

CHARLES UNIVERSITY IN PRAGUE

FACULTY OF SOCIAL SCIENCES

Master Thesis

2017

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CHARLES UNIVERSITY IN PRAGUE

FACULTY OF SOCIAL SCIENCES

Institute of Political Studies

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**Assessing the Role of Public-Private Partnerships
in Critical Energy Infrastructure**

Master thesis

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Bibliographic Note

MCGRATH, Kevin. *Assessing the Role of Public-Private Partnerships in Critical Energy Infrastructure*. 109 p. Master thesis. Charles University, Faculty of Social Sciences, Institute of Political Studies. Supervisor prof. PhDr. Vít Střítecký, M.Phil., Ph.D.

Abstract

This thesis looks to assess the role of public-private partnerships (PPPs) in building critical energy infrastructure, and its implications for energy and national security. The clear majority of academic literature in energy security focuses exclusively on energy supply, and demand, but there is little written on the security issues facing countries when financing critical energy infrastructure projects. Through assessing the (1) recent history of privatization, (2) the development of the domestic PPP model, and (3) current relationships with PPPs in Canada, the United States, the United Kingdom, and France this thesis will look to identify the underlying domestic cultural normative debate which is driving policy making decisions. By understanding the general historical trends of privatization, and economic ideologies in governments over the past 40+ years, we can see the current and future trends in building critical energy infrastructure. By understanding the constantly evolving factors, and interdependencies at play, this thesis highlights the role of public-private partnerships in critical energy infrastructure, and energy security in general.

Keywords

Critical infrastructure, public-private partnership, energy security, economic security, national security, privatization, critical infrastructure protection, value-for-money (VfM), efficiency.

Range of thesis: 109 norm pages

Declaration of Authorship

1. The author hereby declares that he compiled this thesis independently, using only the listed resources and literature.
2. The author hereby declares that all the sources and literature used have been properly cited.
3. The author hereby declares that the thesis has not been used to obtain a different or the same degree.

Prague ... **May 19, 2017**

Kevin McGrath

Acknowledgments

I would like to thank my advisor, Víték Střítecký for his constant support throughout the writing process. Our meetings together were critical for the direction, and the shaping of this thesis into what it is today. He was my first contact with the Security Studies program at Charles University, and his support over these two years has been invaluable. I would also like to thank my parents, Judy and Joel McGrath, who have supported me my entire life. They are a constant source of inspiration, and every day I feel incredibly blessed to have such amazing people in my life. Finally, I would like to thank Michael Gallotta, who even on the other side of the world proves every day that he is the greatest friend one could ever ask for.

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1. INTRODUCTION

This thesis will look to understand the role that private investment plays in energy security through the lens of critical energy infrastructure (CEI). CEI is a key element for all nations around the world, and plays a central role in domestic and international energy security. Currently, the clear majority of the academic literature in the realm of energy security focuses on the supply, and diversity of a country's source of energy. Yet, understanding how countries approach building, and securing critical energy infrastructure offers an additional insight into the broader context of a country's energy security and national security apparatus.

Ostensibly, each country approaches this topic differently; one nation may attempt to build and maintain critical energy infrastructure through public funding, while other countries may look to private investment as a way to create competition in the hopes of a more efficient, and innovative approach to building these infrastructure projects.

Another way in which a government may look to build and maintain critical energy infrastructure is through public-private partnerships (often referred to as PPPs or P3s). PPPs can broadly be defined as, “a long-term contract between a private party and a government entity for providing a public asset or service in which the private party bears significant risk and management responsibility and remuneration is linked to performance”¹. Some of the main arguments in favor of these public-private partnerships are the sharing of financial risk, the expertise of the private corporations can provide, and the much lower up-front cost on the part of the public entity. In regards to energy security, countries must decide on what funding process they will rely upon to build and maintain - to varying extents – a piece of energy infrastructure such as a LNG terminal, hydroelectric dam, or other pieces of critical energy infrastructure. Each country, and – in some cases – each region within the country may approach these issues differently. This thesis will look to see how and these governments utilize PPPs, and what sort of insight this method provides into the greater energy and national security of these countries.

Another key component of the analysis in this thesis revolves around the way in which the countries within the case study: Canada, United States, United Kingdom, France have dealt with privatization within their political economy. This thesis will utilize three main categories to assess the case studies: (1) recent history of privatization; (2) the development of the domestic PPP

¹ “What Are Public Private Partnerships? | Public Private Partnership.”

model; and (3) current relationships with PPPs. Throughout each of these categories, this thesis will look at the changing underlying domestic cultural normative relationship with private finance implicit in each of these case studies from a constructivist-based perspective.

I will focus on how this debate has morphed through times of economic struggle, and its effect on economic ideologies within the political elite. This analysis will encompass the conceptual debate that is continuously reoccurring within these nations over the role of private efforts in critical sectors, which in many ways mirrors the debate that is occurring around private military contractors (PMCs)². The debate around PMCs is similar to the debate around private investment in the energy sector because both are contentious areas for private efforts to operate in regards to national security. As such, much like PMCs, private corporations, which operate in the energy sector must deal with many of the same issues that PMCs have to deal with on an operational level. Yet, as this thesis will show, that debate on the role of private investment in critical energy infrastructure is constantly evolving. Through the three main categories, this thesis will attempt to understand where this debate on private investment in critical energy infrastructure is headed within the four case studies, and how the cultural normative debate on this topic will drive decision making processes in the future. Understanding the role of private investment in critical energy infrastructure, and critical infrastructure protection is imperative to understanding the broader energy-national security nexus.

This thesis will focus on understanding why countries involve private investment, and more specifically public-private investments (PPPs) in building and maintaining critical energy infrastructure, and through the series of determinants establish an understanding how countries will approach future infrastructure needs. I will look at the current debate around privatization in the energy sector, followed by assessing the three main categories within each of the case studies. This thesis will rely upon the plethora of academic research on recent trends in privatization, along with official models, legislation, and ‘white papers’ on these countries approach towards PPPs. I will also assess recent PPP energy projects, and areas of possible future projects. In addition, I will assess the development of, and current cultural normative debates on privatization domestically. Finally, I will assess in each case study, the ways in which these categories influence the current

² O’Brien, “PMCs, Myths and Mercenaries.”

cultural normative debate, and how that influences the decision-making processes in awarding and building critical energy infrastructure projects.

The flow of this thesis will outline the case study, followed by a brief outline of the conceptual framework, a more in-depth definition of public-private partnerships, a definition of critical energy infrastructure, and finally, a synthesized definition of energy security. Then, I will outline the current debate around privatization, and the general framework of the cultural normative debate thereof. The thesis will then break down each case study through the three main categories to help understand the current, and future decision making processes each country goes through in awarding these critical energy infrastructure projects. Then, I will provide an analytical summary of the findings of the case study's, followed by a general conclusion.

Overall I will look to understand the role of the private sector in these countries, and understand the level of which each country is welcome to private involvement in the critical energy infrastructure. Ostensibly these countries are relatively close to one another ideologically, with the main difference being France. This analysis is necessary, and critical to security studies because of its implicit tie to national security. Much like the debate around PMCs in military engagements, there are those who believe that there should be no involvement from the private sector in critical energy infrastructure. Understanding that dichotomy between the two provides a valid tie between this analysis and the academic field of security studies. Furthermore, understanding the role of public-private partnerships in building and maintaining critical energy infrastructure offers a unique look into how countries approach private investment in critical energy infrastructure, critical infrastructure protection, and the energy-national security nexus.

This thesis will show that PPPs can play a positive role in the relations between public and private investment, while – in the right scenarios – can be beneficial to energy security, much like PMCs can be to military missions and, “should not be a priori dismissed on ideological or moral grounds”³. Understanding the core values that each of these country's societies have as a base for their culture dictate their decision-making process in regards to energy and national security. Through looking at the larger picture, this thesis will attempt to understand these interdependencies.

³ Bures, “Private Military Companies: A Second Best Peacekeeping Option?,” 543.

1.2 THE CASE STUDY

The countries in this case study include Canada, the United States, the United Kingdom, and France. Each of these governments approach private investment, and PPP opportunities in energy infrastructure differently. This is due to their varying experiences in developing their national political economy, and prevalent political, economic, and cultural ideologies, which results in their current outlook towards PPPs in building critical energy infrastructure.

A country such as Canada is receptive to private investment, and is a well-established role model for successful PPP projects⁴. The United States is well known for their struggling and weak infrastructure across all sectors⁵, and in dire need of massive infrastructure investment. The United Kingdom has struggled with private investment and PPPs in the past, but has reshaped their policies and ‘white papers’ in a move to build more effective contracts⁶. France has a history of taking part in original PPPs back in the 1960s⁷, but on the other hand France has a somewhat more public finance focused approach towards their energy infrastructure, which stands in contrast to the other countries in this thesis.

