Survey Paper on the Competition Framework  
in Other Jurisdictions

**Table 5 Overview of the main features of various markets in relation to the competition**

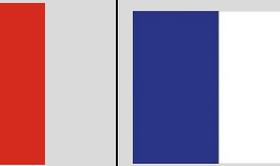
								
	<b>Singapore</b>	<b>Australia</b>	<b>New Zealand</b>	<b>Midcontinent</b>	<b>Texas</b>	<b>Alberta</b>	<b>Ontario</b>	<b>Europe (France)</b>
Concerned Agency/ies	Energy Market Authority (EMA); Market Surveillance & Compliance Panel; Competition & Consumer Commission of Singapore	Australian Energy Regulator (AER); Australian Energy Market Commission; Australian Competition & Consumer Commission	Electricity Authority (EA); Compliance Committee	Federal Energy Regulatory Commission (FERC)	Public Utilities Commission of Texas (PUCT)	Market Surveillance Administrator (MSA); Alberta Utilities Commission (AUC)	Ontario Energy Board; Market Surveillance Panel (MSP)	Agency for the Cooperation of Energy Regulators (ACER); Commission of Regulation of Energy (CRE)
Terminologies or related concepts	Anti-competitive agreements, abuse of dominant position, anti-competitive agreements, Vesting contracts	Effective competition, Purpose, effect or likely effect of substantially lessening of competition	Code Breach process, Undesirable Trading Situations, Safe harbor provision for bidding behavior in pivotal supplier situations	Physical and Economic withholding, Conduct & Impact Thresholds, market power	Small Fish Swim Free, voluntary mitigation plan, artificial congestion, market power abuse	More positive & overarching standard of rules, economic withholding, collusion, conscious parallel behavior	Physical / Economic withholding, pricing-up, abuse of market power, collusion, Gaming	Market manipulation, false & misleading behaviors, collusion of collusive cooperation, price fixing
Assessment / Reporting	Monitoring & Assessment <ul style="list-style-type: none"> <li>• Market Performance</li> <li>a) Outlier Prices Detection</li> <li>b) Structure, Price Behavior &amp; Market Efficiency Assessment</li> </ul>	Structure – Conduct – Performance (SCP) Framework <ul style="list-style-type: none"> <li>• Structure</li> <li>• Conduct (physical or economic withholding)</li> <li>• Performance</li> </ul>	Structure – Conduct – Performance (SCP) Framework	Conduct-Impact Tests for imposing the Mitigation Measures  Competitive Assessment <ul style="list-style-type: none"> <li>• Structural Market Power Analysis</li> <li>• Participant Conduct</li> </ul>	Competitive Assessment <ul style="list-style-type: none"> <li>• Structural Market Power Indicators</li> <li>• Supplier Contract Evaluation</li> </ul>	Structure – Conduct – Performance  Market Share Offer Control	Conduct of Three-Part Tests <ul style="list-style-type: none"> <li>• Conduct Test</li> <li>• Price Effect Test</li> <li>• Benefit to Participant test</li> </ul>	Automatic Screening of Anomalous Events <i>(which will be subject to preliminary analysis)</i>

Table 6 Summary of the Common Features of Various Jurisdictions

SUMMARY OF THE COMMON FEATURES FROM THE REVIEW OF OTHER JURISDICTIONS	
	<p><b>Terminologies used:</b></p> <ul style="list-style-type: none"> <li>• Anti-competitive agreements and abuse of dominant position (SG); undesirable trading situation (NZ); abuse of market power (Ontario &amp; Texas); Misuse of market power (AUS); Anti-competitive conduct (Alberta); Gaming (Ontario); Market manipulation (EU-France)</li> <li>• Effective competition (AUS)</li> </ul>
	<p><b>Approach:</b></p> <ul style="list-style-type: none"> <li>• Vesting Contracts (SG); Small Fish Swim Free (Texas); Safe harbour provision (NZ)</li> <li>• More positive and overarching standard of rules (Alberta);</li> <li>• Physical &amp; Economic Withholding (Midcontinent, Alberta, Ontario);</li> <li>• Conduct-Impact Tests / Thresholds (Midcontinent)</li> <li>• Market manipulation may occur without an impact on supply, demand, or price. (EU-France); Conduct that has a purpose, effect or likely effect of substantially lessening of competition (AUS)</li> </ul>
	<p><b>Monitoring / Assessment</b></p> <ul style="list-style-type: none"> <li>• Structure-Conduct-Performance Framework / Assessment (some focuses on Structure and Conduct)</li> <li>• Three Part Test (Conduct Test, Price Effect, Benefits to participant)</li> <li>• Automatic Screening of Anomalous Events</li> </ul>

### 3.1. ASIA

#### 3.1.1. Singapore

The Singapore electricity market was liberalized to ensure the competitive electricity prices and to enhance the efficiency in the market. The National Electricity Market of Singapore (NEMS) was established by the Electricity Act of 2001 and began operating in January 2003 which aims to create a competitive market framework for the electricity industry, to make provision for the safety, technical, and economic regulation of the generation, transmission, supply and use of electricity. Aside from the Electricity Act, their market is also governed by the Competition Act enforced by the Competition and Consumer Commission of Singapore. Meanwhile, the Energy Market Authority (EMA) is the entity responsible for regulating the electricity industry and for ensuring the secure operation of the power system.

Essentially, the Competition Act was enacted to provide a generic competition law to protect consumers and businesses from anti-competitive practices of private entities. Similar with the Philippine setting, their competition and electricity laws main features revolve around three (3) major provisions – anti-competitive agreements, abuse of dominant position, and anti-competitive mergers and acquisitions.

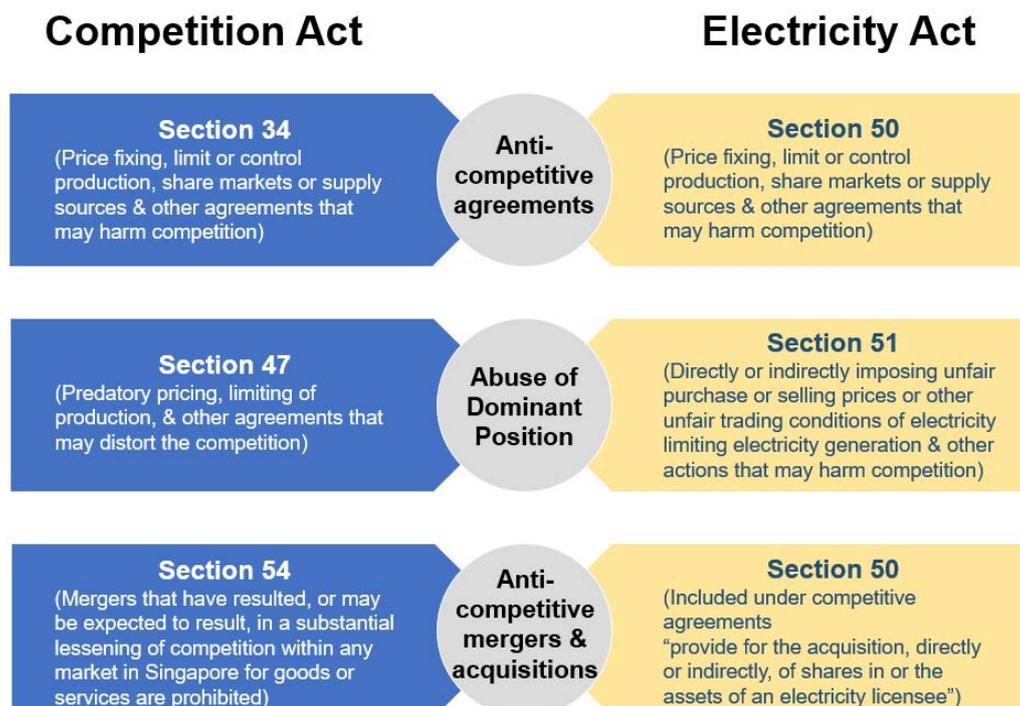


Figure 4 Key provisions of Singapore's Competition Act and Electricity

#### **Singapore Electricity Market Rules ("Market Rules")**

Singapore's Market Rules provide the basis of Market Surveillance and Compliance Panel (MSCP) to monitor and investigate the conduct of market participants in the wholesale market. In cases of non-compliance with the respective provisions of the Rules, it may take enforcement

action, which may include levying a penalty, or notification of the EMA, who may take further actions. Under the aforementioned rules, the MSCP also recommends remedial actions to mitigate any rule breaches or inefficiencies identified.

Section 7.2.11 of the Market Rules provides that the size of the penalties may vary depending on several factors, such as the severity of the breach, the extent to which it was negligent or deliberate, the actions of the market participant on becoming aware of the breach, whether the breach was self-referred, any prior breaches by the market participant, the impact of the breach, and others. In addition, the penalties issued are made public.

### ***Vesting Contracts***

Similar with various electricity markets, Singapore's EMA also had concerns regarding the degree of market power for the generation companies dominating the market at which it can potentially keep electricity prices near or at the end of their price limits regardless of the balance between supply and demand. With that, EMA introduced the Vesting Contracts in 2004 which aimed to curb the exercise of market power by the generation companies and to promote efficiency and competition in the electricity market for the benefit of consumers<sup>37</sup>. These were signed between generation companies and SP Services Ltd (utility services). With this, the generation companies are committed to sell a specified percentage of their capacity (viz the vesting contract level) at a specified price (viz the vesting contract price). This removes the incentives for generation companies to exercise their market power by withholding capacity to push up spot prices in the wholesale market.

### ***Market Monitoring and Assessments***

As provided under the Singapore's electricity rules, the MSCP<sup>38</sup> was established and mandated to monitor the participants' conduct and activities in the NEMS and assess whether the underlying structure of the wholesale electricity market is consistent with the efficient and fair operation of a competitive market. This requires focus on the price outcomes and systematic analysis of prices. In one of their report, MSCP highlighted that while a good price signal is the desired outcome of a liberalized market, it does not guarantee one. Obstacles such as the market structure and firms' behavior may prevent energy prices from converging towards efficient prices.

In order to fulfill their obligation to assess the competition in the market, the NEMS' MSCP provides an assessment on the performance of the wholesale electricity market through their reports. Their assessment is focused into the following:



**Figure 5 Market Monitoring and Assessments Focus**

<sup>37</sup> For further information regarding Singapore's Vesting Contracts, you may visit the EMA website for Electricity Policies and Regulations at [https://www.ema.gov.sg/Licensees\\_Electricity\\_Vesting\\_Contracts.aspx](https://www.ema.gov.sg/Licensees_Electricity_Vesting_Contracts.aspx) as well as the frequently asked questions on Vesting Contracts at [https://www.ema.gov.sg/cmsmedia/Licensees/faq\\_vc\\_2020.pdf](https://www.ema.gov.sg/cmsmedia/Licensees/faq_vc_2020.pdf)

<sup>38</sup> Section 4.1.11 of Chapter 3 of the Singapore Electricity Market Rules

The Catalogue of data and indices of Singapore focuses in five indices, namely, market share, supply indices, demand indices, price indices, and ancillary indices which are regularly included in the MSCP's annual reporting. Unlike in NEMS, the Philippines WESM has yet to implement and establish indices for the ancillary services market.

