

THE CHINA'S GOVERNMENT PROCUREMENT INTERNATIONAL TRADE NEGOTIATIONS IN THE ENERGY SECTOR WITH WTO MEMBERS

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ABSTRACT: All through the negotiations to access the Government Procurement Agreement (GPA) of the WTO, China maintained the position of excluding the Energy Sector (ES) from its offer even if some members of the GPA urged China to include it. This raises a question regarding what these countries have to offer in exchange for their own requirements. Can they offer reciprocal conditions, one of the fundamental principles of the GPA? This paper addresses this negotiation problem by using game theory modeling and a multiple case study comparative analysis. The findings suggest not only that the examined countries cannot offer reciprocity in regards to their requirements of China, but that their openness among each other is marginal. Finally, the methodology employed in this research provides an approach to better identify equilibrium and to facilitate negotiations of such agreements. This approach can be generalized to other sectors of activity or other similar agreements.

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INTRODUCTION

Since China started negotiating its accession to the Government Procurement Agreement (GPA) of the WTO, this country has submitted two offers that were rejected by the GPA members. One of the main issues that led up to this position by some of the GPA members was the absence of the energy sector (ES) from China's offer. Why, on the one hand does China want to join the GPA and, on the other hand, it refuses to open its ES as requested by current GPA members? Can the other GPA members make a reciprocal offer, which corresponds to one of the fundamental principles of the GPA? This is a negotiation problem that can be analyzed using game theory modeling and comparative analysis in order to better understand the positions and strategies of the actors, given that this approach is particularly useful to understand the essential structure of negotiation in the field of research on strategy (Powell, 2003).

Reciprocity is a fundamental principle of the GPA that provides a foundation to balance the liberalization of government procurement (GP¹) among the GPA members. Therefore, we can postulate that a refusal from China to open its ES could be a response to a potential non-reciprocal situation. When carrying out this comparative analysis, we found that it is reasonable to believe that in fact the GPA members cannot offer reciprocal conditions corresponding to their requirements of China with regard to the ES and that the ES is only marginally open among countries in the GPA. Game theory helps us to understand why this situation led to the failure of the multiple rounds of negotiations with China. Furthermore, the model of analysis suggested in this paper could lead to a better understanding of the position of the GPA members being studied, while providing a methodology that could be helpful for practitioners, policymakers and negotiators in identifying a more well-balanced scenario for current and future negotiations surrounding the GPA or other GP agreements, as well as sectors other than the ES.

CONTEXT AND THEORY

Following its accession to WTO in 2001, China announced that it would join the GPA as soon as possible. China effectively started

negotiating its accession to the GPA in April 2006. In December 2007, China submitted its first offer to the GPA members (Publictender.com, 2007), who judged the offer as insufficient. In particular, Canada, the European Union, Japan, Korea and the United States (Ding, 2010) urged China to submit a second offer, making three major requests to China:

- Include a greater proportion of central government entities;
- Include access to sub-central entities (provinces, municipalities, etc.);
- Open the public utilities sector (including the electric energy sector (ES) which was one of the specific requirements).

Three years later in July 2010, China submitted a second offer that included greater central government coverage, without including the sub-central entities and the public utilities sector. The reaction of the GPA members was positive with regard to the enlargement of the central entity coverage but lukewarm regarding the persistent exclusion of sub-central entities and the public utilities sector (BNA, 2010). Moreover, the United States issued specific comments about the absence of the electric energy sector (Marantis, 2010). Indeed, Christopher Adams, minister counselor for trade affairs at the US embassy in China, spoke in a seminar in Beijing on July 2010 (Zhou and Lai, 2010):

“Washington is not asking China to cover all of its State-owned enterprises (SOEs) but does expect the coverage of SOEs that carry out government activities and provide public services, such as electric power companies², Adams said, urging China to include more sub-central government entities and SOEs in accession to the GPA.”

In December 2011, China's second offer was officially rejected (Wang, 2011), but important questions remain. Is it the right time for China to access the GPA? If so, why does China continue to not

respond to the demands of the GPA members and why does China keep protecting its ES with “Buy National” policies?

Two important dimensions emerge from the questions raised above. First, is it the right moment for China to access the GPA? Several authors have debated the issue; some think that it is the right time for China to access the GPA (Kho and Smith, 2009), because it will benefit from GP from other GPA members' procurements that are not accessible outside of the GPA. On the other hand, others think that China is not ready to join the GPA (Wang, 2007), mainly because its laws and institutions are not ready to be integrated with GPA standards. It has also been shown in previous research that it is reasonable to believe that the economic context is not actually favorable for China's accession to the GPA (Coudé et al., 2010)³. This last piece of research has revealed that in fact, China seems to benefit from foreign direct investment (FDI) attracted by its government procurement “Buy National” policies (GPBNP). Indeed, Foreign Multinational Corporations (FMNCs) that want to do business with the Chinese government have no other choice but to open a subsidiary company in China. And we know that foreign direct investment (FDI) has a positive impact on GDP, particularly in developing countries (Markusen and Venables, 1999; UNCTAD, 1992-2005; Mardas, et al. 2008). These relations could provide an explanation as to why the GPA members are putting increasing pressure on China to accelerate its accession to the Agreement.

As suggested in previous work, there are also several political and economical reasons supporting the Gilpin logic of delaying negotiations for China, which could indeed improve China's negotiation power in the future (Gilpin 2001)⁴. Moreover, it has been proposed that maintaining negotiations could be useful to China in order to manage political and diplomatic issues with potential partners, providing China with enough time to adapt its laws and institutions (Coudé et al., 2010). In the conclusion of this previous research performed before the submission of China's second offer to the GPA members, it was proposed that China's second offer would probably be enough to keep negotiations going, but not enough to finalize China's accession to the GPA. In reality, as mentioned earlier, the GPA members also rejected this second offer, and four days after

its second offer was submitted to the GPA members without including the ES, China announced an investment of 738 billion USD in the renewable energy sector (RES) for the following 10 years (Xioyi, 2010; Prakash, 2010). It is therefore reasonable to believe that China will keep attracting more FDI by keeping its GPBNP on the ES and by investing massively in this sector. Nevertheless, China wants to join the GPA and keep negotiating to access the GPA in the near future.