Overall, while each of these countries are relatively close culturally compared to the rest of the world, each of these countries take separate approaches to energy infrastructure in regards to their own energy security model, and socio-economic perspective. Understanding these differences can provide a better roadmap for future decision making, along with an understanding on the part of private interests on how best to approach these countries regarding critical energy infrastructure.

1.3 HISTORICAL BACKGROUND

To garner a better understanding of how each of these country’s political economy has developed, and will continue to develop in the future it would be ideal to look at the larger historical trends of the past 200-plus years. Unfortunately, it would be difficult to cover such vast trends in such a short thesis, and as such this thesis will look at the more recent trends of the past

⁴ Service Works Global in Consultation and Hellowell, “Public-Private Partnerships: What the World Can Learn From Canada,” 3.

⁵ “2013 Report Card for America’s Infrastructure.”

⁶ National Audit Office (United Kingdom), “Managing Complex Capital Investment Programmes Utilising Private Finance.”

⁷ Braun, “Public-Private Partnerships.”

40 years. While this may not provide a complete understanding of these country's political economy, recent trends in privatization does provide a snapshot of the cultural normative debate driving decision-making processes.

As such, this thesis relies on the academic works of those who adhere to the notion that during the 1980s when a large amount of privatization took place within the countries in this case study, that, "the explanation of the drive for privatization is more complex and more political than pure 'market versus planning' considerations might suggest"⁸. Ostensibly, this thesis subscribes to the notion that the decision on the part of the countries in this case study to privatize large parts of their economies from the late 70s to early 90s resulted from a political motivation as much, or even more so, than an economic one⁹. Understanding the rise of these ideologies such as neoliberalism, "shock therapy"¹⁰ in prevalent political roles within the bureaucracies of these case study is as important, if not more so, than the actual privatization of the assets themselves.

By understanding how these ideologies rose to prominence in countries such as the UK and the US, one can begin to identify trends within the decision-making process of these countries' economies over the past 40+ years. Understanding why there is a massive discrepancy between the amount of privatization occurred in the UK during the 80s, compared to the level of privatization that occurred in France during the 80s and early 90s are critical to understanding the current position each of these countries stand in regards to their energy security, and how they will approach future critical energy infrastructure projects. With the UK privatizing nearly 12% of their GDP between 1979 and 1991¹¹, while France only privatized 1.5% of their GDP over roughly the same time-period¹², one can begin to understand the scope of which private enterprises play in the day-to-day life of the average citizen. The prevalence of the ideology driving privatization within these countries were vastly different, which then resulted in the current discrepancy between these two countries approach to energy security. Today, essentially all of UK energy is privatized¹³, while France still operates the largest energy companies domestically¹⁴. What this shows is the

⁸ Pitelis and Clarke, "The Political Economy of Privitization," 4.

⁹ Ibid.

¹⁰ King, "Shock Privatization: The Effects of Rapid Large-Scale Privatization on Enterprise Restructuring."

¹¹ Pitelis and Clarke, "The Political Economy of Privitization," 5.

¹² Ibid., 4.

¹³ "The Energy Market Explained | Energy UK."

¹⁴ Berne and Pogorel, "Privitisation Experience in France," 36.

difference in experience each of these countries have in regards to privatization, and the greater cultural normative debate thereof. Understanding the prevalence of these economic ideologies in prominent political decision making roles over the past 40-plus years show how countries have ended up in their current positions, and can help forecast how decisions will be made in the future in regards to PPPs in building critical energy infrastructure. This notion of the prevalence of economic thought in political ideologies, matched with the conception that, “nationalization and privatization [occur in] cycles”¹⁵, which are vis-à-vis dictated by prices, highlight the interdependencies that are constantly in motion. While it is difficult to garner the complete image, and all the moving parts within each distinct political economy, the academic perspective of complex political-economic connections provide a clearer image of past and future trends.

1.4 DEFINING PUBLIC-PRIVATE PARTNERSHIPS

An interesting and unique way to understanding how receptive a country is to private investment in critical energy infrastructure is through their use of public-private partnerships. There is a plethora of academic material on the definition and models of PPPs, but in general, *The Oxford Handbook of Public Management* defines public-private partnerships as a way to, “combine the resources of government with those of private agents in order to deliver societal goals. The forms taken by public-private partnerships include contracting out of services, business management of public utilities, and the design of hybrid organizations for risk sharing and co-production between government and private agents”¹⁶. Ostensibly, PPPs play different roles in the countries within the case study presented in this thesis due to the inherent relationship in which each of these countries have with privatization in general. These political and economic developments within the case studies will be examined at a greater depth in their corresponding chapters, but in general all, “PPP’s arise from the make-or-buy decisions that governments face”¹⁷. Purportedly governments have turned to private investment, and PPPs to build and maintain energy infrastructure in the goal of greater efficiency and innovation. In general, a government will attempt to, “determine if applying a P3 model is the most effective means of delivering a project, governments conduct a range of qualitative and quantitative due diligence activities including a

¹⁵ Erdmann, “Nationalization and Privatization in the Energy Industry.”

¹⁶ Ferlie, Lynn, and Pollitt, *The Oxford Handbook of Public Management*, 347.

¹⁷ *Ibid.*, 348.

value-for-money assessment”¹⁸. This then leads to the decision-making process where the government will attempt to discern what the best course of action is; either by building the infrastructure through public means, private finance, or some form of PPPs.

In support of this process, Marian Moszoro from IESE and Haas School of Business at UC Berkeley in their paper titled *Efficient Public-Private Partnerships* states that, “the private sector is indeed able to build infrastructure cheaper than the public sector. The potential savings amount to 15-30% and can be attributed to more efficient project management by the private investor, shorter construction time, as well as lower administration expenses”¹⁹. While there is a large amount of criticism in regards to PPPs due to its inherent connection with private investment and privatization of government in general, PPPs have a strong standing in countries like France²⁰, US, UK²¹, and Canada²². In response to this criticism, it’s important to note that PPPs are not completely privatization. The World Bank states that, “PPP’s are often confused with privatization. There is a clear difference between these two forms of private sector engagement: privatization [means] permanent transfer [of the] asset”²³, while on the flipside PPPs are different because the public continues to hold ownership of the infrastructure asset. This results in a different dynamic in regards to the level of risk each side takes through the length of the PPP contract. While the private entity doesn’t completely own the project and all the risk, they can still procure money for the service they are providing. On the other hand, the government still owns the asset, but can offload some the construction and maintenance risk depending on the type of PPP utilized, and the content of the contract. Overall, this level of risk offset to the private entity, “is more limited, with implications for the incentives and nature of the partnership”²⁴. This level of individual risk, and risk sharing between the two sides comes down to the competency of the contract. Yet, with proper due-diligence, the acceptable amount of sharing of the risk can be achieved on both ends.

¹⁸ “Canadian Public Private Partnerships Report | Deloitte | Infrastructure & Capital Projects.”

¹⁹ Moszoro, “Efficient Public-Private Partnerships,” 3.

²⁰ Saussier and Tra Tran, “The Efficiency of Public-Private Partnerships in France: An Initial Quantitative Evaluation.”

²¹ National Audit Office (United Kingdom), “Managing Complex Capital Investment Programmes Utilising Private Finance.”

²² “Understanding Public Private Partnerships in Canada.”

²³ Farquharson, Torres de Mästle, and Yescombe, *How to Engage with the Private Sector in Public-Private Partnerships in Emerging Markets*, 9.

²⁴ *Ibid.*, 10.

There are a multitude of different types of PPPs depending on the project at hand, and the country that is attempting to build it, but in general *The Oxford Handbook of Public Management* outlines 5 main forms of PPPs, which include “public leverage; contracting-out and competitive tendering; Franchising; joint ventures and DBFO partnerships; and Strategic Partnering”²⁵. Each of these approaches to PPPs vary depending on the situation. “Public leverage”²⁶, is a rather self-explanatory example of PPPs, in which the government sets the roadmap for the PPP contract, and has the private interest group fulfill the parameters²⁷. The “Contracting out and competitive tendering”²⁸, which is where “firms bid for the right to run a service or gain a certain contract, [which] became more common in the 1980s [under] Mrs. Thatcher [and the UK government]”²⁹. Next, “Franchising involves government awarding a license to a business [...] to deliver a public service in which the provider’s income is in the form of user fees”³⁰, an example would be a situation where the government would outsource the building of a toll road. For energy infrastructure, an example of this would be any specific utilities where the private group procures a user fee. The fourth example outlined is “Joint ventures [which] occur where two or more parties wish to engage on a collaborative project [such as PPPs] in the European context and as Private Finance Initiative in the UK”³¹, which will be examined to a greater depth in the corresponding chapter on the UK approach. Finally, the fifth type of PPP outlines in *The Oxford Handbook of Public Management* is a “strategic partnering [which focuses on] the potential of mutual benefits of the partnership”³². In essence, each of these approaches can be successful depending on the project, and this thesis is much more concerned with the security side of the issue. In general, this thesis will show that obtaining efficiency through the life cycle of a PPP isn’t always perfect, and that PPPs are in no way an end-all-be-all approach to building critical energy infrastructure, but with an open-minded approach, and a reliance on value-for-money, PPPs can be a useful way to build critical energy infrastructure projects.