**Table 7 Singapore's Catalogue of Data and Monitoring Indices**

Catalogue	Details
<b>Market Share</b>	<ul style="list-style-type: none"> <li>• Based on Metered Energy Quantity by Generation company and Generation Type</li> <li>• Based on Maximum Capacity by Generation Company and Generation Type</li> </ul>
<b>Supply Indices</b>	<ul style="list-style-type: none"> <li>• Capacity Ratio</li> <li>• Outages</li> <li>• Supply Cushion Ratio</li> </ul>
<b>Demand Indices</b>	<ul style="list-style-type: none"> <li>• Metered Energy Quantity</li> <li>• Accuracy of Pre-Dispatch &amp; Short-Term Load Forecasts</li> <li>• Accuracy of Real-time load forecasts</li> </ul>
<b>Price Indices</b>	<ul style="list-style-type: none"> <li>• Volume – weighted Vesting Contracts hedge price &amp; Wholesale Electricity Price</li> <li>• Correlation between Wholesale Electricity Prices, Fuel Oil Prices &amp; Electricity Tariff</li> <li>• Correlation between WEP &amp; Metered Quantity</li> <li>• Frequency Distribution of WEP by:               <ul style="list-style-type: none"> <li>➢ % of Hours of Occurrence</li> <li>➢ % of Energy Quantity Affected</li> </ul> </li> </ul>
<b>Ancillary Indices</b>	<ul style="list-style-type: none"> <li>• Reserve Prices</li> <li>• Interruptible Load</li> <li>• Regulation Prices</li> </ul>

Since 2003, the MSCP has used a static model to identify high prices<sup>39</sup>. The model relies on the assumption that high prices are possible signals of inefficient market outcomes. However, MSCP recognized that in a competitive market, efficient prices are the outcome of market fundamental factors which reflect normal demand and supply conditions. To understand the relationship between such factors and the energy prices in the NEMS, the MSCP has therefore developed an econometric model which takes into account such factors and to further understand the dynamics behind changes in energy prices.

The said model will aid the MSCP to understand how different market fundamental factors have quantitatively affected energy prices in the past. With an understanding of the historical relationship between market fundamental factors and energy prices, the MSCP will be able to use the econometric model to estimate energy prices in the context of varying demand and supply conditions. To provide a margin for error, the estimated prices was expanded to include an upper and lower price band. Prices falling outside of these bands will be identified as outliers that warrant further attention which is equivalent to the Interesting Pricing Events monitoring in the Philippines.

<sup>39</sup> Occasional Paper by Market Surveillance and Compliance Panel – How Market Fundamental Factors Affect Energy Prices in the NEMS: An Econometric Model, 16 July 2007

### **Competition Assessment of the Wholesale Electricity Market**

Under also of Singapore's Market Rules, the MSCP is required to provide a general assessment of the state of competition and compliance within, and the efficiency of, the wholesale electricity market. In order to provide the general assessment, MSCP specifically looks into the following:



**Figure 6 Core of MSCP's State of Competition and Efficiency Assessment of WEM**

In terms of Singapore's market structure, MSCP looks into the entry of new market participants, new facilities registered in the market, withdrawal of market participants, and deregistration of facilities. Moreover, looking at the historical trend of market prices in the market allows the MSCP to further assess the current behavior of prices in the market. In addition, market concentration measures the intensity of competition in the market by looking at the level of market share between market players. The less concentrated a market is, the more competitive it is.

<b>Market Structure and Competition</b>	<b>Market Price Behavior</b>	<b>Efficiency of the Electricity Market</b>
<ul style="list-style-type: none"> <li>• Entry of New Market Participants</li> <li>• New Facilities in the Market</li> <li>• Withdrawal of Market Participants</li> <li>• De-registration of facilities in the market</li> </ul>	<ul style="list-style-type: none"> <li>• Historical trend of market prices in the market</li> </ul>	<ul style="list-style-type: none"> <li>• Market Concentration</li> <li>• Productive Efficiency<sup>40</sup></li> <li>• Pricing Efficiency<sup>41</sup></li> </ul>

<sup>40</sup> Firms are said to be productively efficient if they are producing their goods or services at the lowest possible cost. Competition helps firm to produce more efficiently, as competitors exert pressure on one another to offer their products at the lowest possible price to attract and retain their customers. As such, firms are incentivized to reduce their costs to the minimum. This can be further assessed by checking if there is an increase in the market share of the most efficient generation resource.

<sup>41</sup> This was being assessed by the MSCP by reviewing the offer variations of generators to see if the price spike are attributed to the low supply margin and not by abnormal behavior from the forced outage.

## 3.2. OCEANIA

### 3.2.1. Australia

Competition in the electricity market in Australia is governed by the National Electricity Law (NEL) and the Competition and Consumer Act (CCA) with its relevant issuances and guidelines. The NEM governance structure is currently supervised by three different market bodies. The Australian Energy Market Operator (AEMO) which serves as the Market Operator. Meanwhile, the Australian Energy Market Commission (AEMC) serves as the rule maker, market developer and advisor to government. Lastly, the Australian Energy Regulator (AER) which focuses on the economic regulation and rules compliance. The AER is in-charge of monitoring the wholesale markets particularly the short-term focus on compliance issues and high price events. Furthermore, these three market bodies adhere to the National Electricity, Gas and Energy Retail Law and Regulations.

Australia's NEL aims to promote efficient investment in, and efficient operation and use of, electricity services for the long-term interests of consumers of electricity with respect to price, quality, safety, reliability and security of supply and the national electricity system in general. The NEL provides the definition of key terms, such as "effective competition"<sup>42</sup>.



**Figure 7 Effective Competition under the National Electricity Law (Section 18B)**

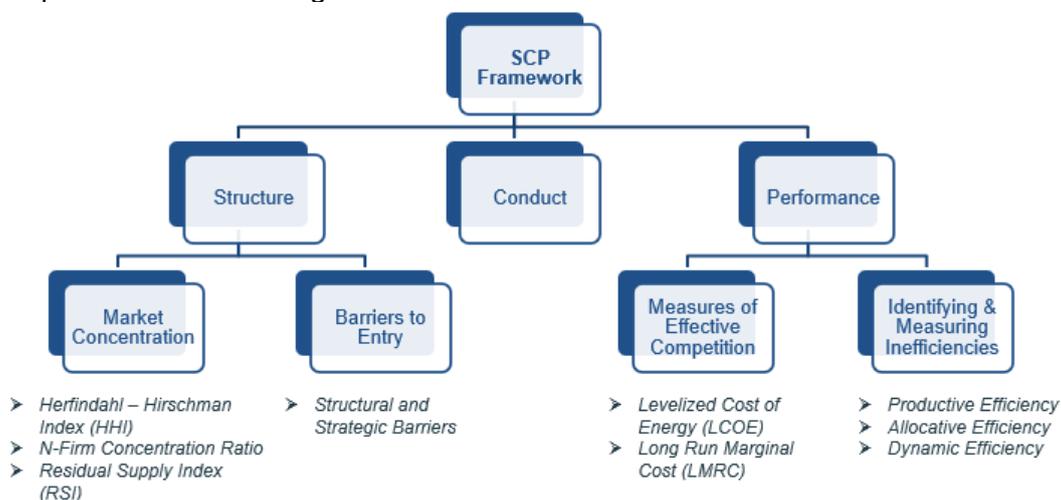
<sup>42</sup> Section 18B of National Electricity Law of Australia states that **Effective Competition** must have regard to –

- whether there are active competitors in the market and whether those competitors hold a reasonably sustainable position in the market (or whether there is merely a threat of competition in the market);
- whether prices are determined on a long-term basis by underlying costs rather than the existence of market power, even though a particular competitor may hold a substantial degree of market power from time to time;
- whether barriers to entry into the market are sufficiently low so that a substantial degree of market power may only be held by a particular competitor on a temporary basis;
- whether there is independent rivalry in all dimensions of the price, product or service offered in the market; and
- any other matters that the AER considers relevant.

With the amended NEL in 2016, AER is now allowed to examine the performance of the market not only in the shorter-term but also over the longer term to identify market inefficiencies and competition issues. In line with this, AER's assessment includes qualitative and quantitative analyses. In addition, policymakers and courts in Australia typically focus on whether competition is "effective" or "workable". This is in recognition that real world markets depart from the theoretical concepts that underpin perfect competition. In this perspective, a market is said to be effectively or workably competitive if none of the firms in that market have sustained market power. From an economic standpoint, firms cannot gain sustained market power if the market responds to the prevailing prices. This means that when prevailing prices are above or below the underlying costs, supply side should eventually respond in the form of new investments or plant exit.

Meanwhile, the Australian Competition and Consumer Commission (ACCC), an independent statutory authority, enforces the CCA. Following the guidelines in relation to the misuse of market power, ACCC highlighted that a firm with substantial market power may be able to damage the competitive market by preventing or deterring rivals, or potential rivals, from competing which is also called exclusionary conduct. Section 46 of CCA provides that an entity with substantial degree of market power in a market must not engage in conduct that has the purpose<sup>43</sup>, effect<sup>44</sup> or likely effect<sup>45</sup>, of substantially lessening competition<sup>46</sup> in the market.

AER uses the Structure-Conduct-Performance (SCP) framework as the primary basis for analyzing the wholesale electricity market. This same framework was also used in another jurisdiction such as New Zealand. The Structure-Conduct-Performance (SCP) Framework is composed of the following:



**Figure 8 Australia's Structure, Conduct, Performance Framework**

<sup>43</sup> **'Purpose'** refers to a firm's intention to achieve a particular result. It can be established by direct evidence or by inference. The purpose specified in Section 46 need not be a firm's only purpose, but it needs to be a substantial purpose

<sup>44</sup> **'Effect'** refers to the direct consequence of a firm's conduct. This is determined objectively by examining the actual impact on the competitive process within the relevant market. Although not determinative, evidence of consumer or competitive detriment will be relevant to the ACCC's consideration of whether to pursue a matter

<sup>45</sup> **'Likely effect'** refers to the likely consequences of a firm's conduct, including its potential impact on the competitive process. 'Likely' means that there is a real chance or a possibility that is not remote

<sup>46</sup> **Lessening competition** means that the process of rivalry is diminished or lessened, or the competitive process is compromised or impacted. 'Lessening competition' extends to 'preventing or hindering competition'.

### 3.1.1. New Zealand

The New Zealand electricity market is a liberalized market with a competitive spot market, established trading market, and a competitive retail sector. The Electricity Authority (EA) is the market regulator which promotes competition and the efficient operation pursuant to the Electricity Industry Act of 2010 and the Electricity Industry Participation Code (“Code”).

Competition, reliability and efficiency are at the heart of EA’s statutory objectives. The monitoring by the EA covers all aspects of the electricity sector from generation and some of the key associated input markets; the wholesale and related ancillary and forward markets; through to system operation, transmission, distribution and retail markets.



Figure 9 New Zealand Electricity Authority’s Statutory Objectives<sup>47</sup>

#### **Code Breach Process**

For cases of alleged breached of the Code, the EA will have to go through the Code Breach Process as detailed in the Electricity Industry (Enforcement) Regulations of 2010. When an alleged breach was duly received by the EA, a fact-finding inquiry will be held to gather necessary information. Based on the gathered information, a report on the alleged breach is presented to their Compliance Committee which will decide if it will require no further action, issuance a warning letter, or appointment of an investigator to further investigate the alleged breach. In cases that the Compliance Committee decide to further investigate, the appointed investigator will have to follow the procedures set forth by the Code. The report to be submitted by the investigator will aid the Compliance Committee to decide what action should be taken<sup>48</sup>. In addition, the EA also uses breach assessment criteria<sup>49</sup> to assess the seriousness and

<sup>47</sup> Electricity Authority, “Industry Market Monitoring: Reliability and Efficiency Information Paper”, 30 April 2012

<sup>48</sup> This may involve a) approving a settlement, b) rejecting a settlement and recommending the Authority Board lay a formal complaint with the Rulings Panel and c) if no settlement can be reached, recommending the Authority Board lay a formal complaint with the Rulings panel or discontinue the investigation

<sup>49</sup> See the Operating Procedures for processing alleged breaches of the Rules and Regulations at this website <https://www.ea.govt.nz/assets/dms-assets/791Rule-Breach-Operating-Procedures.pdf>

overall impact of alleged breaches. This assessment assists the EA in making decisions on how alleged breaches are categorized and dealt with.