Secondly, we address the following questions: "Why is China not responding to the demands of the GPA members in relation to its accession?" and "What do the GPA members have to offer to China in exchange for their own requirements?" These questions raise another major issue regarding negotiations that requires more attention and which is the main objective of this paper. In previous research performed at the end of 2009 and beginning of 2010, it was concluded that China wanted to join the GPA, but not under any conditions. Indeed, China will join the GPA when its accession will be close to a win-win situation (Coudé et al., 2010). Therefore, this paper aims to study the level of openness to international trade through the GPA of the countries that ask China to open its ES by addressing this specific question: Do the GPA members that request China to open its GP in the ES to international trade through the GPA offer a comparable openness? In fact, even if the GPA members are looking forward to get access to China's GP market in the ES, they still have restrictions and limitations concerning their own openness to the GPA. That question can be answered by identifying the main similarities and distinctions of the GPA members in the GP openness to international trade in the ES. Furthermore, this questioning refers to one of the fundamental principles of the GPA: reciprocity. If there is no reciprocity in the market coverage, such agreement could lead to a positive or negative commercial balance (in GP) between the participants of the agreement. In theory however, reciprocity should lead to a better balance of the commercial exchanges.

By integrating the advantages and addressing the reciprocity of the negotiations, we can construct a model inspired from a classic game theory approach. As Powell argues, game theory modeling in strategy is particularly useful to generate situation-specific models because it

helps us to understand the essential structure of negotiation (Powell, 2003). Therefore, we suggest the following four hypotheses:

H₁: The mutual offer is close to a reciprocal situation among members of the GPA. An agreement under such conditions would result in a situation close to a neutral commercial balance between the GPA members.

H₂: China has more to offer than its counterparts. This type of agreement would lead to a negative commercial balance for China if it joins the GPA (and a positive commercial balance for other members). We assume that, "ceteris paribus", China has no incentive to join the GPA under these circumstances.

H₃: China has less to offer than its counterparts. This situation would lead to a positive commercial balance for China if it joins the GPA (and a negative commercial balance for one or several other GPA members). We assume that other GPA members have no incentive to accept China as a new GPA member in such a situation⁵.

H₄: The mutual offer between GPA members and China is too far from their mutual requirements. Under these circumstances no one wants to sign an agreement and there is no commercial exchange through the GPA.

Even if it is possible to argue that the current Chinese GPBPNP position yields a positive impact on its economy, there are other advantages to access to the GPA and opening GP to international trade. Indeed, these advantages are recognized by all members in the GPA (WTO, 2009a), by China (The Government Procurement Law of the People's Republic of China, 2002, p.2) and as well as by skeptics in the debate regarding the proper time for China to access the GPA (Kho and Smith, 2009; Wang, 2007). The advantages are the following:

- Enlarging competition in the purchasing process leads to quality/price ratio maximization. It yields a more optimal utilization of public money.
- By conforming to international standards of GP regulations, it reduces corruption and agency costs related to GP.

The first positive effect is present for all current members when a new country joins the GPA, as well as for the new entrant. Concerning the second effect, it is not an obligation for a government to access the GPA in order to adopt international standards on GP. For that reason, we can conclude that it is not necessary to include the second effect in the final representation of this problem. Consequently, the negotiation problem of this research can be represented as shown in Table 1.

Table 1
Negotiation between China and GPA members
A suggested analysis model based on game theory

		China	
		Win	Lose
Other GPA members	Win	Close to neutral commercial balance and better quality/price ratio of GP	Negative commercial balance for China and better quality/price ratio of GP
	Lose	Positive commercial balance for China and better quality/price ratio of GP	No commercial exchanges and no one can access a better quality/price ratio of GP

This is where the reciprocity problem appears. For example, if China opens its GP market to a greater extent than others, it would mean that suppliers from other countries could sell more in China than Chinese suppliers would be able to sell to other GPA members. This would then translate into a negative commercial balance for China. This example is not so far from reality considering the unique economic and political structure of China. In fact, the accession of China to the GPA represents the first time a country with a large state-

owned structure is negotiating its accession to the GPA (Wang, 2007). This situation could lead to an imbalance in reciprocity considering that in some countries, the ES is deregulated with a significant privatization of the ES, and procurement in this field no longer belongs to government (or at least not totally).

Considering these realities and to better understand the potential positions of the actors in the negotiation of the GPA, we propose to study the differences and similarities of openness in the ES among the examined countries as well as the market structure of the ES of those countries in order to approximate the proportion of this market that is government-owned in comparison to the proportion owned by the private sector. These factors appear to be essential to arrive at conclusions about this negotiation problem.

METHODOLOGY

To answer the research question, we chose a case study approach that is of particular interest to help address contemporary problems (Yin, 2009). We used a multiple case analysis based on select countries while focusing on the following GPA members because they are the ones who made specific requests to China: Canada, the European Union, Japan, South Korea and United States. Since the openness of the ES is a specific requirement of these countries, we focused on this sector in each case. To build these cases, we looked for openness in the ES as well as the ES market structure among the examined countries, using content analysis from several official sources as shown in Table 2.

Using this information, we performed a comparative analysis and identified the differences and similarities that emerge from these cases.

Table 2 Case Study Structure	
Examined Aspect	Data Collection
Actual ES GP openness through the GPA	- Official documentation of GPA (WTO, 2012). This information is available in several annexes of the agreement. See Appendix 1 of this paper for the list of documents consulted.
Market structure (more specifically in what proportion ES is privately owned compared to the proportion that is publically owned).	- Economic data and other market structure studies of the ES or more generally in the electric energy field. - We also performed searches on the official database (WTO, 2011) of historical notices for purchasing in the ES of the examined countries (See Appendix 1 for the complete list of databases consulted).