²⁵ Ferlie, Lynn, and Pollitt, *The Oxford Handbook of Public Management*, chap. 15.3.

²⁶ *Ibid.*, 351.

²⁷ *Ibid.*

²⁸ *Ibid.*

²⁹ Pettinger, “Competitive Tendering | Economics Help.”

³⁰ Ferlie, Lynn, and Pollitt, *The Oxford Handbook of Public Management*, 355.

³¹ *Ibid.*, 356.

³² Roumboutsos and Chiara, “Public Private Partnerships,” 75.

The question and answer then becomes, “even if a project can be delivered as a PPP, should it be?”³³. This question comes up in every discussion when assessing a PPP build method. Overall, this thesis subscribes to the notion of, “comparing private and public alternatives to implement a given project is a sensible approach”³⁴. In this capacity, the government can equally assess public and private options in hopes of promoting the best sense of competition between the multitude of interested parties.

Understanding the risks throughout the life-cycle of the project is the crucial determinant. There are a few ways in which a government can assess the proper path to deciding whether to build the project through a PPP. The World Bank states that the main approach is based on, Value for money (VfM)³⁵, which was outlined as an approach Canada always utilizes³⁶ in their assessment of possible PPP projects. The private sector also utilizes VfMs to identify the “tariff reform risk”³⁷, which can help identify the current climate in public infrastructure finance domestically; “Demand risk and capital investment [...] Rehabilitation risk [...] Environmental and other physical risks [...], interface risk [...], and funding and foreign currency risk”³⁸, are also a part of the risk assessment process. Each of these assessments are analyzed at greater depth in the World Bank document, yet each present a series of assessments that need to be done by both private and public interest groups. Understanding the long-term risks involved through the life-cycle of the PPP project is the first step to understanding the real cost of the project, possible risk barriers to innovation and efficiency, and greater implications for the security of the investment on both the parts of the public and private groups. While in general PPPs are more popular for sectors like transportation, hospitals and schools, critical energy infrastructure is an area in which PPPs can play a major role in the future if the deal passes the prerequisite risk-analysis.

1.5 DEFINING CRITICAL ENERGY INFRASTRUCTURE AND PROTECTION

³³ Farquharson, Torres de Mästle, and Yescombe, *How to Engage with the Private Sector in Public-Private Partnerships in Emerging Markets*, 41.

³⁴ Ibid.

³⁵ Ibid.

³⁶ “Canadian Public Private Partnerships Report | Deloitte | Infrastructure & Capital Projects.”

³⁷ Farquharson, Torres de Mästle, and Yescombe, *How to Engage with the Private Sector in Public-Private Partnerships in Emerging Markets*, 44.

³⁸ Ibid., 44–48.

Critical energy infrastructure stands as the major area of focus of this thesis, and the core underlying area of investment within these PPP models. As has been previously stated, the majority of energy security literature focuses on supply and demand concepts, yet critical energy infrastructure is a core aspect of energy and national security, and warrants close attention.

More broadly, each country approaches critical infrastructure differently. A country like the United States holds a vast definition of critical infrastructure, which includes anything from transportation and prisons, to energy, telecommunications, postal, monuments, and even large gathering sites³⁹. In essence, the US deems quite a few sectors as ‘critical’ infrastructure. Unsurprisingly this includes every system within the energy security apparatus, which is in line with Canadian, UK, and French assessment of critical infrastructure⁴⁰. Thusly, all current and future energy sector projects fall under the ‘critical infrastructure’ umbrella for each country in this case study. With this in mind, it is natural for one to then question the role of private industry in a sector so critical to national security.

While this question is expanded on to a greater extent in the corresponding chapters, this stands as a linchpin topic for many interested parties. This topic in the 1980s led to the questioning of the role of PPPs in regards to critical infrastructure protection (CPI). CPI is defined by the goal and series of actions in which a government attempts to prevent the, “[incapacitation] or destruction of such systems [which] would have a debilitating impact on security, the economy, national public health or safety, or any combination of the [aforementioned]”⁴¹. The loss of a critical infrastructure dependency would result in a national security risk, and as such individuals may look at private involvement in the development or maintenance of such sectors as antithetical to critical infrastructure protection.

Yet, this does not mean that private interest groups should be completely thrown out of the CIP field. In fact, it’s impossible for these countries to change over completely to public infrastructure unless a massive nationalization effort was to be taken place in each of these countries in the case study. In the US alone it is a well-referenced fact that, “the private sector owns and operates an estimated 85% of infrastructure and resources critical to [The US’s] physical

³⁹ Moteff and Parfomak, “Critical Infrastructure and Key Assets.”

⁴⁰ Gordon and Dion, “Protection of ‘Critical Infrastructure’ And the Role of Investment Policies Relating to National Security,” 5.

⁴¹ Dunn-Cavelty and Suter, “Public–Private Partnerships Are No Silver Bullet,” 179.

and economic security”⁴². The Department of Energy in the US states that in regards to security and CIP in particular, that, “no single government agency, industry group, or company can secure the entire energy infrastructure. Collaboration at all levels is essential to securing an interdependent infrastructure that is owned, operated, and regulated by many entities”⁴³. The US position on PPPs and private investments in the energy sector’s critical infrastructure will be detailed at a greater extent in the corresponding chapter, yet this provides a general outlook shared by the US, Canada, and the UK⁴⁴; critical energy infrastructure protection cannot be limited purely to the government. That’s why PPPs are so crucial to developing a critical infrastructure protection plan.

This perspective on information sharing, and, “shared responsibility”⁴⁶ stems from the Bill Clinton administration⁴⁷, yet it is critical for all countries looking to work hand in hand with private interest groups. In *Preparing for Critical Infrastructure Breakdowns: The Limits of Crisis Management and the need for Resilience*, Arjen Boin and Allan McConnell talk about the need for greater transparency between the private sector and governmental entities in regards to critical infrastructure protection⁴⁸. They point out that government, despite situations where the infrastructure is completely owned and operated by private groups are generally blamed for CI failures and breakdowns⁴⁹, they argue that there is a need for “public and private actors [to] invest in an institutional venue for public-private collaboration that is driven neither by ‘top down’ government nor market forces”⁵⁰. This is not so much an endorsement of PPPs in their CIP role, but a natural and necessary reaction to the major role private groups have in critical infrastructure protection. This perspective matches with an important factor presented at a greater depth in Dunn-Cavelty and Suter’s article on the role of PPPs in CIP⁵¹. They also raise the importance of the role

⁴² “Critical Infrastructure and Key Resources | ISE.”

⁴³ “Energy: Critical Infrastructure and Key Resources Sector-Specific Plan as Input to the National Infrastructure Protection Plan (Redacted),” 18.

⁴⁴ “Action Plan for Critical Infrastructure (2014-2017).”

⁴⁵ Zaballos and Jeun, “Best Practices for Critical Information Infrastructure Protection (CIIP): Experiences from Latin America and the Caribbean and Selected Countries,” 41.

⁴⁶ Dunn-Cavelty and Suter, “Public–Private Partnerships Are No Silver Bullet,” 181.

⁴⁷ Ibid.

⁴⁸ Boin and McConnell, “Preparing for Critical Infrastructure Breakdowns,” 55.

⁴⁹ Ibid.

⁵⁰ Ibid.

⁵¹ Dunn-Cavelty and Suter, “Public–Private Partnerships Are No Silver Bullet.”

of private interests in critical infrastructure policy, and agree that a purely governmental or market driven perspective to CIP is not the proper way to approach the issue⁵². Instead, they subscribe to the “network approach of governance theory”⁵³. They point out that, “the government can no longer simply issue instructions and monitor their implementation, but must shape the framework conditions [of the PPP] in such a way that cooperation operates smoothly even without constant oversight”⁵⁴. Essentially, they are arguing that instead of rejecting private investment and governmental control of CIP, or neoliberal market delegation, there needs to be a balance between the two. Dunn-Cavelty and Suter argue, “that there should be a shift from direct monitoring of the owners and operators of CI towards the monitoring of self-regulating networks”⁵⁵. Although this may seem like a rather convoluted process, it can help streamline CIP, which will help make information sharing and threat mitigation easier and quicker for all parties involved. What is necessary is a set of norms to help get the ball rolling. This is a challenge for private investment and PPPs in critical infrastructure protection; the natural disconnect between information sharing and efficiency are clearly at odds⁵⁶. This results in a situation where governments need to answer some difficult questions about how they can secure their domestic energy and national security in partnerships with transnational businesses. Having an understanding of the interests of the private entity, and promoting information sharing for energy security in the beginning of the negotiation process is critical in understanding the complete value for money equation.