### ***Improving Efficiency of Prices in Pivotal Supplier Situations***

In the past, there were some generators monitored by EA who have offered and set spot prices at high levels when they have been in a pivotal position. High prices are acceptable to reflect genuine supply shortages but are of questionable value if caused by suppliers exploiting situations where competition is weak.

In order to further improve the efficiency of prices in pivotal supplier situations, the EA requested the assistance of the Wholesale Advisory Group (WAG) to further investigate the problem and to identify possible solutions. The result of WAG's study resulted to the proposed amendments of the Code which required generators (and even the ancillary service providers) to observe a high standard of trading conduct. The proposed amendment did not define the term high standard of trading conduct but rather included a "**safe harbour**"<sup>50</sup>.

### ***Industry and Market Monitoring in relation to Competition***

In one of information paper published by EA, they interpreted competition promotion as "*Exercising its functions in ways that facilitate or encourage increased competition in the markets for electricity and electricity-related services, taking into account long-term opportunities and incentives for efficient entry, exit, investment, or innovation in those markets*"<sup>51</sup>. This interpretation puts a premium on workable competition and ensuring that underlying or structural market conditions are conducive to competitive outcomes over the long term.

Similar with Australia, the New Zealand market uses the **Structure-Conduct-Performance (SCP) Framework** in examining sector's competitiveness. The simple premise is that the structure of the market determines the conduct of its participants which then drives outcomes. The more competitive the structure, the more competitive the conduct of participants, and the more efficient their performance.

#### ***a. Structure***

The EA noted that market concentration may be a consequence of economies of scale, which can benefit the consumers. If barriers of entry are low, the threat of new entrants can be

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<sup>50</sup> The requirements as stated in 2014 Code Amendments:

- a) The generator makes its offers in respect of all of its generating capacity that is able to operate in a trading period;
- b) When the generator decides to submit, revise, or cancel an offer, it does so as soon as it can; and
- c) In the case of a generator that is pivotal, -
  - i. Prices and quantities in the generator's offers do not result in a material increase in the final price at which the electricity is supplied in a trading period at any node at which the generator is pivotal, compared with the final price at the node in an immediately preceding trading period or other comparable trading period in which the generator is not pivotal at that node; or
  - ii. The generator's offers are generally consistent with offers it has made when it has not been pivotal; or
  - iii. The generator does not benefit financially from an increase in the final price at which electricity is supplied in a trading period at a node at which the generator is pivotal.

<sup>51</sup> Electricity Authority "Interpretation of the Authority's statutory object", February 2011

sufficient to neutralize any market power suggested by the market share of the incumbent(s). Structures which might be problematic may be an essential feature of the electricity market. The presence of large fixed and sunk costs in generation, for example, acts as a barrier to entry because the minimum efficient scale of operation is high. This instance is what EA highlighted that needs to be taken into account in the context of workable competition.

### ***b. Conduct***

EA sees the need to determine if strategic pricing is undermining workable competition in the market. Monitoring this aspect is essential for monitoring competition in general. Long run dynamic efficiency gains from competition are, after all, only the sum result of many periods of short run pricing behavior. And to improve the transparency in the pricing behavior of participants, various assessments were made which include scrutinizing offer curves, publishing offers and conducting simulation.

### ***c. Performance***

As we know in the electricity market, the current price realizations (i.e. spot prices) reflect past decisions. In New Zealand, assessment of market performance must include measures of the effectiveness of the price discovery process; to provide assurance that prices reliably reflect expectations of spot prices and that those prices signal an appropriate investment and innovation mix.

### ***Undesirable Trading Situation (UTS)<sup>52</sup>***

The New Zealand electricity market has a concept known as an “undesirable trading situation”, where the EA can retrospectively alter prices when it deems inappropriate behavior has taken place, but actual conduct or what constitute an undesirable trading situation is not in the Electricity Industry Participation Code since the code gives EA the discretion over what is considered UTS and will be subject for investigation . This unique approach gives significant power to the Electricity Authority in retrospectively mitigating the exercise of market power. The Electricity Industry Participation Code of 2010 defines the UTS as any situation:

- a) that threatens, or may threaten, confidence in, or the integrity of, the wholesale market; and
- b) that, in the reasonable opinion of the Authority, cannot satisfactorily be resolved by any other mechanism available under this Code.

The said Code provides that EA is responsible for determining or declaring that UTS occurred and whether to investigate the development, or possible development<sup>53</sup>. Part 5 of the Code highlight non-exhaustive examples of conduct that may construed as an UTS as follows:

- manipulative or attempted manipulative trading activity;
- conduct in relation to trading that is misleading or deceptive, or is likely to mislead or deceive;

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<sup>52</sup> Guidelines for Participants on Undesirable Trading Situations, 20 June 2016

<sup>53</sup> Clause 5.1 of the Electricity Industry Participation Code

- unwarranted speculation or an undesirable practice;
- material breach of any law;
- a situation that threatens orderly trading or proper settlement; and
- any exceptional or unforeseen circumstance that is contrary to the public interest.

This portion of the Code gives authority to the EA to conduct an investigation for the occurrence of UTS as well as to take either of the following actions in order to correct it<sup>54</sup> such as:

- *suspending, or limiting or curtailing, an activity on the wholesale market, either generally or for a specified period*
- *deferring completion of trades for a specified period*
- *directing that any trades be closed out or settled at a specified price*
- *giving directions to a participant to act in a manner (not inconsistent with this Code, the Act, or any other law) that will, in the Authority's opinion, correct or assist in overcoming the undesirable trading situation.*

## 3.2. AMERICA

### 3.2.1. Midcontinent

Midcontinent Independent System Operator (MISO) is an independent, not-for-profit organization that delivers safe, cost-effective electric power across 15 U.S. states<sup>55</sup> and the Canadian province of Manitoba. Current monitoring and assessment practices in MISO are governed by the FERC Electric Tariff Rules which includes the Independent Market Monitoring Plan<sup>56</sup> and the Market Mitigation Measures<sup>57</sup>.

For the common understanding within the market, MISO issued a business practice manual for Market Monitoring and Mitigation (MMM)<sup>58</sup> which contains information on the responsibilities of the 1) Independent Market Monitor (IMM)<sup>59</sup> – Potomac Economics, 2) thresholds for Conduct and Impact tests prior to imposition of Mitigation measures, and 3) methodology on substituted offers, calculation of penalty charges, and mitigation measures.

The said business practice manual is intended to be entirely consistent with the MISO Tariff rules<sup>60</sup>. In general, the goal of the aforementioned MMM document is to prevent any distortion of competitive outcomes while avoiding unnecessary interference with competitive price signals.

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<sup>54</sup> No penalties mentioned.

<sup>55</sup> Arkansas, Illinois, Indiana, Iowa, Kentucky, Louisiana, New Orleans, Michigan, Minnesota, Mississippi, Missouri, Montana, North Dakota, South Dakota, Texas, and Wisconsin

<sup>56</sup> The **Independent Market Monitoring Plan** is intended for the independent, impartial and effective monitoring and reporting on the Market and as a whole.

<sup>57</sup> **Market Mitigation Measures** are intended to provide the means for the transmission provider to mitigate the market effects of any conduct that would distort competitive outcomes in the market.

<sup>58</sup> Business process manual being reviewed in this study is the recently revised BPM (BPM-009-r14) effective 01 February 2019

<sup>59</sup> The IMM is an organization responsible to implement the MMM plan and reports directly to MISO Board of Director and performs its market monitoring activities without interference from MISO or from state regulatory agencies.

<sup>60</sup> Module D of MISO FERC Electric Tariff Rules effective on 19 November 2013

### **Conduct-Impact Tests**

In this effect, MISO introduced various “conduct thresholds”<sup>61</sup> to establish trigger mitigation, namely, physical withholding conduct thresholds, economic withholding conduct thresholds and uneconomic productions conduct thresholds. As previously discussed, the MMM Plan employs a two-part test (**Conduct Test**<sup>62</sup> and **Impact Test**<sup>63</sup>) to determine whether mitigation is warranted. These tests are designed to establish whether an exercise of market power substantially distorts market outcomes before Mitigation Measures are imposed.

- Conduct Tests identify components of Generation Offers that exceed their reference levels by more than defined threshold amounts. It also differentiates between scarcity and market power for purposes of mitigation<sup>64</sup>.
- Impact Tests are necessary as the second component of the trigger for mitigation because that does not have a significant effect on market outcomes is not an abuse of market power and is not mitigated through the default bid.

Initially, the MMM process evaluates the actions of participants by comparing offers to resource specific Reference Levels (physical or economic). The tariff-defined conduct thresholds are applied to determine whether the conduct warrants further evaluation for potential application of Mitigation Measures. If a Conduct Test fails, then the MMM performs an Impact Test to determine if the conduct has any effect on the prices. The impact is evaluated by comparing market outcomes based on Reference Levels against those based on offers failing conduct. This is done through re-clearing the market, replacing the offers failing conduct with offers based on the references (default offers<sup>65</sup>). If the difference in market outcome comparing the actual to the competitive results exceeds the tariff defined Impact Thresholds, then mitigation may be imposed. The IMM is also responsible to refer any potential anti-competitive behavior to FERC along with the recommendations for potential sanctions per pertinent provisions under the Tariff Rules.

The combination of the **Conduct and Impact Tests** used by MISO are the triggers for imposing the Mitigation Measures. It should be noted that MISO’s mitigation measures apply to specific conduct only when it exceeds Conduct Thresholds and when the effect on market outcomes exceeds Impact Thresholds. These thresholds are designed mainly to allow prices to rise efficiently to reflect legitimate supply shortages while effectively mitigating inflated prices associated with artificial supply shortages that result from either physical or economic withholding.

As defined in the MISO’s BPM, market power refers to the ability to raise prices significantly above competitive levels and can be exercised by:

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<sup>61</sup> Section 6 of MISO’s Market Monitoring and Mitigation Business Practice Manual No.009

<sup>62</sup> **Conduct test** is used to screen the behavior of MPs to identify conduct that may warrant mitigation

<sup>63</sup> It is necessary to incorporate **Impact Tests** as the second component of the trigger for mitigation because conduct that does not have a significant effect on market outcomes is not an abuse of market power

<sup>64</sup> If suppliers are not withholding physically or economically, any price increases are the result of scarcity rather than market power

<sup>65</sup> Based on MISO’s BPM, a **Default Offer** is a modified Offer for a Generation Resource determined by the IMM to replace the portions of the unit’s Offer that exceed the Conduct and Impact Tests with the applicable Reference Levels.

1. **Physical Withholding**<sup>66</sup> refers to the partial or total unavailability of a generation resource when it would be economic for the electric facility to operate. In addition, equipment legitimately scheduled or forced out-of-service is not considered to be physically withheld.
2. **Economic Withholding** refers to submission of offers that violates the economic withholding threshold so that a generation resource output would not be dispatched or scheduled, or when a generation or offers would clear at prices significantly above competitive levels.
3. **Uneconomic Production** refers to increasing the output of a Generation Resource to a level that would otherwise be uneconomic<sup>67</sup>.
4. **Uneconomic Demand Bids** are either Fixed Demand Bids or Price-Sensitive Demand Bids that are considered uneconomic if they cannot be justified based on risk management or other economic considerations and cause or contribute to a substantial divergence between day-ahead prices and real-time prices.