MUTIPLE CASE COMPARATIVE ANALYSIS: RESULTS OF GP OPENNESS TO THE GPA IN THE ES

The GPA is an agreement in which the different parties define the coverage of GP that is open to international trade among private corporations based within the country members of the GPA. It is important to specify that because of the coverage of a GP agreement, the countries that are members of such an agreement are obliged to give the opportunity to submit a proposal to all qualified enterprises in the sectors and countries covered by the agreement. Nevertheless, even if a sector of activity is not open or a country is not represented, nothing prevents a country to open this activity sector or include a supplier from another country if it wants to do so. For example, when China built the Three Gorges Dam, the following FMNCs were involved (Le, 2005): ABB (Switzerland); Bureau Veritas, Électricité de France and Alstom Power (France); Siemens and Voith Siemens (Germany)

as well as SNC Lavalin (Canada). Consequently, the main difference between joining a GP agreement or not is the obligation of openness with counterparts after an agreement is signed with the countries.

In the case of the GPA, each party of the agreement provides information regarding its own GP that is open to other parties of the agreement in Appendix 1 of the official text of the GPA. The content of this appendix is different for every country and represents the offer that each of them has made. Therefore, it contains information presented on the same basis, which proves valuable in performing a comparative analysis of the GPA members studied in this research. For new entrants to the GPA, it is requested that they submit an offer on the same basis. Thus, China's offer follows the same structure as the examined countries, namely: Canada, the European Union, Japan, South Korea, and the United States. This appendix contains 5 annexes and a general notes section that includes the following information:

- Annex 1: A list of the central government entities covered by the GPA, the thresholds applied to central government entities and lists of products purchased by specific central government entities;
- Annex 2: A list of the sub-central government entities covered by the GPA and the thresholds applied to sub-central government entities;
- Annex 3: A list of all other entities that procure in accordance with the provisions of the GPA (mainly state-owned enterprises (SOEs)) and the thresholds that apply to SOEs;
- Annex 4: Covered services, whether listed positively or negatively;
- Annex 5: Covered construction services, whether listed positively or negatively;
- General notes: Specifies inclusions or exclusions that apply to all the annexes.

It is important to mention that the information available at the time we performed this research is based on several rounds of negotiations realized before the last round of negotiations concluded

in December 2011 (WTO, 2012). The annexes that we consulted and that were available at the end of March 2012 have been published before this important new step for the GPA occurred. Considering that some of the annexes contain a note that indicates that more information would be published within 18 months following the new GPA, it is reasonable to believe that some GPA members might have updated their offer within that timeframe⁶.

The objective of this section of the comparative analysis is first, to present which entities as well as products, services and construction services in the ES are covered by the GPA for each country being studied in order to observe if the fundamental reciprocity principle of the GPA is applied among participants and second, to compare the offers of the current participants in regard to the position of China.

In the following pages, we present a set of tables that summarize the analysis of the entities, products, services and construction services covered in the context of the GPA for the ES for every country studied (section in gray represents the area not covered by the GPA). These tables provide the necessary information to compare the openness of the countries that request China to open its energy sector since they consider that China's offer to the GPA members should not entirely exclude the ES as we can see in the table below labeled "China". Nevertheless, the position of China could probably be explained by the fact that most of its ES is made up of state-owned organizations. Therefore, this comparative analysis would be incomplete without a comparison of the ES market structure of the examined countries. The comparative analysis of the ES market structure is presented in the next section.

CHINA				
Type of Entity	Covered Entities	Goods	Services	Construction Services
Central Entities	National Bureau of Energy	All goods	- Architectural Services	No specific inclusion
Sub-central Entities	This list is blank in the offer of China		- Management Services	
SOEs	State Electricity Regulatory Commission		- Consulting Services	
General Notes Applying to All Annexes	- All sectors are closed due to the general notes that explicitly exclude procurement made by central and sub-central entities as well as SOEs in connection with activities in the field of electricity and energy.			

CANADA			
Type of Entity	Covered Entities	Goods	Services
Central Entities	The Canadian Nuclear Safety Commission and the National Energy Board (on its own account)	All goods	General construction services: - Dams - Long distance power lines (cables) - Local cables and related works
	The Department of National Defense, Coast Guard and RCMP are included in the coverage	Limited to: 1) Mechanical power transmission equipment 2) Furnace, steam plant, drying equipment and nuclear reactors 3) Electric wire and power and distribution equipment	
Sub-Central Entities	Ministries, departments or agencies related to energy under the provincial and territories authorities	All goods	Public utilities are excluded from the GPA
	The Agreement does not apply to Crown Corporations of the provinces and territories	N/A	
SOEs	No specific coverage of the energy sector from SOEs controlled by central government	N/A	Dredging is excluded
	Canada promised to publish a list of SOEs with a definitive list issued within 18 months after the conclusion of the new GPA.	N/A	
General Notes applying to All Annexes	- The ES is specifically excluded from the General notes for the European Union. - Procurements made in support of safeguarding nuclear materials or technology are excluded.		