This thesis argues that there is a positive role for private investment and PPPs in helping secure critical energy infrastructure. With this in mind, there is a real argument to be made that private investment and PPPs are not detrimental to infrastructure security, and thusly national security in general. The privatization of this industry has been well underway in the US, UK, and Canada. Yet these countries are finding ways to still secure their infrastructure in a successful manner. In their model, Dunn-Cavelty and Suter call for, “clear priorities and expectations [...] identify where action is needed [...] identify suitable instruments of meta-governance [...] [and an] assessment of the status quo [...] [this] meta-governance must therefore be regarded as a

⁵² Ibid.

⁵³ Ibid., 182.

⁵⁴ Ibid., 183.

⁵⁵ Ibid., 184.

⁵⁶ Ibid., 181.

continuous process”⁵⁷. In essence, Dunn-Cavelty and Suter call for the government to build a process that can continually assess the capacity of the PPP to assist in the CIP effort. Having this in place is a way in which governments both in this case study, and countries utilizing PPPs to build a more successful CIP plan.

1.6 DEFINING ENERGY SECURITY

This thesis will rely on the energy security concepts presented in Benjamin Sovacool and Ishani Mukherjee’s article titled *Conceptualizing and Measuring Energy Security: A Synthesized Approach*. This article’s broad conceptualization and depth within the main concepts of “availability, affordability, technology development, sustainability and regulation”, while this does not explain all concepts and perspectives within energy security, the focus on synthesis provides a stronger base within explaining how these countries approach private investment. Instead of promoting a specific theoretical energy security approach, Sovacool and Mukherjee “provides [...] [a] workable framework for analyzing national energy policies and performance”⁵⁸. Although this thesis is focusing more on energy infrastructure - and availability of the energy resource within its main concepts focuses more on supply, independence, balance, and other values⁵⁹ which is more to do with the actual resource itself - the concepts of “affordability, efficiency, sustainability, and regulation”⁶⁰ are all critical first steps to determining the energy security dilemma implicit in involving private interest in critical energy infrastructure.

More generally, the risk of these energy infrastructure decisions has an implication in the energy security of a country. While many energy security experts focus on the supply and demand of specific energy producing material, the way in which a country builds its energy infrastructure is vitally important to having a successful energy security apparatus.

While it may seem logical on one end to completely avoid private investment in the hopes of easily achieving an energy security balance on an infrastructure end, excluding private interest groups can be detrimental to the core of energy security. There is no doubt that some foreign direct investment (FDI) might go beyond energy security threats and go directly to being a national

⁵⁷ Ibid., 185.

⁵⁸ Sovacool and Mukherjee, “Conceptualizing and Measuring Energy Security.”

⁵⁹ Ibid., 5345.

⁶⁰ Sovacool and Mukherjee, “Conceptualizing and Measuring Energy Security.”

security threat⁶¹, yet for the clear majority of FDI there is a role for private interest to play in advancing energy security. Affordability, technological development, and efficiency are key components of Sovacool and Mukherjee's synthesized conceptualization of energy security⁶², and while public investment may circumvent some national security concerns, there is a valid case to be made that in specific situations where PPPs provide VfM, private investment can help build a stronger energy security balance.

It's important for countries to not sacrifice national security for increased energy security. It happens all the time with availability of resources, as can be seen in European countries that are over-reliant on the Russian Federation⁶³, or the Chinese on the Middle East region⁶⁴, yet infrastructure relies on a different set of parameters. It is clear through the conceptualization provided by Sovacool and Mukherjee that private investment can help in a multitude of more factors in comparison to the risk in which they may present to national security. This risk of private investment should be offset by the sharing of risk through the PPP contract, and with improved efficiency, there is a clear place for private investment in critical energy infrastructure. As long as the country in question is not dealing with controversial foreign investment, which may then fall into the national security realm, the security risk posed by a well-vetted, reputable corporation is minimal. In fact, it is clear that in some cases promoting competition between the private and public options can increase energy security through increased cost efficiency. While it is clear there are a multitude of contributing factors that may negatively influence the result of these PPP contracts – or private investment in general – there is still evidence to support⁶⁵ the call for increased competition for critical energy infrastructure projects.

⁶¹ Weiner, "Russian FDI in Central and Eastern European Countries," 8.

⁶² Sovacool and Mukherjee, "Conceptualizing and Measuring Energy Security."

⁶³ Kanter, "Europe Seeks Alternatives to Russian Gas Imports."

⁶⁴ Lefton and Weiss, "Oil Dependence Is a Dangerous Habit."

⁶⁵ Moszoro, "Efficient Public-Private Partnerships."

2. THE CULTURAL NORMATIVE DEBATE

Understanding how countries approach the argument for and against private investment and PPPs in developing critical energy infrastructure is implicit in helping with forecasting how a country will approach future projects. The domestic political, and social approach to this debate will determine the public response to seeing private investment or PPP projects started. If a country, or region is particularly hostile to the notion of involving private interest groups within their cultural normative debates, then this is clearly one of the first barriers to maximizing efficiency of the project.

While it is understandable for a country to have a strict approach to their energy security, finding the historical and cultural development with private investment projects is a good place to start on establishing the norms and practices in the negotiation period. Generally, the countries in this case study have well-established perspectives on this argument; thus, if these determinants are applied to other countries who lack these norms, it will be more difficult to establish the risk on the part of the private interest group. Despite this, these determinants can be a good place to start for interest groups looking for countries that may be receptive to private investment. On the flipside, it is critical for countries to have this debate internally themselves. Understanding the role private investment will play moving forward in regards to energy security is critical to building a more cohesive domestic message to possible investors. This debate on private investment in critical energy infrastructure in regards to energy security is where all future issues with possible investment will ride upon. To understand why countries approach this area of their energy security so differently, this section will assess the arguments around financing methods of critical energy infrastructure, and their greater implications for energy security.

2.1 FOR AND AGAINST PUBLIC-PRIVATE PARTNERSHIPS

One of the first barriers for governments attempting to build functioning PPPs is the general criticism of privatization itself, and although PPPs are not privatization⁶⁶, the role of private investment in critical infrastructure can be construed as such. Privatization of public assets, including resources and infrastructure surround the PPP debate, and can be a dividing issue for

⁶⁶ Farquharson, Torres de Mästle, and Yescombe, *How to Engage with the Private Sector in Public-Private Partnerships in Emerging Markets*, 9.

civil society. The whole notion of the PPP stands against the perspective that governments should never outsource public infrastructure projects, especially when that government employs civil engineers, and possibly have the capacity to do the project on their own. It can also be difficult for society to overcome perceived negativity towards large private corporations.

In general, one area of criticism revolves around the notion that, “PPP’s must be seen within the overall context of the public-private sector reform movement known as new public management (NPM), [and] a primary reason for their recent growth is that they do not require public sector funding today”⁶⁷. This is an area of contention for those who feel that this is simply budgetary gymnastics, and is a situation where a country or local government is sacrificing control of the asset simply to avoid inflating their budgets, like what occurred with Britain’s PFI⁶⁸. Instead it’s a situation where a governmental body is simply offsetting the cost of the piece of infrastructure to simply avoiding making their books look bad. This is done by the private group making the up-front investment on the piece of infrastructure, which then spreads the cost on the public side over the length of the contract. The private group which is building and maintaining the infrastructure can then procure a cost from the consumer as well, which leads to the next piece of criticism.

Another barrier to private investment and PPPs, are that people can look at PPPs as taking the process out of the public’s hand for the sole purpose of turning a corporate profit. This demonization effect is popular in certain circles, and - while not always true - is a major concern for governments looking to utilize a PPP model. Critics will highlight failed PPP projects, project overrun costs, and the fact that critical infrastructure is a core national security function⁷⁰. While this is a valid argument, and a government should never completely outsource core functions – such as the critical infrastructure protection apparatus -, the notions that outsourcing should be completely unexplored is antithetical to cost-efficiency. It can even be argued that failing to explore outsourcing options for cost-efficiency is a disservice to the public. People have a well-founded fear of corruption on the part of private corporations, and it well documented that certain privatization efforts have led to wasted money⁷¹.

⁶⁷ Turhani and Shqua, “Public-Private Partnerships - For and Against,” 894.

⁶⁸ “Crippling PFI Deals Leave Britain £222bn in Debt.”

⁶⁹ “Private Finance Initiative: Seventeenth Report of Session 2010-2012.”

⁷⁰ Hodge and Greve, “PPP’s: The Passage of Time Permits A Sober Reflection,” 38.

⁷¹ *Ibid.*, 36.

This is a real issue when in exploratory negotiations. There are a multitude of ways in which a PPP can go wrong; per PPP Certification, failure can refer to relative project failure, where “performance is below expectations and the contract is not capturing the loss of the value of the service”⁷², or complete contract failure, which would be a “situation in which the government has to rescue the contract or re-tender it”⁷³, in either situation there is risk of financial loss on the part of the government. There are also situations where these project failures result in major run-over costs which kills the whole concept of PPPs delivering infrastructure efficiently – its main productive value to furthering energy security. On the flip side, governments are no more innocent⁷⁴. Corruption in government is always present to a varying extent. Unsurprisingly, any privatization proponents will have a litany of government corruption scandals they can cite. On the flip side, so does pro-public finance hold the opposite.