### ***Reference levels***

An important component of the conduct tests is the use and establishment of reference levels. These reference levels are used in conjunction with conduct tests to detect economic withholding and uneconomic production. Reference Levels reflect a Generation Resource's marginal costs, including justifiable risk and opportunity costs or, for physical Generation Offer parameters, they reflect justifiable technical characteristics. There are various ways to calculate reference levels depending on the component of a generation resource's offer. Below is the order of precedence for selecting generation offer reference levels in MISO according to their BPM:

1. Lower of the mean or median of accepted Offer components over the past 90 days (for Peak or Off-Peak periods), adjusted for fuel prices.
2. Mean of LMPs/MCPs at the Generation Resource's location during the lowest priced 25% of hours that the unit was dispatched over the past 90 days (for Peak or Off-Peak periods), adjusted for fuel prices.
3. Level determined jointly between MP and IMM that reflects the Generation Resource's marginal costs.
4. IMM's estimate of the Generation Resource's costs.
5. Average of competitive Offers for similar Generation Resources.

### ***Penalty Charges***

Under the current rules, penalty charges will be determined by FERC, but MISO will administer the penalties and the IMM will be responsible for the monitoring of conduct and impact that may trigger the Tariff's penalty provisions and make recommendations to MISO to implement (as authorized) or to make the appropriate filings with FERC to seek penalties. Pursuant to

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<sup>66</sup> Under MISO's current practices, there were several activities considered physical withholding such as false declaration of outage of unavailability, refusing to submit offers or schedules, operating a Generation Resource below MISO's Real-Time Setpoint Instructions, operating a transmission facility and others.

<sup>67</sup> With this, MISO introduced three threshold criteria to identify if a certain out is a product of uneconomic production.

pertinent provisions of their rules, a market participant who engaged in physical or economic withholding may lead to penalty charges.

In addition, penalty charges are determined by assessing a penalty up to the product of the Base Penalty Charge times the appropriate multiplier<sup>68</sup>, which is determined as follows:

$$\text{Base Penalty Charge}^{69} = (\text{Capability (in MW) Affected} * (\text{Penalty Price during Penalty Hours}))$$

### Competitive Assessment

Similar with the other market, the IMM issues an annual state of the market report which discusses the competitive performance and efficiency of each of the MISO markets and the recommendations for improvement. MISO competitive assessment comprises of two parts: Structural Market Power Analysis and Participant Conduct.

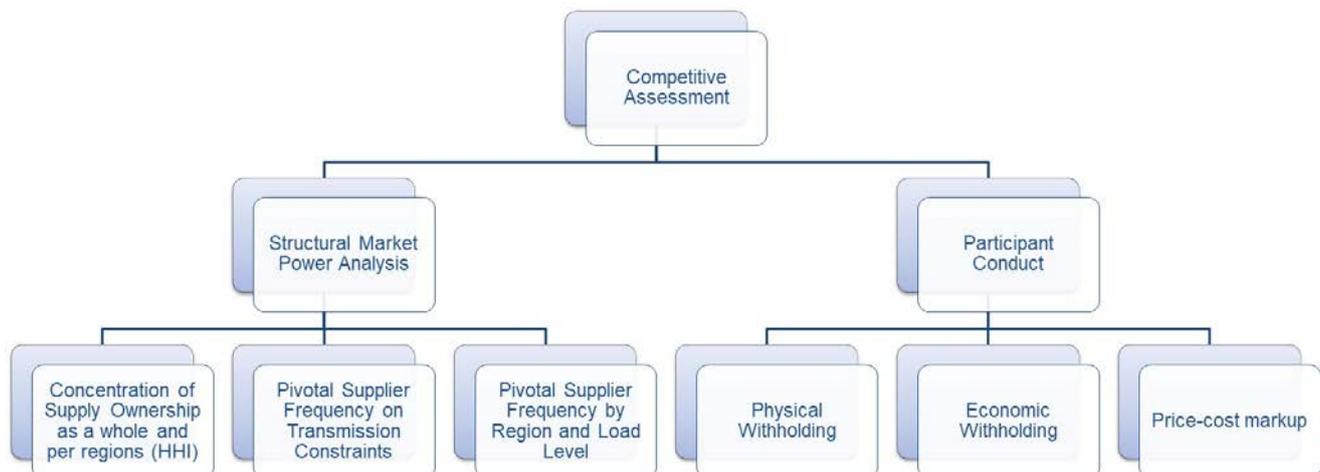


Figure 10 MISO's Competitive Assessment Framework

<sup>68</sup> For more details, you may refer to the Section 8.2.2 of the MISO's Market Monitoring and Mitigation Business Practice Manual BPM-009-r14, effective 01 February 2019

<sup>69</sup> Where:

**Penalty Price** means for a generation resource, the LMP applicable to the withheld Energy or the MCP applicable to the withheld Operating Reserves at the Generator bus of the withheld generation resource.

**Penalty Hours** means:

- For Day-Ahead Energy (and also in Operating Reserve Market), the hours in which the conduct occurred.
- For Real-Time Energy (and also in Operating Reserve Market), the hours in the Calendar Day from when the conduct first occurred until the conduct ended.

**Capability (MW) Affected** refers to the quantity of generation resource's output physically withheld or uneconomically produced

### 3.2.2. Texas

The Electric Reliability Council of Texas (ERCOT) is situated in Austin, Texas and serves approximately 26 million customers representing approximately 90% of the state's electric load and dispatches more than 680 generating resources to reliably deliver power to customers over more than 46,500 miles of transmission lines<sup>70</sup>. In addition, ERCOT is not synchronously connected to the rest of the United States and they are not being subjected to the jurisdiction of the FERC. However, similar with other electricity industry in the United States, Potomac Economics is also the Independent Market Monitor (IMM) of the ERCOT market.

ERCOT is governed by the Electric Substantive Rules (specifically Chapter 25 of the Rules) and policed by the Public Utilities Commission of Texas (PUCT) which prohibit fraudulent or misleading behavior, creation of artificial congestion, or engagement to collusion or withholding of production. The said rules also provide clear definition for various conduct and terms used in the market for the information of the market participants. Also, PUCT is empowered under the Public Utility Regulatory Act to monitor and mitigate market power and to further prevent any potential market power abuses.

The Chapter 25 Subchapter S of the Electric Substantive Rules focuses on the wholesale market design of ERCOT. It contains the standard and criteria for the enforcement of their procedures. PUCT is mandated to monitor the activities of market entities to determine if such activities are consistent with ERCOT procedures; whether they constitute market power abuses or are unfair, misleading, or deceptive practices affecting customers; and whether they are consistent with the proper accounting for the production and delivery of electricity among generators and other market participants. Chapter 25.503 (d) specifically directs PUCT to consider whether the activity or conduct under review demonstrate any of the following:

- adversely affected customers in a material way through the use of unfair, misleading, or deceptive practices
- materially reduced the competitiveness of the market, including whether the activity unfairly impacted other market participants in a way that restricts competition
- disregarded its effect on the reliability of the ERCOT electric system
- interfered with the efficient operation of the market

Also, Chapter 25.503 (e) of the Electric Substantive Rules provides the ethical standards of ERCOT which emphasizes the participants ***NOT to engage*** in activities and transactions that create artificial congestion or artificial supply shortages, artificially inflate revenues or volumes, or manipulate the market or market prices in any way.

The rules also clearly state that any act or practice of a market participant that materially and adversely affects the reliability of the regional electric network or the proper accounting for the production and delivery of electricity among market participants is considered a "prohibited activity"<sup>71</sup>. ERCOT rules also provides non-exhaustive list of acts and practices that have been found to cause prices that are not reflective of competitive market forces or to adversely affect the reliability of the electric network as follows:

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<sup>70</sup> State of the Market Report for 2019

<sup>71</sup> Chapter 25.503 (3) of Electric Substantive Rules

- Creating artificial congestion<sup>72</sup>
- Offer reliability products that cannot or will not be provided if selected
- Conducting trades that result in a misrepresentation of the financial position of a firm
- Engaging in fraudulent behavior related to its participation in the wholesale market
- Engaging in collusive behavior<sup>73</sup> or in market power abuse – whether by physical or economic withholding of production.

Meanwhile, Chapter 25.504 provides that abuse of market power pertains to the practice/s by a firm possessing market power that are unreasonably discriminatory or tend to unreasonably restrict, impair, or reduce the level of competition. These abuses may include predatory pricing, withholding of production, precluding entry and collusion<sup>74</sup>.

**Allegations of Market Manipulation made against TXU**  
(An Example of Hockey Stick Bidding)

On IMM's Report on Investigation of Wholesale Market Activities of TXU from 1 June to 30 September 2005, IMM concludes that, during the concerned period (hours 10 to 23), TXU had market power and engaged in behavior that constituted market power abuse by economically withholding production from its generation units. TXU had the ability to substantially increase energy prices, because its energy offers were necessary to satisfy the demand; and that TXU abused its position by offering its energy into the market at prices in excess of its marginal cost. By doing so, TXU engaged in economic withholding. Based on ERCOT's rules, economic withholding by a market participant possessing market power is expressly prohibited as a market power abuse.

One unique feature of ERCOT's rules is what they termed as "**Small Fish Swim Free**" clause wherein an entity that controls less than 5% of the installed generation capacity is deemed not to have market power. Potomac Economics, however, noted in its annual state of the market report, "Although 5% of total ERCOT capacity may seem relatively trivial, the potential market impacts of a market participant whose size is just under the 5% threshold choosing to exercise flexibility and offering a significant portion of their fleet at very high prices can be large".

### Competitive Assessment

Similar with other jurisdictions, to assess competitiveness, the Texas market evaluates the structural market power using a set of indicators (i.e. Residual Demand Index and Voluntary Mitigation Plans or VMP<sup>75</sup>) and the supplier conduct related to the outages and deratings, potential physical and economic withholding.

<sup>72</sup> Chapter 25,503.c.1 of Electric Substantive Rules states that "Artificial Congestion refers to congestion created when multiple foreseeable options exist for scheduling, dispatching, or operating a resource, and a market participant chooses an option that is not the most economical, that foreseeably creates or exacerbates transmission congestion, and that results in the market participant being paid to relieve the congestion it caused."

<sup>73</sup> As per Electric Substantive Rules, provision related to collusive behavior should be interpreted in accordance with federal and state antitrust statutes and judicially developed standards under such statutes regarding collusion.

<sup>74</sup> With equivalent provisions under the Public Utility Regulatory Act (PURA) Section 39.157 (a)

<sup>75</sup> Chapter 25,504.d of Electric Substantive Rules. In Texas, generation owners are motivated to enter into VMP because adherence to the plan approved by PUCT constitutes an absolute defense against an allegation of market power abuse through economic withholding with respect to behaviors addressed by the plan.

### 3.3. CANADA

#### 3.3.1. Alberta

In Alberta, the Market Surveillance Administrator (MSA) was established to conduct investigations of anti-competitive conduct. Meanwhile, the applications regarding enforcement decisions, settlements, and penalties can only be made by the Alberta Utilities Commission (AUC). The Alberta enacted the **Electricity Utilities Act of 2003 (EUA)**<sup>76</sup> where competition was first introduced into the energy market. At the time, the Enron Scandal and Western Energy Crisis<sup>77</sup> were raging, and Alberta recognized the need to police anti-competitive conduct. The regulatory regime expanded in 2009 when they enacted the **Fair, Efficient and Open Competition (FEOC) Regulation** which was expansive and prohibited a broader range of anti-competitive conduct.