EUROPEAN UNION				
Type of Entity	Covered entities	Goods	Services	Construction Services
Central Entities	Energy ministries, departments or regulatory authorities from most countries of the European Union are open through the GPA.			
Sub-central Entities	Most ministries, departments or agencies related to energy are listed.			
SOEs	Every country provides an important list of contracting SOEs. It is specified that those entities be subject to the GPA for the provision or operation of fixed networks intended to provide a service to the public in connection with the production, transportation or distribution of electricity or the supply of electricity to such networks.	All Goods	<ul style="list-style-type: none"> - Management consulting services and related services (except arbitration and conciliation services) - Architectural services; engineering and integrated engineering services, urban planning and landscape architectural services; related scientific and technical consulting services; technical testing and analysis services 	<ul style="list-style-type: none"> - General construction services: - Dams - Long distance power lines (cables) - Local cables and related works
General Notes Applying to All Annexes	<ul style="list-style-type: none"> - Contracts awarded by central and sub-central entities in connection with activities in the ES are not included, as well as the purchase of the supply of energy or fuels for the production of energy by SOEs. - Electricity Sector is excluded from suppliers and service providers of Canada and Japan for the SOEs until such time as the EU has accepted that the parties concerned give comparable and effective access for EU undertakings to the relevant markets. - EU does not apply the GPA to service providers of parties, which do not include service contracts from the relevant central and sub-central entities as well as SOEs, and the relevant services and construction services in their own coverage. - Until such time as the EU has accepted that the parties concerned provide access to EU suppliers, service and construction service providers for their own markets, the EU will not extend the benefits of the GPA to suppliers and service provider from: <ul style="list-style-type: none"> - Korea: electrical transformers, plugs, switches and insulated cables - USA: dredging - Canada and USA: Contracts for good or service components of contracts which, although awarded by an entity covered by this agreement, are not themselves subject to this agreement. 			

JAPAN				
Type of Entity	Covered Entities	Goods	Services	Construction Services
Central Entities	Ministry of Economy, Trade and Industry	All goods	Same as SOEs (See below)	N/A
	Department of National Defense	Limited to: - Electric wire and power and distribution equipment		
Sub-Central Entities	- No entity related to ES is listed	Procurement related to the production, transport or distribution of electricity is not included.		
SOEs	- Japan Atomic Energy Agency - New Energy and Industrial Technology	All goods	Architectural, engineering and other technical services, except: - Final design services of architectural design services - Contract administration services - Design services consisting of one or a combination of final plans, specifications and cost estimates of engineering design services for the construction of civil engineering works - Other engineering services during the construction and installation phase	N/A
	- Japan Nuclear Energy Safety Organization	N/A		
General Notes Applying to All Annexes	Procurement, which could lead to the disclosure of information incompatible with the purpose of the Treaty on the Non-Proliferation of Nuclear Weapons or with international agreements on intellectual property rights, is not included. Procurement for safety-related activities aiming at utilization and management of radioactive materials and responding to emergencies of nuclear installations is not included.			
	- For goods and services of Canada and suppliers of such goods and services, the GPA does not apply to procurement by the entities listed in SOEs, except for the Japan Nuclear Energy Safety Organization.			

KOREA				
Type Entity	Covered Entities	Goods	Services	Construction Services
Central Entities	Ministry of Education, Science and Technology	All goods	Same as OS (see below)	
Sub-central Entities	No specific entity listed	N/A		
SOE	Korea Electric Power Corporation	<ul style="list-style-type: none"> - All goods except: <ul style="list-style-type: none"> - electric transformers, static converters, inductors, parts thereof or rectifiers - electrical apparatus for switching or protecting electrical circuits, electrical connection for over 1000 volts switches, fuses, lightning arresters, surge suppressors, plugs, junction boxes - boards, panels, consoles, desks, cabinets, etc. with electrical switching apparatus, etc. - insulated wire, cable and other insulated electric conductors; optical fiber cables made up of individually sheathed fibers 	<ul style="list-style-type: none"> - Architectural services - Engineering services and integrated engineering services - Management consulting services - Project management services - Environmental investing and assessment services only - environmental impact assessment services 	<ul style="list-style-type: none"> General Construction services: <ul style="list-style-type: none"> - Dams - Long distance power lines - Cables - Local cables - and related works
General Notes	For goods and services including construction services) in Canada and suppliers of such goods and services; this Agreement does not apply to procurement by the O.E. listed. Korea is not to be covered with respect to these annexes and is resolved with Canada.			
Applying to All Annexes	- Service listed covered with respect to particular party only to the extent that such party has included that service in their offer.			

UNITED STATES				
Type of Entity	Covered Entities	Goods	Services	Construction Services
Central Entities	<ul style="list-style-type: none"> - Department of Energy - Nuclear Regulatory Commission - Office of the Nuclear Waste Negotiator 	- Same as sub-central entities and SOEs		- Same as SOEs (see below)
Sub-central Entities	<ul style="list-style-type: none"> Departments and agencies under executive branches of Arizona, Arkansas, California, Colorado, Florida, Louisiana, Minnesota, New York, Rhode Island, Utah, Vermont Departments and agencies under executive branches of Montana Departments and agencies under executive branches of Kansas, Oklahoma and Tennessee 	N/A		N/A
SOEs	<ul style="list-style-type: none"> The following SOEs are listed in list A: <ul style="list-style-type: none"> - Power Marketing Administrations of the Department of Energy - Tennessee Valley Authority - Bonneville Power Administration - Western Area Power Administration - Southeastern Power Administration - Southwestern Power Administration The following SOEs are listed in list B: <ul style="list-style-type: none"> - The New York Power Authority The following SOEs are listed in list C: <ul style="list-style-type: none"> - US Department of Energy, Office of Energy Efficiency and Renewable Energy, Energy Efficiency and Conservation Block Grants - US Department of Energy, Office of Energy Efficiency and Renewable Energy, State Energy Program 	<ul style="list-style-type: none"> - Mechanical power transmission equipment - furnace, steam plant, drying equipment and nuclear reactors - electric wire, and power and distribution equipment (Department of Energy: except procurements made in support of safeguarding nuclear materials or technology and entered into under the authority of the Atomic Energy Act) 	<ul style="list-style-type: none"> Public utilities are excluded from the GPA 	<ul style="list-style-type: none"> - General Construction services: <ul style="list-style-type: none"> - Dams - Long distance power lines (cables) - Local cables and related works - Dredging is excluded (in the services annex)
General Notes Applying to All Annexes	<ul style="list-style-type: none"> - For goods and services and construction services of Canada and suppliers of such goods and services, the GPA does not apply to procurement by the entities listed in Lists A and B of the SOEs. The United States is prepared to amend this note at such time as coverage with respect SOEs can be resolved with a party listed above. - The United States will not extend the benefits of this agreement to Japan as regards the award of contracts by SOEs that are responsible for the generation or distribution of electricity. 			