One of the more outspoken opponents of PPPs and privatization in general is David Hall, of Public Service International Research Unit and University of Greenwich, who states in his report titled *Why Public-Private Partnerships Don't Work* that,

“PPP’s are an expensive and inefficient way of financing infrastructure and services [...] [and] regrettably, most politicians and senior civil servants never access this type of information. Local and national governments and the UN are heavily influenced by the powerful lobby of the biggest services and financial corporations, global consulting and law firms, all intent on reaping profits from basic public services such as health, water, energy.”⁷⁵

While this is a scathing opinion towards private-public partnerships, Hall raises an important point on the lobbying effort of major corporations to push for these investment opportunities. It is important for any interested party to understand this perspective as prevalent in every country to varying degrees. While this is rarely the only reason as to why countries may turn away from private investment and PPPs, the negative public opinion towards these concepts is a serious barrier to infrastructure projects. This, matched with a distaste towards nuclear energy in the UK such as what is seen with the Hinkley point project⁷⁶, or anti fossil fuel groups provide a

⁷² “8.1. What Is Project Failure? Types of Project Failures | The APMG Public-Private Partnerships Certification Program.”

⁷³ Ibid.

⁷⁴ “Examples of Public Corruption Investigations - Fiscal Year 2015.”

⁷⁵ Hall, “Why Public-Private Partnerships Don't Work: The Many Advantages of the Public Alternative,” 3–4.

⁷⁶ “Theresa May Just Gave the Go-Ahead to Hinkley. But Campaigners Are Concerned It's a White Elephant.”

barrier to specific types of critical energy infrastructure projects. Each of these points are barriers to private investment and PPPs. This thesis will show that while there is no doubt a strong effort on the part of private corporations to move into the field of infrastructure projects around the globe, their expertise, efficiency, and innovation implicit in the PPP model is a valuable asset to governments looking to build new projects, while also maintaining long-term control of the infrastructure asset. While there is no doubt that PPPs are not a, “silver-bullet”⁷⁷, they can bridge the gap between governments looking for alternatives to the public option, while also systematically limiting outsourcing risk through checks and balances built within long-term contracts.

Hall is quick to challenge this perspective, and he states that, “it demystifies the shadowy PPP processes, most of which hide behind confidential negotiations to protect commercial secrecy. There are no public consultations, lots of false promises, and incredibly complex contracts, all designed to protect corporate profits. There is also a fair amount of bribery, as privatization contracts can be extremely valuable.”⁷⁸. Hall here is arguing that in general PPPs are simply a vehicle for inevitable corporate corruption, which blocks out the average citizen. Yet, just as he says, private corporations consult with governments in ‘confidential negotiations’ to protect their business models from competing businesses looking to possibly out-bid their proposed PPP contract. What Hall fails to address in this situation is the competition drive forcing these corporations to work behind the veil of secrecy, resulting in the lack of public consultation. This does not mean that the bidding private corporation is in any way nefarious in their approach, but from the corporation’s perspective, they are simply protecting their strategy to maximizing their efficiency through innovation and other means.

The possibility of false promises and bribery on the part of the corporation needs to be weeded out through proper oversight on the part of the government. This can partially be achieved by picking a reputable and experienced corporation. Yet, it is important to note that if the government is falling privy to bribery and false promises in the budget, would it be any different if the government funding the project through public means? If a government is corrupted, or

⁷⁷ Dunn-Cavelty and Suter, “Public–Private Partnerships Are No Silver Bullet.”

⁷⁸ Hall, “Why Public-Private Partnerships Don’t Work: The Many Advantages of the Public Alternative,” 3.

acting in an irrational way economically, it will likely be corrupted regardless of listening to a PPP bid in the confines of a private negotiations.

Secondly, Hall brings up this notion of complex contracts as a risk for governments. Interest groups state that this is generally a natural occurrence when attempting to build a road-map on a 20-35-year project. The World Bank states that, “effectively designing and tendering a PPP transaction is only the beginning of the long-term process to manage a PPP contract [...] [and that] PPP contracts require long-term commitment”⁷⁹. The PPP contracts are supposed to be more complex than a normal public contract due to the specificities⁸⁰ laid out on the part of the government in an attempt to move as much risk as possible to the private corporation, and hold them accountable to fulfilling their promises. The contracts also must deal with the multitude of challenges and changing responsibilities that will most likely occur during the life-cycle of the project⁸¹. Although, while inflexibility of the contract is a valid concern, and has been an issue for the UK⁸², understanding that inflexibility is inherent in all major infrastructure projects, and building measures into the contract can help alleviate these issues over the life-cycle of the contract.

2.2 THE ROLE OF PUBLIC-PRIVATE PARTNERSHIPS

Overall it is critical to understand that PPPs are in no way safer or better than other ways to build infrastructure, but simply an alternative model which – with strong government enforcement, and within the right scenarios including a comprehensive VfM matched with a qualitative assessment – can help effectively build critical energy infrastructure in countries such as the US, which is suffering from severe infrastructural degradation. Currently the US an overall grade of a D+⁸³ from the American Society of Civil Engineers, and in 2013 estimated the need for 3.6 trillion in estimated investment⁸⁴ to continue to function at the necessary levels. Energy infrastructure in particular garnered a D+ grade from the ASCE⁸⁵. This specific report will be

⁷⁹ “Contract Management.”

⁸⁰ National Audit Office (United Kingdom), “Managing Complex Capital Investment Programmes Utilising Private Finance.”

⁸¹ “Contract Management.”

⁸² Hurst, “‘Inflexible’ PFI Works against Sustainability.”

⁸³ “2013 Report Card for America’s Infrastructure.”

⁸⁴ Ibid.

⁸⁵ “ASCE | 2013 Report Card for America’s Infrastructure | Energy.”

analyzed at greater length later in this thesis in the corresponding US case study chapter, yet it is clear that the US suffers from severe energy infrastructure degradation, and there is a possibility that PPPs can play a role in alleviating those issues.

Ostensibly, Hall states that PPPs do little to outsource the actual risk of the infrastructure projects, and that if the intended government is strong, there is no need to turn to a PPP, and if the government is weak, that government shouldn't look to a PPP at all. This frame of thinking is apparently shared by some international NGOs, who are "critical of the effect of PPPs in developing countries [...] [due to] PPPs [adding] to the long-term debt of developing countries, at the same time as undermining the public-sector provision of services"⁸⁶. This matched with the expense of the projects, a lack of transparency in the negotiating period, and possible expense overruns⁸⁷ can be obvious pitfalls for nations looking towards private investment in their country's infrastructure. Overall these are important areas of concerns which need to be aired throughout the negotiating period to avoid unexpected situations. Writing comprehensive and well thought out contracts through PPPs – such as the way in which Canada approaches their PPP contracts – is the model for avoiding many of these costly mistakes. Yet, Hall is correct in pointing out the pitfalls of a developing country looking towards private investment to build infrastructure. From an opposing perspective, a developing government finding the political will and commitment to see through a PPP related contract is a strong indicator of that governments capacity to develop in a positive way economically.

This notion of seeing a PPP through its life-cycle, and then regaining control of the infrastructure asset provides a sense of legitimacy to the developing country, and provides a clearer picture for economic risk assessment. While there is no doubt that building such infrastructure through public means can also provide this sense of legitimacy within the developing country, there may be situations where the private corporation can help facilitate the more complex projects through innovation and expertise to build a stronger infrastructure project. Either way in the long-run the country would retain ownership of the infrastructure. This notion of ownership is a much better scenario for a developing country which may not have the capacity to build the infrastructure

⁸⁶ Hall, "Why Public-Private Partnerships Don't Work: The Many Advantages of the Public Alternative," 27.

⁸⁷ Ibid.

of its own. The PPP can provide the technological expertise, and show a growing sense of economic stability in the developing country.

Overall PPPs are just one way in which to develop and build these critical infrastructure projects, but a developing country should not be afraid to turn to PPPs, especially if it's attempting to build legitimacy for future foreign investment within the country. The World Bank states that, "PPP[s] are [...] more than a one-off financial transaction with the private sector. Consequently, they need to be based on firm policy foundations, a long-term political commitment, and a sound and predictable legal and regulatory environment"⁸⁸. This puts governments in an interesting situation; they can turn to private entities and obtain the expertise necessary to build a new energy infrastructure project, while simultaneously highlight their growing economic stability.

This stands as a solid test that can start to change the definition of a country from an emerging market to a mainstay in the international community, all while retaining the long-term control of the infrastructure asset. This can stand as a multifaceted win for the country to indicate to the world their long-term growth, and development. At the same time, it is critical for governments to heed the warnings Hall presents. It is critical for governments to look towards, "the right policies, institutions, and processes, [or] the transactions that follow will often fail"⁸⁹. Utilizing the correct roadmaps, and preparing for the negotiation periods are critical for PPP contracts to be successful, yet if handled properly can stand as a major legitimization process for the government while also maintaining control of the asset over the long-term.