The implementation of FEOC has provided the market participants what is required from them under the EUA. Section 2 of the FEOC Regulation which sets out an expansive but non-exhaustive list of specific types of conduct. This conduct includes, among other behavior, prohibition of acts restricting or preventing competition or a competitive response<sup>78</sup> and manipulating market prices away from a competitive market outcome<sup>79</sup>. Importantly, it imposes a more positive and overarching standard (as compared with other markets) on all market participants and conduct that fails to support a fair, efficient and openly competitive market which was not limited to the enumerated conduct in Section 2 the FEOC Regulation. Accordingly, there can be a breach of Section 6<sup>80</sup> of the EUA but will not constitute a breach of Section 2 of the FEOC Regulation.

In 2011, following extensive stakeholder consultations, the MSA issued an Offer Behavior and Enforcement Guidelines (OBEG) which describes the general approach in applying the FEOC (i.e. economic withholding) in Alberta's wholesale electricity market. However, in late 2015, the MSA sought the comments from the stakeholders for the potential review or refresh of the OBEG which later proceeded to the consultation for the possible revocation of the same<sup>81</sup>.

#### ***Offer Behavior and Enforcement Guidelines***

Under the Offer Behavior and Enforcement Guidelines<sup>82</sup>, Alberta's analytic framework draws into the concepts of economic efficiency and recognition of dynamic efficiency.

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<sup>76</sup> The EAU imposes on all market participants the positive obligation to support the fair, efficient and openly competitive operation of the Alberta Electricity Market

<sup>77</sup> Docket No. PA02-2-000: Staff Report – Price Manipulation in Western Markets

<sup>78</sup> FEOC Section 2 (h)

<sup>79</sup> FEOC Section 2 (j)

<sup>80</sup> Electric Utilities Act Section 6 states that "Electricity market participants are to conduct themselves in the electricity market in a manner that supports the fair, efficient and openly competitive operation of the electricity market.

<sup>81</sup> Based on May 26, 2017 Notice to Participants and Stakeholders Re: MSA Decision and Response to Stakeholders Comments re Revocation of Offer Behavior and Enforcement Guidelines

<sup>82</sup> Alberta's Wholesale Electricity Market Offer Behavior Enforcement Guidelines (OBEG), effective from 2011 but was later revoked on May 26, 2017. The MSA highlighted that the revocation is not a prohibition on economic withholding; rather, revocation is a signal to the market that they will look closely at offer behavior and efficiency in the context of the legislative framework during the transition to a capacity market.

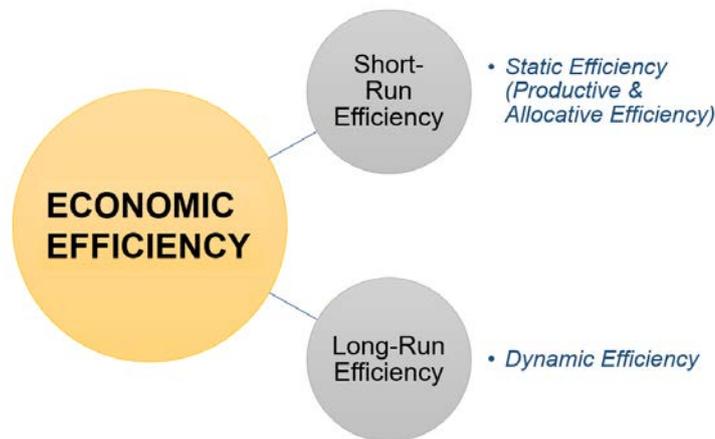


Figure 11 Alberta's Economic Efficiency

***Efficiency in the use or operation of an existing assets (Short-Run Concept of Efficiency)***

- Static Efficiency – composed of tests conducted at a given in time
  - Productive Efficiency
    - Can be achieved if the least cost resources in the market are dispatched in order to meet demand.
  - Allocative
    - Can be achieved if the resources are allocated in a way that maximizes the net benefit attained through their use.

Both allocative and productive efficiency would be met in a spot market where all generators offered at short run marginal cost and where price was set at the offer of the most expensive generator.

***Efficiency in investment in the creation of new assets (Long-Run Concept of Efficiency)***

- Dynamic Efficiency refers to efficient decisions regarding investment in new assets (what, where, when, and what type of investment)<sup>83</sup>
  - Dynamic efficiency gains are not assured if the price signal is effectively controlled by one or more market participants - new entrants and investment will be dissuaded if they believe prices are only high because of market participant control, reasoning that post entry the controlling incumbent may set prices at a level that would not enable the entrant to recover costs.

This short run cost-based standard and associated efforts to police against the exercise of market power is important for most other competitive electricity markets in North America because they rely on separate capacity markets to ensure adequate new investment in generation. But what would constitute anti-competitive behavior? For the MSA, the following constitute as anti-competitive behavior:

<sup>83</sup> Darry R. Biggar and Mohammad Reza Hesamzadeh, “The Economics of Electricity Markets” (2014)

The MSA recognize the need to distinguish the unilateral effects to coordinated effects to assess the competition in the market. In general, unilateral effects arise from individual market participants responding to incentives and acting alone and can be categorized into two:

- Extraction - Single participant conduct aimed at capturing surplus (profits) that a market participant has created independent of the conduct's effect on rivals
- Extension - Single participant conduct that increase surplus (profits) by weakening or eliminating the competitive constraints imposed by rivals.

Meanwhile, coordinated effects refer to concerns where two or more participants directly or indirectly act to promote their combined self-interest. And these coordinated behaviors can run the range from explicit collusion<sup>84</sup> through tacit collusion<sup>85</sup> to consciously parallel<sup>86</sup> behavior.

### MSA Enforcement Statement

In relation to offer behavior, market participants are free to pursue individually profit maximizing behavior that does not impact on rivals' conduct. Also, in their enforcement statement released last 29 June 2020, MSA defined "Economic withholding means offering available supply at a sufficiently high price in excess of the supplier's marginal costs and opportunity costs so that it is not called on to run and where, as a result, the pool price is raised". Such strategy is only profitable for a firm that benefits from the higher price in the market.

In general, Alberta's competition framework focuses more on what is expected from the participants rather than what is prohibited which can be seen under the Electric Utilities Act Section 6 and the relevant provisions under the FEOC. In addition, Section 5 of FEOC provides the requirement on participants to not exceed 30% of offer control and on the MSA to publish, at least annually, an offer control report.

<b>AUC Decision 3110-D01-2015: Market Surveillance Authority vs TransAlta – And Example of Intentional Withholding of Capacity<sup>87</sup></b>
<ul style="list-style-type: none"> <li>• TransAlta intentionally took coal-fired generating units offline for repairs during the periods of high demand when it was possible to delay those repairs for a period of lower demand.</li> <li>• TransAlta could have deferred each of the outage events to off peak hours but chose instead to take them during peak or super-peak hours to maximize the benefit to its own portfolio.</li> <li>• TransAlta's timing of outages increased average pool prices from what they would otherwise have been had the outages been scheduled to commence on off peak hours.</li> <li>• For each of the four outage events, TransAlta manipulated market prices away from a competitive market outcome, contrary to Section 2(j) of FEOC and Section 6 of EUA.</li> </ul>



<sup>84</sup> Collusion: presence of an explicit agreement (written or verbal) either directly between two or more parties or facilitated without direct contact by a third party (a hub and spoke conspiracy); agreement or other similar conduct or verbal in form.

<sup>85</sup> Tacit Collusion: the agreement is unspoken but implied by one participant's signaling, or other similar conduct, and inferred or understood by the co-conspirators.

<sup>86</sup> Conscious Parallelism: describes the situation whereby a participant independently adopts a common or accommodating strategy with only expectation or awareness of their competitors' responses.

<sup>87</sup> Market Surveillance Administrator allegations against TransAlta Corporation et al., Mr. Nathan Kaiser and Mr. Scott Connelly (July 27, 2015)

### 3.3.2. Ontario

In Ontario, the responsible for market monitoring as well as to monitor, evaluate and analyze activities related to the Independent Electricity System Operator (IESO)-administered markets and the conduct of market participants is their Market Surveillance Panel (MSP)<sup>88</sup>.

The MSP's monitoring function encompasses the conduct of market participants, actions of the IESO and overall market design – insofar as the issues relate to gaming, market power, efficiency, and competition. However, the MSP does not have any authority for mitigation of offers by market participants or recovery of market revenue. Nor does it have any power to impose sanctions for abuse of market power, gaming, or other conduct.

In December 2006, the MSP issued a discussion paper regarding a proposed framework for identifying exercises of market power in Ontario market. After the issuance of the said discussion paper, several consultation meetings were conducted with the stakeholders and written comments on the proposed framework were submitted to the MSP. However, the said initiative leads to a several number of issues and was continued as the Monitoring Offers and Bids Consultation. Pursuant to their mandate, MSP issued guidance in the form of a **“Monitoring of Offers and Bids”**<sup>89</sup> document that identified the general principles and approach that would be used to assess potential exercises and abuses of market power.

On this Monitoring of Offers and Bids document of MSP, it was first distinguished that high prices from market power. According to MSP, high prices is the result of normal supply and demand. While in some jurisdiction exercise of market is sometimes associated with inappropriate or sanctionable behavior, in Ontario the exercise of market power is not prohibited by the Market Rules and the MSP distinguishes it from the abuse of market power and gaming. To the MSP, the exercise of market power is simply one of the reasons why market outcomes may depart from the competitive benchmark. However, a market outcome which was caused by an exercise of market power does not normally lead to take any action beyond reporting of it, unless it is accompanied by conduct that constitutes and abuse of market power or gaming (i.e., exclusionary, collusive or predatory practices).

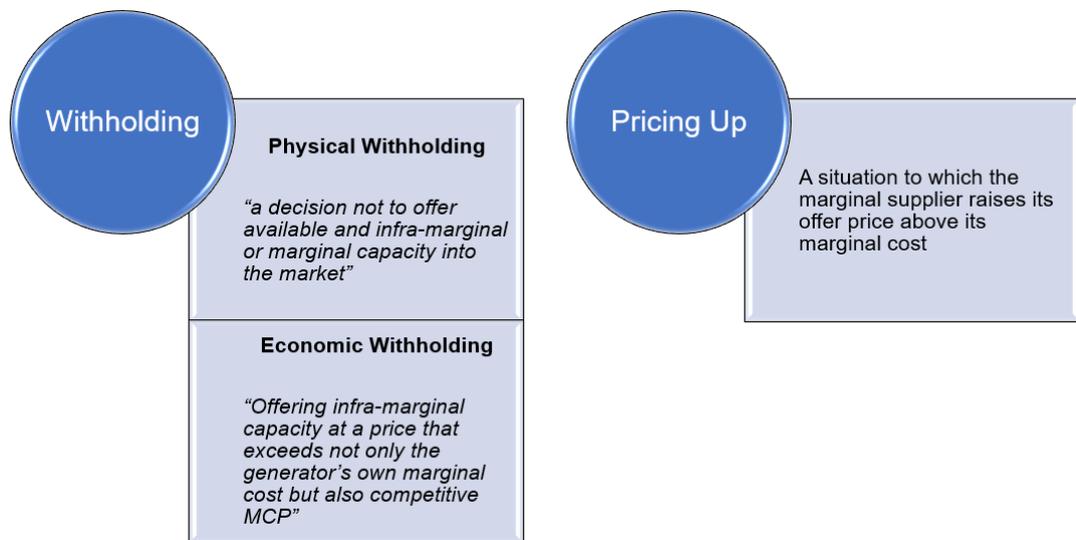
As the document makes it clear, an abuse of market power involves specific conduct that is anti-competitive (i.e., exclusionary, collusive or predatory practices). In such cases, the MSP may conduct a formal investigation and report an abuse of market power to the OEB and IESO.