MULTIPLE CASE COMPARATIVE ANALYSIS RESULTS OF THE ES MARKET STRUCTURE

Defining the market structure of a sector of activity across many countries is prohibitively time-consuming. For that reason, we decided to focus solely on specific information relevant to the context of this research that aims at determining the proportion of the ES market of the examined countries that is open through the GPA. Therefore, we identified the specific areas potentially open to international trade within the examined countries by using the comparative analysis that was performed in the previous section of this research. We then determined for each country the potential proportion of the ES that is or is not open through the GPA. We present the results of that analysis by country using the same structure used in the previous section of this paper.

China

Even if it is clear that the Chinese government still does not want to open its ES, it is important to consider the market structure of the ES in our conclusions. In 2002, the State Power Corporation that was controlling the ES in China started to be dismantled in separate units. Since that period, the power generation sector under SOE controls approximately half of China's electrical capacity. Independent power producers, mainly private entities of the state-owned companies, are now producing the remaining capacity. This strategy tends to further open the sector to FDI, but observers consider these opportunities as limited. Finally, the Southern Power Company and the State Power Grid Company control all transmission and distribution assets and are both state-owned companies (U.S. Energy Information Administration, 2010a).

Therefore, it is reasonable to consider that most of the ES is controlled by state-owned organizations and/or under the control of the Chinese Government.

Canada

In Canada, we can see that there are three central entities that are open to international trade in the ES:

- The Canadian Nuclear Safety Commission
- The National Energy Board (on its own account).
- The Department of National Defense.

The first two central entities are open for the purchasing of all goods while the last one limits purchasing to the three groups of products as

presented in the previous section. Furthermore, these three central entities also open their purchasing in the construction sector. Nevertheless, for these organizations the results of our research on the Canadian official database of notices for purchasing (MERX) gave no results in the sectors potentially opened in the offer of Canada.

Regarding sub-central entities, the ministries, departments or agencies related to ES under provincial and territorial authorities are open in Canada. Furthermore, crown corporations evolving into the energy field under provincial and territorial authorities are excluded from the GPA (which are SOEs equivalent). In Canada the generation, transmission and distribution of energy are mainly under the authority of municipal, regional or provincial organizations, and the largest ones are crown corporations under the jurisdiction of provincial and territorial authorities (such as BC hydro, Hydro-Quebec or Manitoba Hydro), entities excluded from the GPA. Furthermore, the others are mainly privately owned (Canadian Electricity Association, 2012) and do not apply to the GPA.

For all of these reasons, we consider that it is reasonable to believe that the Canadian ES is entirely excluded from the GPA (which is confirmed by the fact that most of the other parties of the GPA specifically excluded Canada in their own ES purchasing).

European Union

The European Union has excluded central and sub-central entities of the ES from the GPA. The GPA however, particularly in the areas of energy generation, transmission and distribution, covers SOEs in the EU offer and EU indicates a significant list of these entities. The EU has opened the purchasing of goods, services and construction services in the ES made by SOEs.

Nevertheless, the EU has also the biggest list of exclusions in its general notes (when compared with other countries examined in this research). These exclusions are congruent with the fundamental reciprocity principle of the GPA. In fact, the EU offers to open its ES to other members of the GPA who can offer the same level of openness. In particular, the following notes from the "General Notes" section of the offers of the EU represent this position:

- The ES is excluded to suppliers and services providers of Canada and Japan in the context of SOEs until such time as the EU has accepted that the parties concerned give comparable and effective access for EU undertakings to the relevant markets;

- EU not apply the GPA to service providers of parties which do not include service contracts for the relevant SOEs and the relevant services and construction services in their own coverage;
- Until such time as the EU has accepted that the concerned parties provide access for EU suppliers and service providers to their own markets, the EU will not extend the benefits of this agreement to suppliers and service providers from:
 - Korea: electrical transformers, plugs, switches and insulated cables;
 - USA: dredging;
 - Canada and USA: contracts for goods or service components of contracts.

Furthermore, some important private as well as public organizations are not listed in EU's offer, but the result of our search in the official database of notices for purchasing (TED) of the EU provided good results. In fact, we were able to identify several purchases in sectors and entities covered by EU's offer. Thus, it is reasonable to conclude that the ES is relatively well open to the GPA but, only if the counterpart provides a reciprocal offer. Therefore, considering that the examined countries in this research cannot offer that reciprocal condition, we can consider the offer from the EU is marginal in this context.

Japan

In Japan, the market is dominated by the private sector. In fact, 10 privately owned organizations dominate 85% of the generation capacity of the country and also control transmission and distribution infrastructures. Other significant actors such as Japan Atomic Power Company are also privately owned (U.S. Energy Information Administration, 2011a).

Construction services are excluded from the ES for all remaining open entities in the list that are mainly regulation and security entities such as the Ministry of Economy, Trade and Industry and the Japan Nuclear Energy Safety Organization. This means that purchasing of goods and services are open for those entities, with some limitations. Also, the services category contains limitations that have an important impact on potential procurement in the ES, such as the exclusion of important engineering services. Like other countries, we consider the purchasing in the ES of these entities relatively marginal

in the context of this research. Furthermore, when we consulted the official database of notices for purchasing (JETRO) of Japan, we could not find procurement in the area of ES in the context of the GPA. Therefore, our search of the database provided no results.