Another key component of Halls criticism of PPPs revolves around the promotion of PPPs themselves. Hall questions the international groups such as the World Bank, IFC, World Economic Forum, and G20 amongst others as proponents for PPP projects due to the fact that they all play a major role in promoting PPPs as ways to build infrastructure⁹⁰. He states that "this coordinated international promotion of PPPs is an extraordinary use of networks and resources, similar to the promotion of privatization in the 1990s, and with many of the same actors"⁹¹. This, he states, is all due to the major investments and lobbying on the part of private interest groups, and the need of

⁸⁸ Farquharson, Torres de Mästle, and Yescombe, *How to Engage with the Private Sector in Public-Private Partnerships in Emerging Markets*, 5.

⁸⁹ *Ibid.*, 6.

⁹⁰ Hall, "Why Public-Private Partnerships Don't Work: The Many Advantages of the Public Alternative."

⁹¹ *Ibid.*, 29.

governments to avoid too much public borrowing in the face of austerity. Because, “without this enormous propaganda and financing effort, most of it conducted by public sector institutions using public finance, it is certain that very few PPPs would be implemented. This international pressure creates damaging distortions”⁹². Overall Hall paints a bleak picture of massive collusion stemming from the very top of our international institutions, which threaten the very fabric of national and international security. This perspective can be framed as simply bias against a system that is hard to penetrate as a private citizen, yet it warrants a deeper look.

Despite this question of global collusion, the most important, and valid criticism of PPPs and private investment in critical energy infrastructure revolves around surrendering national security- not fear of outsourcing itself. No matter how a country or local government approach a new energy infrastructure project, the only barrier that needs true attention is its security in the short and long term. At the same time, this sort of assessment on the part of governments should take place before negotiation periods start. Understanding the source of funding, especially if that source of funding is originating from a foreign country is a key component of the qualitative analysis that needs to take place.

An example of this is the US, which has the capacity to review foreign investments in regards to national security through The Committee on Foreign Investment in the United States (CFIUS), which states that it is “an inter-agency committee authorized to review transactions that could result in control of a US business by a foreign person, in order to determine the effect of such transactions on the national security of the United States”⁹³. While there is no official body in the UK, a prime example would be Hinkley Point C, in which the UK government will look for the “introduction of a cross-cutting national security requirement for continuing government approval of the ownership and control of critical infrastructure”⁹⁴. While PPPs are not a complete privatization situation, the capacity in the part of governments to go through the assessment of these proposals will help overcome national security concerns, and should play a role in the qualitative assessment of the PPP bid. In general governments, especially the four case study

⁹² Ibid.

⁹³ “The Committee on Foreign Investment in the United States (CFIUS).”

⁹⁴ “Government Confirms Hinkley Point C Project Following New Agreement in Principle with EDF - GOV.UK.”

countries, are becoming much more proactive in the Economic and Financial Threat domain⁹⁵, which should help ease questions of national security while providing to be a model for other countries looking to secure their economic environment.

While it's understandable for individuals to raise questions of national security, those concerns should be lessened through a PPP compared to complete privatization due to contractual obligations and continued ownership on the part of the government. And while governments back-room discussions with private corporations on toll prices for the next highway in Southern California may also be a valid concern, this thesis is focusing specifically on energy infrastructure projects, and while transportation is critical to a functioning society, energy infrastructure projects provide a whole new set of security concerns. While both sides of the debate will contend that their method is best, "William Reinhardt, editor of the Public Works Financing newsletter [...] says it's hard to prove which method is best for a given project. 'All my life I've been looking for the perfect example to compare one to another.' Reinhardt says, 'and you can't'"⁹⁶. With this important notion in mind, the key to understanding whether a PPP is the correct path for a specific energy project comes down to the micro-specificities of the needs within the project. Looking for private corporate expertise to assist through a PPP is sometimes just as important, or even more as the source of initial private investment itself; unless economic factors are the main determinant – such as a failed VfM assessment. Competent government officials are critical whether the decision to move forward with an infrastructure project is built through public finance or private investment. While it's true that these government officials probably don't have experience negotiating these PPP deals⁹⁷, they are still aware of every detail of the project, and has the capacity to make the proper decisions. Ignorance is never an excuse in any public, or privately financed projects. Overall even through truly valid criticism, PPPs and private investment stand as, "a tool that can be valuable but needs to be used very carefully and with a complete understanding [...] [and at the end of the day] we went to the moon without a P3"⁹⁸. Understanding the limitations of outsourcing is an important place to start for any government looking to build a new energy infrastructure project without sacrificing critical energy and national security.

⁹⁵ Wehrle and Pohl, "OECD Working Papers on International Investment: Investment Policies Related to National Security: A Survey of Country Practices."

⁹⁶ Holeywell, "Public-Private Partnerships Are Popular, But Are They Practical?"

⁹⁷ Ibid.

⁹⁸ Ibid.

2.3 PPPs ROLE IN ENERGY SECURITY

Through understanding the energy security framework presented by Benjamin Sovacool and Ishani Mukherjee in *Conceptualizing and Measuring Energy Security*, one can begin to move past grandstanding and start to assess the role of PPPs, and outsourcing in general in energy security. Sovacool and Mukherjee state that, “energy security ought to encompass five dimensions resulted to availability, affordability, technology development, sustainability, and regulation”⁹⁹. If an outsourcing project, such as a PPP cannot serve to these five key dimensions, the proposal should be rejected immediately, not because public finance is the morally correct path, but because the project fails to adhere to core energy security determinants. This, matched with an understanding of the value for money balance is an overview of the steps a country must take in assessing the PPP validity. Between a solid mix of understanding national and local energy security – in this case basic situational awareness on the part of the government based on the core dimensions assessed by Sovacool and Mukherjee – and an open-mindedness to both private and public options, a clear, cost-effective decision can be made. While this may seem like a complex way in approaching building and maintaining energy infrastructure, it is critical for government employees to assess all the available options to achieve and plan optimal efficiency and cost value. While an individual may prefer long-term security of the infrastructure asset over short term costs, or vice-versa, the process of looking at all the options can reveal the proper path forward.

This is by no means an endorsement of rampant privatization, or PPPs in general, but needlessly limiting ones’ prevue is a disservice to the population in which the governmental entity is representing. It may be the case that within 100 energy projects a specific government may find that 99 of them are best built with public methods, but it may be the case that final project can best be completed with a PPP due to a variety of reasons. It is then critical through core energy and economic security concepts of cost-efficiency to utilize this private option.

What this criticism shows are the reasons as to why a country like France generally avoids using privatization, yet they have not had a great time planning for the future of energy as well¹⁰⁰. While it’s understandable for a country like France to take the position of controlling major energy corporations in in the energy field, the core of this thesis is not to argue that privatization of the

⁹⁹ Sovacool and Mukherjee, “Conceptualizing and Measuring Energy Security,” 5343.

¹⁰⁰ Irfan, ClimateWire, “France Loses Enthusiasm for Nuclear Power.”

energy sector or the use of PPP contracts is inherently a better choice, because as was previously stated, it's incredibly difficult to prove which is better. Ostensibly, this thesis argues that it should be taken on a case-by-case basis, and with understanding how these countries approach privatization one can garner an understanding, and capacity, to estimate how they will approach new energy sector infrastructure projects. Yet, understanding the dynamic with nuclear energy in France shows the pitfalls of reliance on public sector direction.

This debate is in constant motion in most countries today. There are valid arguments on both sides, and while it is the opinion of this thesis that private investment and PPPs can be a valuable tool in energy security, it is understandable why countries would want to protect their assets, and go the public route. This is critical for private interest groups in assessing future areas of investment. Depending on the governmental strategies, past energy infrastructure projects and acumen, political situations, and history, each society approaches these projects differently.

A country such as the UK may be particularly open to looking past the criticism presented in this section, while at the same time a country such as France may feel more comfortable to building and maintaining the infrastructure themselves. This would then make them much more adverse to private investments or PPPs when they feel more comfortable working through public means. Political economy theory, which highlights the determinants of outlook towards PPPs and private investment in general can be incredibly helpful in determining how a country may approach future critical energy infrastructure projects. These determinants can help assess future risk for investments.

One area in which this thesis subscribes to is the argument of utilizing VfM's to assess and maximize efficiency in procuring critical energy infrastructure. One of the major arguments presented by Hall refers to a lack of general efficiency with PPPs¹⁰¹. While this is generally countered by the set of facts presented by Moszoro in their article on *Efficient Public-Private Partnerships*¹⁰², there is a deeper set of questions that revolve around procuring that efficiency. John B. Goodman and Gary W. Loveman from Harvard Business Review in their article titled *Does Privatization Serve the Public Interest*, brings up the important point that, "the key question is under what conditions will managers be more likely to act in the public's interest [...] refocusing

¹⁰¹ Hall, "Why Public-Private Partnerships Don't Work: The Many Advantages of the Public Alternative."