Although the MSP is attentive to any situation in which there has been a material departure from the competitive benchmark, they acknowledged that the most likely ways in which market power might be exercised are through withholding (either in terms of physical or economic withholding). Unlike the initial proposed market power framework, the Monitoring of Offers and Bids document focuses on the situations where the market price/s are elevated above the competitive levels or benchmarks. Below are the two classifications of deviations as regarded by MSP.

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<sup>88</sup> Ontario Energy Board By-law #3

<sup>89</sup> Effective March 2010



**Figure 12 Classification of Deviations from Competitive Benchmark**

### ***Physical Withholding***

Similar with other jurisdiction, physical withholding typically raises the prices in the market. It is normally resulting in dispatch inefficiency unless the unit withheld is marginal. It may or may not be profitable for a supplier. While the supplier foregoes profit on the output it withholds, any other infra-marginal generation it owns receives higher revenues due to the increase in the MCP above the competitive price. The actual MCP beyond the competitive MCP may be regarded as an exercise of market power, assuming that (i) there is no credible alternative explanation for the withholding, (ii) there is material effect on the MCP and (iii) the firm that owns the generator set the MCP benefits from withholding through additional profits.

### ***Economic Withholding***

Similar to physical withholding, economic withholding normally raises the prices and results in dispatch inefficiency. As with physical withholding, economic withholding may be beneficial for a firm if the foregone profit on the withheld capacity is exceeded by additional revenues on other infra-marginal output.

### ***Pricing-up<sup>90</sup>***

As with physical or economic withholding, pricing-up may be profitable strategy if the market participant concerned has other resources that have been scheduled and therefore benefit from the higher MCP.

In order to determine potential divergences from the competitive outcomes attributable to market participant actions, the MSP employed three (3) tests which will involve the following

<sup>90</sup> According to MSP, the Ontario market design – in which all dispatched suppliers receive the MCP – was based in part on an expectation that suppliers in a competitive market would be bidding at marginal cost in order to ensure they are dispatched whenever possible. Thus pricing-up which by definition raises the market price above the marginal cost of the next MWh required to satisfy demand, is appropriately viewed as an exercise of market power.

1. Conduct Test which will enable the MSC to see if withholding or pricing up has occurred<sup>91</sup>
2. Price effect<sup>92</sup>, i.e. the MCP has been increased materially<sup>93</sup>
3. Benefit to the participant, meaning the market participant involved has profited and otherwise benefited from the conduct<sup>94</sup>.

However, before concluding that a specific market outcome is the result of an exercise of market power, explanation offered by the market participants is considered. Consequently, the MSP allows some tolerances in applying the tests.

### ***Abuse of Market Power***

In cases where the MSP believes that there is an abuse of market power, they have the authority to conduct investigation. On the other hand, participants in question will be notified and provided an opportunity to explain. According to MSP, an abuse of market power entails some action on the part of a market participant that lessens or prevents competition.

In addition, anti-competitive conduct is also defined by the MSP as a behavior that in some way impedes competitive responses to price signals. Below are the classic examples of anti-competitive behavior which could constitute an abuse of market power.

- Exclusionary Practices – a generator or an importer prevents other possible market participants from accessing the interties with Ontario
- Collusion – two generators agree they will price-up, which will push up market prices at times when one or the other is the marginal generator.
- Predatory pricing – a large generator reduces prices on its output below marginal cost, forcing down the market price and reducing production by other moderately priced generation, which subsequently decides to exit the market.

In the absence of supporting anti-competitive conduct the Panel does not regard departures from the competitive norm resulting from unilateral physical or economic withholding or pricing-up as an abuse of market power, even though these actions may be noteworthy from the perspective of the performance and efficiency of the market. In other words, the ability to exercise market power is a necessary but not sufficient condition for finding an abuse of market power.

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<sup>91</sup> The MSP regularly examines high-priced hours and low-priced hours.

<sup>92</sup> The MSP has not adopted a specific quantitative materiality threshold and will consider all the circumstances relevant to a particular event when determining whether there has been a material impact on the MCP. The two most important factors in materiality assessments conducted by MSP are the magnitude of the increases above competitive levels and the frequency / duration of such outcomes.

<sup>93</sup> The MSP has not adopted a specific quantitative materiality threshold and will consider all of the circumstances relevant to a particular event when determining whether there has been a material impact on the MCP.

<sup>94</sup> This involves comparing the actual profit earned with the estimated profit that the firm would have earned in the absence of the identified conduct. The additional revenues earned on infra-marginal output and the lost profit on withheld capacity are a starting point, but any relevant profit impacts are also considered.

## **Gaming**

This document indicated that gaming is a separate concept from abuse of market power which could be found to occur where a market defect is exploited by a market participant for its benefit and to the disadvantage of the market. An essential characteristic of gaming is that the conduct profits or otherwise benefits the market participant concerned at the expense or disadvantage of the market as a whole. In addition, actions that could constitute fraud, deceit or manipulation of market prices or raise payments could be addressed as gaming.

The Panel notes as a general matter that conduct can be subject to either an abuse of market power investigation and / or a gaming investigation depending on the nature of the activities involved. A finding of gaming could be made in the absence of an abuse or even a mere exercise of market power. Similarly, an abuse or exercise of market power could be found to occur in respect of conduct that might not constitute gaming.

## **3.4. EUROPE**

In Europe, an EU regulation called the Regulation No. 1227/2011 on wholesale energy market integrity and transparency (REMIT) of the European Parliament and of the Council of 25 October 2011 has been in force since 2011. It specifically aims to promote confidence and integrity in the wholesale energy markets in Europe as well as to foster open and fair competition for the benefit of consumers.

EU's regulatory framework is unique in a sense that it cuts across national borders. While member nations all have their own energy regulators (also called as National Regulatory Authorities or NRAs) that operate autonomously, the market rules are made at the EU level and must be implemented by member nations. Further, provisions exist in the market legislation that require the institutions at the national level to work collaboratively across borders to advance competition in energy markets.

To help ensure consistent interpretation of REMIT, the Agency for the Cooperation of Energy Regulators (ACER) published a non-binding guidance to EU National Regulatory Authorities (NRAs), who are responsible for enforcing REMIT in their respective jurisdiction. ACER was established in March 2011 by the Third Energy Package legislation as an independent body to foster the integration and completion of the European Internal Energy Market for electricity and natural gas. By fostering cooperation among National Regulatory Authorities (NRAs), ACER ensures that the integration of national energy markets and the implementation of legislation in the Member States are met according to the EU's energy policy objectives and regulatory frameworks.



**Figure 13 Regulatory Architecture of Europe's REMIT<sup>95</sup>**

This REMIT provides a consistent EU-wide regulatory framework specific to wholesale energy markets that 1) defined market abuse (which includes market manipulation, attempted market manipulation or insider trading), 2) introduced an explicit prohibition of market abuse, 3) required an effective and timely public disclosure of inside information by the participants and 4) obliged firms professionally arranging transactions to report suspicious transactions. REMIT creates a very important framework for identifying and penalizing market abuses in Europe. This helps consumers, the industry, and other participants to have confidence that wholesale energy prices are open, fair, and competitive which is the foundations of an effectively functioning energy market.

As provided under REMIT, market manipulation in Europe defined as entering into any transaction or issuing any order to trade in wholesale energy products which gives or is likely to give, false or misleading signals as to the supply of, demand for or price of a wholesale energy product. It was further clarified in one of their open letters released to the public last 2015 that all three criteria do not need to be met in order for a breach to occur; supply of, demand for, or price of are all separate considerations under REMIT. In addition, market manipulation may occur without an impact on supply, demand, or price. There is no need for there to have been intent for market manipulation, as defined in REMIT. If the result of entering any transaction or issuing any order to trade in wholesale energy products results in one of the outcomes described in the abovementioned rules, then this constitutes market manipulation under REMIT.

<sup>95</sup> ACER's Annual Report on its Activities under REMIT in 2012

On the recent publication of ACER's guidance<sup>96</sup> on wholesale energy market integrity and transparency, it provided direction as to the applications of market abuse prohibitions and as to the behavior that may result to market manipulation in violation of REMIT. The aforementioned guidance was based on the Market Abuse Directive (MAD) which further support that insider dealing and market manipulation are explicitly prohibited.

The following are types of behavior that tantamount to market abuse.

1. Insider Trading
  - a. Insider Trading
  - b. Improper disclosure of inside information
  - c. Recommending on the basis of inside information
  
2. Market Manipulation
  - a. False / Misleading transactions<sup>97</sup> (i.e., wash trades, layering, spoofing, marking the close, cross market manipulation, artificial pricing, transmission capacity hoarding and others).
  - b. Price Positioning - trading, or placing orders to trade, which secures or attempts to secure the price of one or several wholesale energy products at an artificial level
  - c. Transactions involving fictitious devices / deception (i.e., Dissemination of false / misleading market information through media<sup>98</sup>, Pump and dump<sup>99</sup>, prearranged trading and circular trading).
  - d. Dissemination of false or misleading information (i.e., Spreading false / misleading information through social media<sup>100</sup> and other behaviors).

With this, ACER developed an IT infrastructure called Agency's REMIT Information System (ARIS) which will facilitate the data collection, data sharing and market monitoring. The aforementioned system is composed of four (4) major pillars as illustrated below:

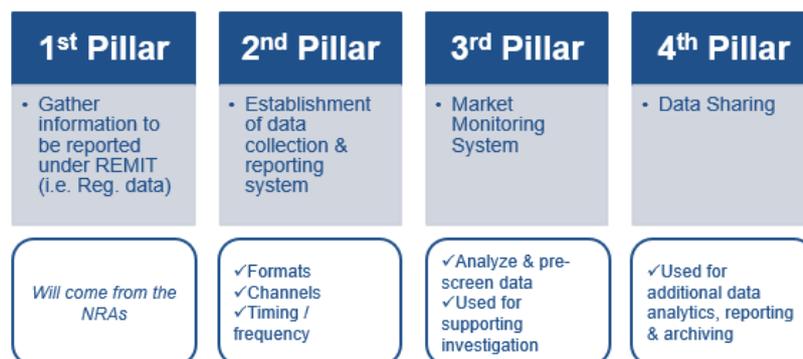


Figure 14 ARIS High Level Design<sup>101</sup>

<sup>96</sup> Guidance on the application of REMIT, 4<sup>th</sup> Edition, 15 October 2019

<sup>97</sup> Further details are found in Guidance on the application of REMIT, 4<sup>th</sup> Edition, 15 October 2019

<sup>98</sup> Done with the intention of moving the price of a wholesale energy product in a direction that is favorable to the position held or a transaction planned by the person disseminating the information

<sup>99</sup> Pump and dump – taking a long position in a wholesale energy product and then undertaking further buying activity or releasing misleading information to increase the price of that product.

<sup>100</sup> Posting information via internet or issuing a press release which contains false or misleading statements about a wholesale energy product.

<sup>101</sup> ACER's Annual Report on its Activities under REMIT in 2015

The Agency’s market surveillance approach revolves around the automated screening in order to identify any “anomalous events” based on the definition of those events under their rules and issued guidelines. The REMIT also requires the Agency to carry out an initial assessment or analysis prior to notifying a suspected breach of REMIT to the respective NRAs which will conduct further investigation and enforcement at the national level.