Finally, Japan has also limited the openness to Canada to the Japan Nuclear Energy Safety Organization exclusively in the context of services purchasing.

Considering that the ES is to a large extent privately owned and that opened entities have very marginal procurement in the ES, we can conclude that the ES is marginally subject to the GPA in the case of Japan.

Korea

In Korea, the SOE Korea Electric Power Corporation (KEPCO) controls 82% of the generation assets, as well as the transmission and distribution assets. Other electric energy producers are privately owned (U.S. Energy Information Administration, 2011b). As we illustrated in the comparative analysis from the previous section, KEPCO is a SOE open in the Korea offer through a large range of services and construction services related to ES, but with some important limitations regarding goods in the ES.

Furthermore, Korea does not open its ES to countries that cannot offer reciprocity and specifically excludes Canadian suppliers. After searching the official databases of notices for purchasing (G2B, PPS and KEPCO), we were able to find some purchasing in the ES sector covered by the GPA, but the number of contracts was very marginal.

Considering these findings, it is reasonable to consider that Korea's ES is only marginally opened to the GPA.

United States

For the United States, three entities from the central federal government are listed and identified for some specific purchasing of goods and construction services:

- Department of Energy;
- Nuclear Regulatory Commission;
- Office of the Nuclear Waste Negotiator.

Furthermore, for the same purchasing categories, the United States opened the following SOEs:

- Power Marketing Administration of the Department of Energy;
- Western Area Power Administration;
- Southeastern Power Administration;
- Southwestern Power Administration.
- US Department of Energy, Office of Energy Efficiency and Renewable Energy, Energy Efficiency and Conservation Block Grants;
- US Department of Energy, Office of Energy Efficiency and Renewable Energy, State Energy Program.
- Tennessee Valley Authority;
- Bonneville Power Administration;
- The New York Power Authority.

After searching the official database of notices for purchasing of United States (FBO) for those organizations, our results were not conclusive. Finally, the United States restricts access to the SOE markets, specifically to Japan and Canada. Therefore, it is reasonable to believe that these organizations are marginally open to the GPA.

In sub-central entities (departments and agencies), the following states open goods (in three limited type of goods related to ES) and construction services: Arizona, Arkansas, California, Colorado, Florida, Louisiana, Minnesota, New York, Rhode Island, Utah and Vermont. The state of Montana provides an access only to construction services, while Kansas, Oklahoma and Tennessee limit their purchasing to the goods sector (also in three limited types of goods related to ES). Therefore, 14 states are represented; the others remain absent from the GPA.

In the sub-central entities within the ES, the state governments own utilities, which means that public utilities under sub-central entities are SOEs and are considered neither as a department nor as an agency, and therefore, the GPA, in the case of the United States, does not cover these entities. Furthermore, the privatization of the public utility sector is very important in the USA, which means that a large proportion of the public utilities in the ES is privately owned. In Arizona, for example, five major public utilities control 91% of the total electricity sales in that state. Among them, four are privately owned and control 65 % of energy sales in the state, while the remaining SOE (Salt River Project) is not listed in the United States offer (U.S. Energy Information Administration, 2010b).

For all of these reasons, it is reasonable to consider that the United States' ES is marginally opened to the GPA.

DISCUSSION OF THE RESULTS

A comparative analysis of multiple case studies was chosen to address the question raised in this research. As Ragin argued however, most of the practical problems concern the comparability of relatively dissimilar societies (Ragin, 1987). Nevertheless, the context of the GPA tends to standardize the comparability by asking all its members to provide an offer on the same basis. Indeed, even if our results provide evidence that most of the examined countries cannot offer the same openness that is requested of China, our approach exposes the difficulties engendered by the differences of market and economic structures between the different parties of the GPA. In fact, if China would decide to open its ES to the GPA, it would probably offer much more openness than the other GPA participants considering its actual market structure and the fact that most of its procurements in that sector are from SOEs.

Table 37
Summary of the Multiple Case Comparative Analyses

	Canada	European Union	Japan	Korea	United States	China
Canada	X	Closed	Closed	Closed	Closed	NA
European Union	Closed	X	Marginal	Marginal	Marginal	NA
Japan	Closed	Marginal	X	Marginal	Marginal	NA
Korea	Closed	Marginal	Marginal	X	Marginal	NA
United States	Closed	Marginal	Marginal	Marginal	X	NA
China	NA	NA	NA	NA	NA	X

The comparison of China with other countries also reveals a negotiation problem that we did not expect before performing this comparative analysis and shows a position of the actors that is congruent with our hypothesis as illustrated in Table 37. Indeed, the

comparisons among examined countries that are already members of the GPA tend to reinforce the fact that they look for equilibrium. Game theory modeling is helpful to understand this situation by providing a model that shows how the different parties could reach an agreement that is aligned with the fundamental reciprocity principle of the GPA and how they tend to reach a win-win situation by opening their own ES only to the countries that can offer reciprocal conditions.

As presented in the context and theory sections of this paper, members of the GPA have maintained the GPA through several negotiation phases because liberalization of GP fosters a more competitive environment, leading to a more effective use of public funds. It also contributes to the promotion of best practices with the aim of reducing the problem of corruption (WTO, 2009a; The Government Procurement Law of the People's Republic of China, 2002, p.2; Kho and Smith, 2009; Wang, 2007). Therefore, we consider that this type of international negotiation, which requires time, leads to an improvement of mutual offers as soon as every member identifies a situation where cooperation is possible (We were able to see that most of the examined GPA members are ready to enlarge their offer as soon as the others will provide the same openness). To better understand this assertion, we can address most of the strategic negotiation issues surrounding the GPA with classic questions from game theory (Powell, 2003, pp.878 to 881):

- Are moves of the players sequential or simultaneous? In the case of GPA, the moves are sequential for the new players, and others can accept or refuse the offer of a new entrant.
- To what extent are the players competing or cooperating? In the case of the GPA, players tend to cooperate on reciprocal conditions and to compete in the opposite situation. This can be seen in the example we provided in this paper, where competition emerges by maintaining GPBNP to attract FDI, which seems to be the case of China.
- Is the game a one-off or will players meet again? Game theory suggests that in a context like the GPA, where players will meet again, they will try to gain trust and preserve their reputation when negotiating. We are in the presence of the "Prisoners' Dilemma" of iterative games, which tends towards a better equilibrium over time.
- Do players have the same information? Even if the GPA members share information about their own position with regard to the ES, we observed in this research that obtaining the specific proportion of privately owned and state-owned

public utilities as well as the real value of their potential procurement in the context of the GPA is a very prohibitive task.