¹⁰² Moszoro, "Efficient Public-Private Partnerships."

the discussion to analyze the impact of privatization on managerial control moved the debate away from ideological grounds”¹⁰³. They go on to state that the three main results of this frame of thinking is the distinct need for incentives, competition, and cooperation¹⁰⁴. This seems to be a consensus amongst most non-partisan perspectives. Promoting competition is an obviously critical aspect of the open competition approach to the marketplace, and presenting the most efficient, and safe infrastructure proposal won’t come through a public or private monopoly. Promoting efficiency and safety through marketplace incentives, and incentivizing within PPP contracts can help build an environment in which the optimal PPP contract can be procured. Finally, understanding the need for cooperation is implicit in fostering stronger energy security, and is critical to the success of any security apparatus. This calls for a situation where, if a government can find a balance between efficiency and meeting cooperation standards, PPPs can be an effective, efficient, and safe way to build critical energy infrastructure.

There are a multitude of proposals in which to help foster this security cooperation, it seems that the best way is presented in Dunn-Cavelty and Suter’s article on *Public-Private Partnerships are no silver bullet*, which calls for greater communication and cross-referencing between experts in the hopes of fostering, “network responses to network threats [similar to that of] [...] reducing vulnerabilities in the financial sector’s information systems [which] was largely left to the existing networks in this sector”¹⁰⁵. This approach relies on experts, and promotes and fosters a situation where it can become an established norm to provide a higher level of standards in regards to security cooperation. With approaching energy infrastructure security in this way, and understanding the underlying drivers to a successful PPP model, a country can achieve a successful balance within their energy - and national – security while taking advantages of the private sector’s capacity to be efficient and innovative to the greatest extent.

What the criticism of PPPs and private investment show is the real and present danger in which private corporations may present. Circumventing these issues in energy and security can be difficult for governments, yet with the proper approach outlined in this section, within the introduction, and through the best practices presented in the Canadian approach there are real

¹⁰³ Goodman and Loveman, “Does Privatization Serve the Public Interest?”

¹⁰⁴ Ibid.

¹⁰⁵ Dunn-Cavelty and Suter, “Public–Private Partnerships Are No Silver Bullet,” 183–84.

benefits to PPPs in improving energy security¹⁰⁶. In the following chapters this thesis will compare how countries approach the question of PPPs in building and maintaining critical energy infrastructure. The approach these countries have can be discerned through an understanding of the development of their political economy and relationship with private investment, through their current best-practices and white papers, and through assessing the current role of PPPs in energy infrastructure projects. These determinates assessed through the three main categories outlined in the introduction will present an overview of the development of this debate in the cultural normative perspective in these case studies.

¹⁰⁶ Moszoro, “Efficient Public-Private Partnerships.”

3. THE CANADIAN APPROACH

The Canadian approach to PPPs have been referred to as a model of current day public-private partnerships¹⁰⁷. This has been due to the fact that Canada has taken an approach somewhat similar to the one outlined by Dunn-Cavelty and Suter in regards to a “network approach”¹⁰⁸ to their PPP model. Canada has focused on, “a steady pipeline of well-structure economic and social infrastructure projects; standardized procurement processes; fostering [...] the sharing of lessons learned and new approaches; [and] a framework of mutual trust between the public and private sectors”¹⁰⁹. This lends credence to the series of standards that Dunn-Cavelty and Suter point out as critical to promoting norms and cooperation¹¹⁰. In general, Canada’s approach – while regionally focused – relies heavily on the national model, which provides a top-down streamlining of interdependencies which boosts efficiency from the government side of the partnerships. This then allows Canada to maximize efficiency across the partnership through all the layers of the partnership, such as accountability, collaboration in CIP, efficiency implicit in the success of energy infrastructure projects, etc. To gain a deeper understanding of how Canada settled on this model for PPP projects domestically, this section will assess the development of the Canadian cultural normative debate and its relationship with privatization, along with assessing current white-papers and best practices, and current projects. Through these determinants in the three main categories of: (1) recent history of privatization; (2) the development of the domestic PPP model; and (3) current relationships with PPPs, this section will assess where PPPs stand currently, and where they are headed in the future for Canada. Overall, it is the opinion of this thesis that Canada is the model of 21st century PPPs. Their consistency in governmental standards provide a clear distinction from the failures of other countries.

3.1 PRIVITIZATION IN CANADA

¹⁰⁷ Service Works Global in Consulation and Hellowell, “Public-Private Parnterships: What the World Can Learn From Canada.”

¹⁰⁸ Dunn-Cavelty and Suter, “Public–Private Partnerships Are No Silver Bullet,” 182.

¹⁰⁹ Service Works Global in Consulation and Hellowell, “Public-Private Parnterships: What the World Can Learn From Canada,” 3.

¹¹⁰ Dunn-Cavelty and Suter, “Public–Private Partnerships Are No Silver Bullet.”

Canada, much like the US, UK, and France benefited from an abundance of natural resources, and geographical positioning which included more temperate climates, access to waterways, and other such advantageous positioning. One such example is the role in which the spread of Canadian cities across the country played in regards to trade with major hubs in the US, and Europe throughout the 1800s and 1900s¹¹¹. This resulted in Canada becoming such a large economy, and allowed for the flourishing of business across all sectors. In general, Canada developed along the same timeline as the US, UK, and France in regards to the same periods of economic growth and economic stagnation¹¹². There is no question that from a geographical perspective Canada is one of the most beneficial countries.

Canada has a history of privatization which is generally in line with the economies of the other case-studies. Indeed, the decision on the part of the Canadian government to pursue privatization was inspired by the Thatcher era ideology of small government. Canada also struggled after the Iranian revolution in regards to oil, and much like France, took a stronger role in the industry building the National Energy Program (NEP) in 1980¹¹³. Yet, despite this governmental involvement, there would be a large change in policy over the coming decade. While the privatization effort in the UK started in the early 80s, the majority of the privatization effort in Canada took place between 1985-1995¹¹⁴. Some notable privatization examples during this time period include, Cameco, which was a uranium mining company, Alberta Government Telephones, Canadian National Railway, and Petro-Canada, which all sold for more than 1\$ billion USD¹¹⁵. Yet, “despite the overall success of Canadian privatizations, much of the Canadian economy remains in state hands”¹¹⁶, especially compared to the UK. One of the major privatization efforts in regards to energy occurred during this Thatcher era of governance, and in, “the 1984 federal election, then-Prime Minister Brian Mulroney’s Conservative government started to dismantle the [National Energy Program] NEP”¹¹⁷. While it is not in the prevue of this thesis to suggest that

¹¹¹ Kindleberger, “The Formation of Financial Centers,” 63–68.

¹¹² Drummond, “Economic History.”

¹¹³ Bott and Canadian Centre for Energy Information, *Evolution of Canada’s Oil and Gas Industry.*, 44.

¹¹⁴ Boardman and Vining, “A Review and Assessment of Privatization in Canada,” 5.

¹¹⁵ *Ibid.*, 4–5.

¹¹⁶ *Ibid.*, 22.

¹¹⁷ Bott and Canadian Centre for Energy Information, *Evolution of Canada’s Oil and Gas Industry.*, 44.

Canada should continue to privatize more of their industries, their strong FDI review board, and seemingly strong political standing suggests that Canada has the capacity to overcome political expediency, and avoidance of the maximization of short term profits over long-term security.

This history of patience on the part of the Canadian government can be seen through the privatization efforts. Despite this, there is always this notion that, “governments will be tempted to break these rules when it is politically beneficial to do so. Credible commitment by governments is notoriously difficult, especially in parliamentary systems that lack numerous veto points.”¹¹⁸. Yet, Canada is still in a good position, and have shown to find a way to build efficiency through privatization¹¹⁹. Despite normal economic debates that face all countries, Canada has a strong consensus across sectors on how to deal with privatization, and stand as a model for countries looking to utilize PPPs. While it’s important to understand the greater trends in Canadian privatization, and relations with private business in regards to governmental operations, the key point in this section is the patience that Canada has operated with.

3.2 THE CANADIAN PPP MODEL

Canada takes an approach to PPPs in the ideal way in the 21st century. Their PPP market is also one of the most well developed, with, “more than 177 of such projects [...] closed between 1993 and 2015. The great majority thereof (166) have been closed since 2004, and the current trend indicates the number of projects is on the rise”¹²⁰. Their blend of best-practices is well established on all levels of government, and they have built a strong relationship with private entities in regards to PPPs. This results in an easy-to-navigate streamlined capacity and norms to write effective PPP contracts. *The Centre for Public Impact*, gives Canada as strong series of scores in regards to the case study they completed in 2016. They concluded that while the Public Confidence was fair, the “government headed by the Conservative party was re-elected in 2008 after bringing out the PPP policy in Canada [...] [yet] the degree of confidence in PPP often depends on an individual’s political persuasion”¹²¹. This fits with most public opinion of PPPs, while they fall into the ‘privatization’ category in discourse, they can still be a useful way to build

¹¹⁸ Boardman and Vining, “A Review and Assessment of Privatization in Canada,” 25.