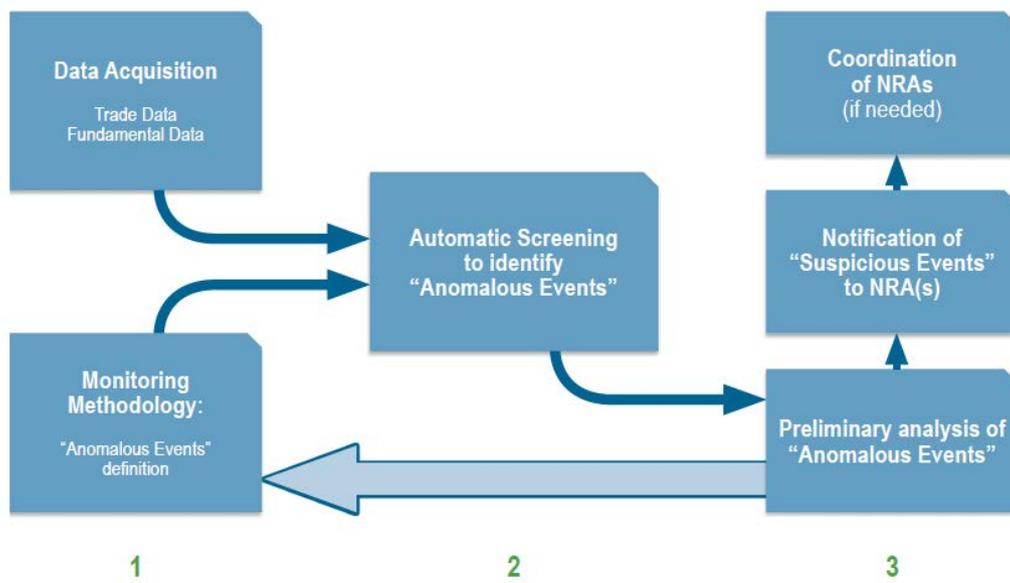


Figure 15 The Agency’s Market Surveillance Approach<sup>102</sup>

### 3.4.1. France

In France, the electricity can be traded on the European Energy Exchange (EEX), which operates spot and derivative trading. European Spot Exchange (EPEX) Spot is a sub-market on which short-term trading in power (day-ahead and intraday spot products) for Germany, France, Austria, and Switzerland takes place. EEX Power Derivatives (EPD or the derivatives market) provides a platform on which long-term trading of German and French power derivatives (future products) occurs. Trading on EPEX Spot is regulated by the Exchange Rules and Code of Conduct. As France is part of the European Union (EU), electricity market surveillance falls under the REMIT of 25 October 2011 and ACER has been tasked under REMIT with the surveillance of wholesale energy markets at the EU level.

In addition, the electricity market in France is also regulated under the French Energy Code and the Code of Commerce. The Energy Code sets out the mission and authority of the Commission of Regulation of Energy (CRE), the independent authority responsible for regulating the energy sector in France. The Code of Conduct contains the rules of good conduct which must be followed by members of the exchange in order to guarantee fair and transparent market conditions. This Code as well as the Exchange Rules are the relevant documents in relation to strategic behavior of the market. The Code of Conduct sets out the rules of conduct and market behavior which must be respected at all times by the exchange members whilst the Exchange Rules set out the terms under which exchange members trade in the market.

<sup>102</sup> ACER’s Annual Report on its Activities under REMIT in 2015

### **Code of Conduct**

In accordance with REMIT, the Code of Conduct also prohibits abusive practices affecting wholesale energy markets i.e. market manipulation including false or misleading behavior, collusion and even price positioning behavior. The Code specifically forbids its members from i) entering into any transaction or issuing any orders without a due economic justification<sup>103</sup>, ii) placing orders with no intention of executing them, or iii) giving false or misleading signals as to the supply of, demand for, or price of physical power contracts as this is regarded as an attempt to manipulate the market.

Pursuant to REMIT, the Code has provided the below set of activities or conduct in which they regard as market manipulation.

- False / misleading behavior
- Collusions or collusive cooperation among members
- Price fixing behavior

## **4.0 FINDINGS AND OBSERVATIONS**

The Wholesale Electricity Spot Market has been operating in Luzon since 2006 and in Visayas since 2010. Since then, significant progress has been attained, although a number of measures was introduced to further sustain the progress, promote competition, and protect the consumers while also providing an avenue for investors to gain profits in the market.

The Philippine Competition structure is anchored with the establishment of the EPIRA and PCA. These two laws aim to enhance economic efficiency and promote a free and fair competition. Pursuant to the objectives of the two laws, the competition structure in the Philippine Electricity industry highlighted the following:

- Introduction of various rules in the market on the approaches of the concerned agencies in relation to anti-competitive agreements, abuse or misuse of market power and even the anti-competitive mergers and acquisitions that may take place.
- Establishment of fines and penalties to penalize violations and non-compliance to the aforementioned laws and rules.
- Implementation of mitigating measures for possible acts of ACB which may result to unreasonable prices in the market.
- Strengthening of coordination between agencies by the establishments of protocols, procedures, or memorandum of understanding/agreement.

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<sup>103</sup> The Exchange Member further undertakes to provide, upon request, such justification to EPEX SPOT, meaning giving the reason that allows the Exchange Member:

- i. to decide to buy or sell for its own account
- ii. to trade on behalf of its client, knowing that the third-party's interest in buying or selling is genuine when placing an Order or executing a Transaction on the Exchange

Such reason should include but is not limited to the trading strategy, in particular:

- i. Retail/supply;
- ii. Hedging the risks of positions taken on the market;
- iii. Speculating in order to try to take benefit from a situation on the market by assuming risks;
- iv. Arbitrage between several market areas and the circumstances behind the decision to place the relevant order.

- Though the current rules highlighted on what the participants should not do (i.e., should not make an agreement that may have substantially lessen competition, should not misuse market power, etc.), there is no clear definition of the relevant concepts of anti-competitive behavior.
  - Let's take an example of one provision under the CRCP, participants shall not make an agreement / arrangement or arrive at an understanding that will have effect of substantially lessening competition. But there is no clear definition of what is substantially lessening competition is unlike in Australia. Another example is the misuse or abuse of market power / dominant position. Under the current rules, participants with substantial market power shall not misuse that power to substantially lessen the competition. But that market power is not clearly defined. Specific attributes or quantitative standards are needed to be established so as to unquestionably determine a participants' power. Having clear definitions of the relevant competition concepts in the market will allow the participants, policy makers, regulators, and monitors to have a common understanding in the market.

Though the main objective of EPIRA has been partly fulfilled, there were a lot more to experience or improve when it comes to the competition of the market. With that, this study has surveyed a range of electricity markets to learn from the respective experiences.

- Review of other electricity markets indicated that no “one size fits all” approach has been taken in defining anti-competitive behavior and abuse of market because markets differ greatly on the detail of market design and rules and markets differ in the powers and function assigned to market monitors and regulators.
- Moreover, it allows us to understand that there is no such thing as a “perfect” competition. Policymakers from various markets recognized this and started to work on a “workable” competition instead as a more realistic goal. With that, policymakers, regulators, and surveillance team are working closely in order to have a workable competition that will benefit both the consumers as well as the players. Given that, various efforts and mitigating measures were in place to ensure the protection of consumers while having a workable competition. Enhancements of the rules (either structural or behavioral rules) were also observed with the surveyed jurisdictions to help improve the competition.
- Unlike other markets, the European market assess all the behaviors of the participants regardless if they have intention to manipulate the market or there is impact to price, supply or demand. Participant's information was all inputted to their system which automatically screen any anomalous events which will be subject for further analysis. It is important to note that despite their reliance to their system, fact finding investigation or assessments are still part of their due process before concluding that a certain behavior is an act harming the competition.
- In other markets, the use of screening thresholds was utilized in order to determine any behavior that may harm competition. The use of these thresholds will allow the market to focus on the behaviors that have an effect or would likely affect the market condition. The use of these thresholds is advisable for screened behavior and to avoid having tedious investigation of behaviors that doesn't have any effect in the market. Some markets even use thresholds to determine behavior as withholding depending on the impact in the market (i.e. Midcontinent).
- Another thing that we could learn from the surveyed jurisdiction is that merely having a market power is not uncommon or illegal in itself but using that power to take advantage of the market,

creating barriers to entry and providing wrong impression of the true condition of the market is what considered illegal. Abuse of market power means exercising participant's market power beyond a level determined by public authorities to be the limit of reasonable pricing and proper market operations. As previously discussed, market power is abused in electricity markets when it is exercised beyond allowable levels or benchmarks, thereby leading to prices that are not considered just and reasonable under law/rules. Hence, these jurisdictions focused on the participants who attempt to exercise market power and whose actions would cause adverse market impacts.

- It is worth noting that gaming is a separate concept from abuse of market power which could be found to occur where a market defect is exploited by a market participant for its benefit and to the disadvantage of the market. A finding of gaming could be made in the absence of an abuse or even a mere exercise of market power. Similarly, an abuse or exercise of market power could be found to occur in respect of conduct that might not constitute gaming.
- In terms of rules, there are two types of approach observed in the surveyed jurisdictions. First, the usual construction of rules that focuses on what should the participants **NOT** do that may harm the competition the market (i.e., participants should **NOT** engage in activities that may harm competition). The other one is more on the positive approach and focuses on what the participants should do to support competition (i.e., Alberta). The latter approach indicates that participants are allowed to strategize on how they will maximize their profit in joining the market, but they should take into consideration that these strategies or behaviors support what is acceptable and the main objective of the rules – having a fair, efficient and open competition.
- Each market appears to have arrangements to ensure that bids reflect a genuine intention of generators to supply at the relevant price. Markets rely on behavioral rules against market manipulation to ensure that bids reflect demand and supply conditions and/or are made in good faith. As an example, in New Zealand, safe harbour provision was introduced wherein each generator must ensure that its conduct in relation to offers is consistent with a high standard of trading conduct. Another example is code of conduct or REMIT in Europe-France that forbids their members from entering into any transaction without a due economic justification or offering with no intention of executing them or giving false or misleading signals as to the supply of, demand for, or price (artificially causing prices to be at a level not justified by market forces of supply and demand).

These are the approaches that are similar with the Philippine setting as seen in the study of current practices of various markets.

- In terms of the definition of anti-competitive agreements, the Philippine electricity industry is somewhat similar with Singapore in which the competition and electricity act also center with anti-competitive agreements, abuse of dominant position and anti-competitive mergers.
- Similar with Australia, important considerations in our assessments are the purpose of a conduct, its effect or likely effect of substantially lessen the competition in the market though we have not categorized what is substantial lessening of competition.
- In terms of our approach in monitoring, we also have existing indices that focuses on the assessment of the current structure, participant's conduct as well as in the prices. Other indices

introduced by other markets are for possible adoption (i.e., performance indices in the SCP framework).

This Survey Paper is hereby made available to the general public and is respectfully submitted for information of the Honorable DOE and ERC.

## 5.0 REFERENCES

NEMS Market Surveillance and Compliance Panel. How Market Fundamental Factors Affect Energy Prices in the NEMS – An Econometric Model. 16 July 2007

Tan, Charmaine and Ng Ming Jie. The Role of Competition in Singapore's Economic Growth and Public Policies. Civil Service College. October 2016

Market Surveillance and Compliance Panel. Annual Report 2019.

Market Surveillance and Compliance Panel. Catalog of Data 2020. 29 June 2020

Frontier Economics. Review of Vesting Contracts Regime: A Report prepared for the Energy Market Authority. May 2016

Republic of Singapore. Electricity Act of 2001. Revised Edition 2002.