- Can the rules of the game be changed? In the case of the GPA, the answer to that question is yes: through negotiations of the rules that are defined by the GPA members. However, does a new member have the same opportunity to negotiate those rules at the moment of its accession? Part of the answer to this question lies in the answer to the following question.
- Are cooperative agreements binding? Within this question is the issue of the balance of power in the negotiation. If one player is more powerful than another one, the result can be an imbalanced negotiation leading to a non-cooperative agreement.

In the context of negotiation of the GPA, it is reasonable to believe that China could have a reciprocal power of negotiation that could probably influence the GPA to reach a new equilibrium, while respecting the preoccupations of its new arrival. As Powell explains: "An equilibrium solution is a set of tactical choices by the participants such that no party is motivated to move away through their own action alone" (Powell, 2003, p.885). The current reality of China as a rational actor in the negotiation provides China with opportunities by staying outside of the GPA since the usage of GPBNP attracts FDI in the ES while waiting to achieve a better reciprocal condition. Our comparative analyses reveal the fact that the examined countries could not provide reciprocal conditions to their demands of China to open its ES at the time this research was performed. Thus, it is reasonable to believe that the logic of delaying negotiations as developed by Gilpin is an effective solution for China in the short-term (Gilpin 2001). In this logic, this strategy helps China to gain bargaining power, while giving the country the time to adapt its laws and institutions and manage political and diplomatic issues with potential partners. It may also provide the timeframe to reach a better equilibrium through multiple rounds of negotiations. Finally, China could also decide in a further round to adopt the same position as the other members of the GPA by opening limited entities and sectors and giving access to this limited purchasing only to the members that can offer reciprocal conditions.

CONCLUSIONS AND CONTRIBUTIONS

The analysis model suggested in this research demonstrates that it is reasonable to believe that the current imbalance between the GPA members' offer and their demands of China explains why China is keeping the ES outside its offer to the GPA members. In fact, why would China respond positively to the demands of the GPA members if this leads to a lose-win situation for China?

We also demonstrated that game theory modeling provides an opportunity to identify an equilibrium that could lead parties to identify a win-win situation. We can generalize this model as shown in Table 4 below.

Table 4
Negotiation between parties in the context of GP agreements
A model of analysis based on game theory

		Party A	
		Win	Lose
Party B	Win	Close to neutral commercial balance and better quality/price ratio of GP	Negative commercial balance for China and better quality/price ratio of GP
	Lose	Positive commercial balance for China and better quality/price ratio of GP	No commercial exchanges and no one can access a better quality/price ratio of GP

The results of this multiple case comparative analysis help to better understand the determining factors that need to be considered in GP openness to international trade negotiations. Indeed, using this model isolating a sector of activity, we can perform a comparative analysis of the mutual offers in a particular sector of activity as well as the market structure of this sector of activity for every party, with the aim of identifying a scenario that will yield a better equilibrium of their potential market exchanges. Therefore this model could result in

a situation close to a neutral commercial balance and providing access to a better quality/price ratio of GP by accessing a better competition for all parties to the agreement. Therefore, this methodology could help negotiators to better define reciprocal conditions in the sector of ES for the GPA, as demonstrated in this comparative analysis, but it could also be useful for other sectors of activity as well as other GP agreements among countries.

Assuming that GP is a dynamic environment (Thai, 2001), we can also consider that international negotiations between countries have an impact on their respective GP international policies and trade as well as an impact on their own GP regulations, which could be considered by GP practitioners and policymakers. Indeed, the promotion of best practices during negotiations brings new realities. It could ultimately lead to newer practices in the daily work of purchasers, even if adopting best practices is not necessarily dependent on joining an agreement on GP with other countries. As a result, this research and analysis model is of interest to GP practitioners and policymakers as well.

LIMITATIONS AND FURTHER RESEARCH

The first limitation in our approach is a potential problem regarding the nominal value of the procurement. An example of that would be if the total value of GP in the ES corresponds to 50 billion USD on a yearly basis for a country, while another country is 100 billion USD. Even if the openness through the GPA and the market structure are equivalent from the standpoint of entity and sector coverage, there is still a potential imbalance in the agreement that comes from the nominal value of GP made by every party. However, we cannot simply compare the value in the context of such negotiations but we need to consider the potential procurement in comparison to the GDP volume of each country, a method of comparison used by the OECD to compare the total value of GP of the examined countries (Audet et al. 2002). At this moment, we cannot compare these volumes of GP in the ES to the GDP, simply because the data on GP is not available by sector of activity. Research representing the monetary value of the ES (or any other sector of activity by using the approach suggested in this paper) potentially open to the GPA could lead to a better understanding of the real reciprocity level among the GPA members and could foster the creation of minimum requirements for new entrants or the adaptation of the openness of current members to the reality of new entrants.