Electricity Authority of New Zealand. Industry and Market Monitoring: Competition Information Paper. 31 August 2011

Electricity Authority of New Zealand. Industry and Market Monitoring: Reliability and Efficiency Information Paper. 30 April 2012

Electricity Authority of New Zealand. Guidelines for Participants on Undesirable Trading Situations Version 3.3. 20 June 2016

Electricity Industry Participation Code 2010

Electricity Industry (Enforcement) Regulations 2010

Electricity Authority of New Zealand. Market Performance Quarterly Review – Information Paper. Q2 2020

Wholesale Advisory Group (WAG). Draft Discussion Paper on Pricing in Pivotal Pricing Situations: Proposed Changes following comments by Board. 29 April 2013

Midcontinent Independent System Operator. Market Monitoring and Mitigation Business Practices Manual. BPM-009-r14. Effective on 01 February 2019

FERC Tariff Rules Module D. Market Monitoring and Mitigation Measures 30.0.0

Potomac Economic Ltd. 2018 State of the Market Report for the MISO Electricity Market. July 2019

Global Competition Review. The Guide to Energy Market Manipulation. Encompass Print Solutions, Derbyshire. February 2018

Agency for the Cooperation of Energy Regulators. ACER's Annual Report on its activities under REMIT in 2012.

Agency for the Cooperation of Energy Regulators. ACER's Annual Report on its activities under REMIT in 2015.

Agency for the Cooperation of Energy Regulators. Guidance on the application of Regulation (EU) No. 1227/2011 of the European Parliament and of the Council of 26 October 2011 on Wholesale Energy Market Integrity and Transparency. 4<sup>th</sup> Edition. 15 October 2019

EPEX SPOT Code of Conduct. 31 December 2016

Nord Pool Group. REMIT Best Practice: A Sector Review on how to comply with REMIT related to inside information and market abuse. 15 January 2020

Official Journal of the European Union. Regulation (EU) No. 1227/2011 of the European Parliament and of the Council of 25 October 2011 on Wholesale Energy Market Integrity and Transparency.

Ontario Energy Board. Market Surveillance Panel. Monitoring Report on the IESO-Administered Electricity Prices for the period from May 2017 to October 2017. December 2019

Ontario Energy Board. Market Surveillance Panel Monitoring Report 32: Monitoring Report on the IESO-Administered Electricity Markets. 16 July 2020

Market Surveillance Panel. Monitoring of Offers and Bids in the IESO-Administered Electricity Markets. March 2010.

Electricity Restructuring Act of 2004

Potomac Economic Ltd. 2018 State of the Market Report for the ERCOT Electricity Market. June 2019

Potomac Economic Ltd. 2019 State of the Market Report for the ERCOT Electricity Market. May 2020

Public Utility Commission of Texas. PUC Docket No. 34061; Notice of Violation by TXU Corp., et al, of PURA 39.157(a) and P.U.C. Subs. R. 25.503(g)(7)

Public Utility Commission of Texas. Staff Inquiry into Allegations Made by Texas Commercial Energy regarding ERCOT Market Manipulation. 28 January 2004

Chapter 25. Substantive Rules Applicable to Electric Service Providers.

Australian Energy Regulator. Wholesale Electricity Market Performance Monitoring – Statement of Approach. March 2018

Australian Competition and Consumer Commission. Guidelines on Misuse of Market Power. August 2018

Australian Competition and Consumer Commission. State of the Market Report 2018.

Australia's National Electricity Law

Competition and Consumer Act of 2010

Market Surveillance Administrator. 2018 Market Share Offer Control Report. 7 June 2018

Market Surveillance Administrator. State of the Market Report 2012: An Assessment of Structure, Control, and Performance of Alberta's Wholesale Electricity Market. 10 December 2012

Alberta Regulation 159/2009. Fair, Efficient and Open Competition Regulation. Alberta's Queen's Printer. 30 October 2019.

Market Surveillance Administrator. MSA Enforcement Statement: Economic Withholding. 29 June 2020.

Market Surveillance Administrator. Offer Behavior Enforcement Guidelines: For Alberta's Wholesale Electricity Market. 14 January 2011. (Revoked as of 17 March 2017)

Alberta Utilities Commission Act of 2007

Alberta Utilities Commission. Market Surveillance Administrator Allegations against TransAlta Corporation et. al., Mr. Nathan Kaiser and Mr. Scott Connelly. 27 July 2005.

Department of Energy. Department Circular No. DC2020-10-0021 "Adopting Further Amendments to the Wholesale Electricity Spot Market (WESM) Rules (Provisions for the Implementation of Independent Market Operator)". 22 October 2020

Energy Regulatory Commission. ERC Case No. 2019-005 SC, In the matter of violation of ERC Orders, Rules and Regulations – Prime Meridian Power Corporation (PMPC). 13 May 2020.

WESM Market Manual. Market Surveillance, Compliance and Enforcement Market Manual Issue 3.0.

Memorandum of Agreement between the Philippine Competition Commission and the Energy Regulatory Commission. August 2019.

Memorandum of Agreement between the Energy Regulatory Commission and the Philippine Electricity Market Corporation. 31 January 2008.

Energy Regulatory Commission. Competition Rules and Complaint Procedures.

Market Surveillance Committee. Catalogue of Market Monitoring Data and Indices Issue 1.0. March 2006.

Villamejor-Mendoza, Maria Fe. Competition in Electricity Markets: The Case of the Philippines. August 2008.

Philippine Competition Commission. Merger Review Guidelines. October 2018.

Energy Regulatory Commission. ERC Case No. 2014-021 entitled “In the matter of the prices in the Wholesale Electricity Spot Market (WESM) for the supply months of November and December 2013 and the exercise by the Commission of the Regulatory Powers to intervene and direct the imposition of regulated prices there in without prejudice to the ongoing investigation on the allegation of Anti-Competitive Behavior and possible abuse of market power committed by some participants”. 15 October 2014.

Philippine Competition Commission. Handbook: How the Philippine Competition Act affects consumers.

Philippine Competition Commission. An Introduction to Competition Law – Module 1.

Philippine Competition Commission. On Anti-Competitive Agreements – Module 2.

Philippine Competition Commission. On Abuse of Dominant Position – Module 4.

Navarro, Adoracion, Detros, Keith and dela Cruz, Kirsten. Post-EPIRA Impacts of Electric Power Industry Competition Guidelines – Discussion Paper Series No. 2016-15. Philippine Institute for Development Studies. May 2016.

Brucal, Arlan and Ancheta, Jenica. The Philippine electric power industry under EPIRA. December 2018.

Republic Act No. 10667 of 2015 or an Act providing for a National Competition Policy Prohibiting Anti-Competitive Agreements, Abuse of Dominant Position and Anti-Competitive Mergers and Acquisition, Establishing the Philippine Competition Commission and Appropriating Funds Thereof.

Republic Act No. 9136 or an Act ordaining reforms in the electric power industry, amending for the purpose certain laws and other purposes.

Rudnick, Hugh and Velasquez, Constantin. Learning from Developing Country Power Market Experiences. World Bank Group. January 2019

## 6.0 APPENDIX

### Appendix 1 Matrix of Misuse of Market Power of Competition Rules and Complaint Procedures

<b>Degree of Power</b> <i>(Rule 5 Section 2)</i>	<b>Factors</b> <i>(Rule 5 Section 3)</i>	<b>Use / Misuse</b> <i>(Rule 5 Section 4)</i>
<p>A Person is to be taken to have a substantial degree of market power in that Market if:</p> <ul style="list-style-type: none"> <li>a) An affiliate of a Person has, or two or more Affiliates of a person; or</li> <li>b) A Person and its affiliates, or a Person and two or more of its affiliates</li> </ul> <p>Together, have a substantial degree of market power</p>	<p>In determining whether a Person has misused its power, the following factors shall be considered:</p> <ul style="list-style-type: none"> <li>a) That person would have acted in the way it did, whether or not it had a substantial degree of market power, and</li> <li>b) The person was reasonably justified in using its power in the way it did.</li> </ul>	<p>The circumstances in which a Person uses or misuses its power in a Market may include where that Person:</p> <ul style="list-style-type: none"> <li>a) Does an act; or</li> <li>b) Refuses to do, or intentionally refrains from doing an act; or</li> <li>c) Makes it known that an act will or will not be done; or</li> <li>d) Refuses to do an act, or to offer to do an act, except on a condition or conditions; or</li> <li>e) Makes it known that an act will not be done, except on a condition or conditions; or</li> <li>f) Makes it known that an act will be done on a condition or conditions.</li> </ul>

**Appendix 2 New Zealand's Structure-Conduct-Performance Framework**

Measures of Market <b>STRUCTURE</b>				
Seller Concentration	Buyer Concentration	Barriers to Entry	Product Differentiation	Availability of information on alternative suppliers
<ul style="list-style-type: none"> <li>▪ Sum of market shares</li> <li>▪ Market share concentration ratio</li> <li>▪ Herfindahl-Hirschman Index</li> <li>▪ Pivotal supplier indicator</li> <li>▪ Residual supply index</li> <li>▪ Residual demand analysis</li> </ul>	<ul style="list-style-type: none"> <li>▪ % of customers switching suppliers per month / quarter / year</li> <li>▪ Customer complaints</li> </ul>	<ul style="list-style-type: none"> <li>▪ Number of entries/exits as % of total number of suppliers</li> <li>▪ Closures / mothballing as % of total capacity</li> <li>▪ Degree of vertical integration e.g. retail sales as % of own generation</li> </ul>	<ul style="list-style-type: none"> <li>▪ Range of spot/forward contracts</li> <li>▪ No. of retailers actively seeking customers by area and type</li> <li>▪ types of price contracts available to customers</li> </ul>	<ul style="list-style-type: none"> <li>▪ Transparency / availability of info on pricing and contract options (e.g. on internet)</li> </ul>

Measures of Market <b>CONDUCT</b>				
Price – Cost Relationship	Revenue and Input Costs	Output	Curious Bids and Offers	Collusion Opportunities
<ul style="list-style-type: none"> <li>▪ Price – Cost margin index</li> <li>▪ Lerner Index</li> </ul>	<ul style="list-style-type: none"> <li>▪ Panzar – Rosse H Statistic</li> </ul>	<ul style="list-style-type: none"> <li>▪ Economic withholding analysis</li> <li>▪ Physical withholding analysis</li> </ul>	<ul style="list-style-type: none"> <li>▪ Number of bids that are hard to explain; plus published investigations into specific instances</li> </ul>	<ul style="list-style-type: none"> <li>▪ % of suppliers who are members of an industry body</li> <li>▪ No. of joint letters / submissions to regulators</li> </ul>

Measures of Market <b>PERFORMANCE</b>				
Allocative Efficiency	Production Efficiency	Dynamic Efficiency	Profitability / return on investment	Pricing trends
<ul style="list-style-type: none"> <li>▪ Degree to which generation investment favors lower cost options over higher cost options</li> <li>▪ Extent to which seasonal and daily variances in production costs are reflected in prices</li> </ul>	<ul style="list-style-type: none"> <li>▪ Trend in reserve margin</li> <li>▪ Actual less optimal reserve margins</li> <li>▪ Ratio of energy production to total average capacity</li> <li>▪ Total Factor Productivity</li> </ul>	<ul style="list-style-type: none"> <li>▪ Measures of retail and wholesale product innovation</li> <li>▪ Rate of adoption of new technology compared with efficient rate</li> </ul>	<ul style="list-style-type: none"> <li>▪ Cost to income ratios</li> <li>▪ Net revenue benchmark analysis</li> <li>▪ Return on investment</li> <li>▪ Return on equity</li> </ul>	<ul style="list-style-type: none"> <li>▪ Nodal price comparisons</li> <li>▪ Actual vs. forecast comparisons</li> <li>▪ Market load vs. price</li> </ul>