Secondly, even if all factors among the parties of a GP agreement are well balanced, there is no guarantee that this equilibrium will last forever. The parties could for example take advantage of the agreement by changing their market structure following the signature of their agreement or by finding ways to create new entities that are not covered by the agreement. Game theory modeling could be an effective tool to understand such scenarios and develop possible solutions. Even if theoretically we can argue that iteration games tend to a better equilibrium in the long run, this situation could be explored by comparing the amount of purchasing that was potentially open to the GPA and what the GPA members really offer through their notices of purchasing and their contracts made with private companies through the GPA. Mardas et al. (2008) demonstrated this situation in their work and provide a model to perform such analysis. Nevertheless, this type of analysis relies on the availability of information, especially at the moment of the negotiation, which represents another limitation we explain more below.

In the context of the GPA, it is also possible to observe that, most of the time, government procurement-related information is difficult to find. The information is found in multiple databases that are structured differently using different nomenclatures of goods, services and construction services classifications, or not providing the same historical periods for their archives. (This was the case in the results compared in this research from MERX, TED, JETRO, G2B, PPS, KEPCO and FBO official databases of the examined countries). The information collected in the context of this comparative analysis was still helpful to reach some conclusions. However, in order to identify a greater relative openness in the context of negotiations, increased access to consistent information would help to better identify the potential equilibrium of such agreements on GP. One solution to this problem could be the centralization of information in a common database that is shared by the GPA members. This database could also benefit suppliers that are allowed to submit proposals under the GPA by providing them with an equivalent source of information. This would lead to more competition, improvement of access to a better quality/price ratio in GP and a more effective use of public funds.

Last but not least, even if all the parties respect the agreement in the future, real reciprocity depends on who wins the contracts and which suppliers are the most competitive. Such a new equilibrium is created through market forces, which is the objective of market liberalization. Therefore, analyzing the real market exchanges after such agreements are ratified also calls for more research, as well as the

question of the competitiveness of private companies in a specific sector of activity potentially open to a GP agreement.

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Appendix 1

Documents and Databases Consulted in the Multiple Case Comparative Analysis		
Countries	Documents and databases	Publication date Y/M/D
China	Second offer to GPA	10-07-09
Canada	GPA- Apendix 1- Annex 1	03-12-09
	GPA- Apendix 1- Annex 2	10-03-19
	GPA- Apendix 1- Annex 3	00-03-01
	GPA- Apendix 1- Annex 4	10-03-19
	GPA- Apendix 1- Annex 5	10-03-19
	GPA- Apendix 1- General Notes	10-03-19
	Merx database. Available at: http://www.merx.com	Retrieved 12-03-27
European Union	GPA- Apendix 1- Annex 1	07-01-07
	GPA- Apendix 1- Annex 2	01-03-01
	GPA- Apendix 1- Annex 3	01-03-01
	GPA- Apendix 1- Annex 4	01-03-01
	GPA- Apendix 1- Annex 5	01-03-01
	GPA- Apendix 1- General Notes	07-01-07
	TED database. Available at: http://ted.europa.eu/TED/main/HomePage.do	Retrieved 12-03-27
Japan	GPA- Apendix 1- Annex 1	10-03-02
	GPA- Apendix 1- Annex 2	00-03-01
	GPA- Apendix 1- Annex 3	10-04-19
	GPA- Apendix 1- Annex 4	00-03-01
	GPA- Apendix 1- Annex 5	03-10-14
	GPA- Apendix 1- General Notes	03-10-14
	JETRO database. Available at: http://www.jetro.go.jp/en/database/procurement/	Retrieved 12-03-27
Korea	GPA- Apendix 1- Annex 1	10-10-13
	GPA- Apendix 1- Annex 2	10-10-13
	GPA- Apendix 1- Annex 3	10-10-13
	GPA- Apendix 1- Annex 4	09-07-20
	GPA- Apendix 1- Annex 5	00-03-01
	GPA- Apendix 1- General Notes	00-03-01
	G2B database. Available at: http://www.g2b.go.kr PPS database. Available at: http://www.pps.go.kr/english/ KEPCO database. Available at: http://www.kepco.co.kr/eng/	Retrieved 12-03-27
United States	GPA- Apendix 1- Annex 1	04-10-01
	GPA- Apendix 1- Annex 2	02-10-16
	GPA- Apendix 1- Annex 3	10-03-19
	GPA- Apendix 1- Annex 4	00-03-01
	GPA- Apendix 1- Annex 5	00-03-01
	GPA- Apendix 1- General Notes	10-03-19
	FBO database. Available at: https://www.fbo.gov	Retrieved 12-03-27

NOTES

¹For the purpose of this article, the government procurement definition by the OECD is used. It “refers to goods and services bought by the government for consumption and investment but not for resale. It generally covers two main types of expenditure: consumption expenditure and expenditure on capital formation, i.e. investment expenditure. These two types of expenditure are usually classified by government function” (Audet & al. 2002, p.46). Military and defense spending were also excluded because they are not included in the Government Procurement Law of the People's Republic of China. Articles 86 of this law stipulate that: “Regulations on military procurement shall be formulated separately by the Central Military Commission” and represents a minimal procurement from GPA members in the context of the ES.

²Therefore, we focus on generation, transmission and distribution in the electric energy sector (or public utilities) for this research when we discuss the energy sector (ES).

³ It is important to underline that this work has been done before the submission of China's second offer for its accession to the GPA.

⁴To reinforce this idea, it is important to note that from 2002 to 2009, GP volume potentially open to international trade under GPA has followed a yearly growth rate of 27.25% in China, and it is reasonable to believe that this trend will continue. Nevertheless, the volume of GP potentially open to international trade represented only 2.58 % of China's GDP in 2009. This represents an improvement when compared to the 1.89 % rate of 2002, but it is still far from the average 7.5% rate of OECD members (Coudé, 2010).

⁵ This scenario is probably the closest one that led to the rejection of the second offer of China.

⁶ See Appendix 1 of this paper for the complete list of annexes consulted and the publication dates of the annexes we used for this research.

⁷Services of the Japan Nuclear Energy Safety Organization are open to Canada but we consider this offer negligible in the context of this research. That explains why we chose to present a closed market between those two countries.

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