¹¹⁹ Laurin and Bozec, “Privatization and Productivity Improvement.”

¹²⁰ Gross and Mounier, “Overview of the Canadian Public-Private Partnerships Market,” 3.

¹²¹ “PPP Canada’s Role in Building Infrastructure.”

infrastructure through joint risk allotment. Canada has found a way to manage these moving parts, and the *Centre for Public Impact* rates the Canadian governments, “clear objectives [...] [and] feasibility”¹²² as strong, and states that, “all P3 projects selected and financed under the aegis of PPP Canada are evaluated using the Value for Money methodology”¹²³. The reliance on PPP Canada, and the utilization of a broad methodology – not just a VfM but including qualitative analysis as well – has proven to be the best path forward for Canada to procure solid efficiency rates out of their PPPs. Interestingly enough, “while the UK pioneered the P3 concept in the early 1990s, Canada is now widely acknowledged to be the key source of international best practice”¹²⁴. It is clear that for this to be the case, Canada had to build their P3 norms from the ground up.

This system is in full effect currently, and the political will is strong. This has cumulated into the 2013 Budget, “which replaces the former Building Canada Plan, envisages over 70\$ billion in infrastructure financing over a 10-year period”¹²⁵. From reports and assessments, it seems that Canada understands the limitations of P3s, which can be assessed as “P3s are generally only suitable for larger projects, given the need to justify additional procurement costs and attract private financing. The threshold above which P3 becomes a consideration varies across Canada but in most jurisdictions, is above 40\$ million in construction cost”¹²⁶. Again, this discipline, matched with the well-established norm of using value for money models (VfMs)¹²⁷, highlight the best-practices outlined in the previous chapter on the argumentation around PPPs.

According to the PPP Council of Canada, there are currently 220 P3 projects, but only 6 pertain to the energy sector¹²⁸. Yet, this is still a growing sector in Canada, and there are signs that as future energy infrastructure projects emerge, Canada may look to PPPs to build and maintain these projects. The PPP Council in Canada highlight their best practices that include, but are not limited to: “stability of the P3 market [...] efficient procurement [...] a diverse [thus competitive]

¹²² Ibid.

¹²³ Ibid.

¹²⁴ Service Works Global in Consulation and Hellowell, “Public-Private Parnterships: What the World Can Learn From Canada,” 9.

¹²⁵ Ibid.

¹²⁶ “Understanding Public Private Partnerships in Canada,” 12.

¹²⁷ Ibid.

¹²⁸ Service Works Global in Consulation and Hellowell, “Public-Private Parnterships: What the World Can Learn From Canada,” 11.

market for project finance [...] [and] a supportive political environment”¹²⁹. What this results in is a 63% approval rating of PPPs in Canada¹³⁰, which is a strong supportive poll for such a divisive issue. The question here is, how did Canada get to this point? Clearly Canada had to be receptive enough to the notion of PPPs to help build such an efficient and popular system. This can be determined through looking at Canadian history with private investment, current white-papers driving policy decisions, and current critical energy infrastructure projects. Through this lens one can identify a better understanding of how Canadian PPPs work, and their future in the critical energy infrastructure field. This can help build a clearer picture of understanding the risks and opportunities for private investment in Canada.

One of the key elements of Canadian PPP projects is their governments commitment and strong norms. In their ‘white-papers’ Canada states that, “the P3 model represents an alternative procurement option that is based on the transfer of a significant amount of design, construction, operation, and maintenance risks to the private sector”¹³¹. This perspective is shared across all sectors, including energy infrastructure, which should be an approach countries looking to build PPP legislation should look to.

In general Canada holds a relatively mainstream view on the P3 model, and lists it as a way of procurement, and not as a “silver bullet”¹³². They go on to state that, “procurement models that include operation and maintenance maximize private sector incentives to design and build high-quality infrastructure and to provide first-rate maintenance, allowing the asset to meet life-cycle expectations”¹³³. This is in line with the perspective of effective PPP models in regards to ensuring the maximum efficiency of energy security. To decide if a PPP model is the right course of action for a particular project, the Canadian model states that each project needs to go through a VfM, market assessment, quantitative analysis over the lifecycle of the project¹³⁴. This leads to an “integrated recommendation [which] balances the results of the qualitative and quantitative

¹²⁹ Ibid., 13–16.

¹³⁰ Ibid., 16.

¹³¹ PPP Canada, “Procurement Options Analysis Methodology: The Guide for Federal Departments and Agencies,” 5.

¹³² Dunn-Cavelty and Suter, “Public–Private Partnerships Are No Silver Bullet.”

¹³³ PPP Canada, “Procurement Options Analysis Methodology: The Guide for Federal Departments and Agencies,” 5.

¹³⁴ PPP Canada, “Procurement Options Analysis Methodology: The Guide for Federal Departments and Agencies.”

analyses”¹³⁵. This balance is critical to assessing all sides of the project, and outline the proper path forward. Canada outlines the qualitative analysis as, “public policy considerations, economic factors, stakeholder expectations, operation flexibility, and the ability to determine expected outputs/outcomes”¹³⁶. This is only a simple overview of the multitude of factors in which the Canadian governments considers when assessing a project proposal.

This falls in line directly with much of the situations that are suggested as ‘best-practices’ in regards to the multitude of pitfalls that can befall a project over its life-cycle. This assessment helps determine what is facing the life-cycle of the project, while simultaneously ranking the series of methods to build the project. This then naturally leads to the quantitative analysis, which unsurprisingly includes the underlying fact that, “for public-private partnerships to be successful, it is necessary for them to generate VfM”¹³⁷. Canada even refers to the quantitative analysis that takes places, as “the ‘VfM analysis’”¹³⁸. What this shows is a commitment on the part of the Canadians to gathering as much information about the different scenarios that may present themselves of the life-cycle of the project. It is then quite understandable for others to consider Canada as a model for PPPs. From reviewing many of the published documents on PPPs and infrastructure spending, it is easy to see the level of dedication on the part of the Canadian government to ensuring the efficiency of the projects. This puts Canada in the drivers-seat in negotiations, and thus easily shows how Canada is the model for PPP projects in regards to ensuring the efficiency standard to a functioning energy security apparatus. These successes in their best-practices can be seen through some of their past, present, and future projects.

Canada’s first PPP was, “The 1997 construction of the Confederation Bridge across the Northumberland Strait”¹³⁹, which was an impressive construction feat, due to the length of the bridge, and the difficult weather conditions¹⁴⁰. The bridge itself is still in solid condition today, and has been awarded as one of the world’s most successful PPP projects¹⁴¹. Currently, the largest PPP in Canada belongs to the Bruce Power project, which, “has helped Ontario achieve a number

¹³⁵ Ibid., 36.

¹³⁶ Ibid., 2.

¹³⁷ Ibid., 35.

¹³⁸ Ibid., 15.

¹³⁹ “PPP Canada’s Role in Building Infrastructure.”

¹⁴⁰ I’ve personally driven on this bridge, and can speak to the sheer length, and architectural feat of building this bridge.

¹⁴¹ “Confederation Bridge.”

of key goals, including keeping electricity prices low [...] Bruce Power operates the world's largest operating nuclear generating facility and is the source for roughly 30 per cent of Ontario's electricity"¹⁴². Overall, the project has been generally considered a success story for the Canadian government's capacity to build a strong PPP in addition to the size of the project itself. Overall the PPP contract is on-par with the best-practices outlined earlier in this case study by which Canada relies upon, which utilizes a combination of qualitative and quantitative analysis.

Most importantly, in regards to maximizing energy security efficiency, "since 2001, and through 10\$ billion of [private] investment, the company has successfully; enhanced the operational performance life of running united through strategic investments and ongoing investment in the plant [...] [and] the investment Bruce Power has made – and continues to make – improves the operational performance of each asset"¹⁴³. This highlights the matching up of desires on the part of the Ontario peoples and Bruce Power to maximize efficiency and output. The massive investment made on the part of Bruce Power to maximize efficiency stands as a key victory for those who believe that PPPs can boost efficiency and as such play a key role in expanding and enhancing a key component of energy security. This, matched with the fact that, "Bruce Power nuclear is affordable power that offers long-term price stability, providing the province with electricity at a rate 30 per cent below the average price in Ontario"¹⁴⁴, shows that affordability and stable pricing – which is a key criticism of failed PPP projects – can be achieved through the utilization of best-practices of the Canadian PPP model.

Since 2004, Canada has made a serious investment in the use of PPP models¹⁴⁵, and in 2017 the Trudeau administration, "is preparing to launch a government infrastructure bank to spur development of projects across the country"¹⁴⁶, which is a key component of the 60.8\$ Billion "in new infrastructure spending over the coming 12 years"¹⁴⁷. Overall this shows that Trudeau and his administration is prepared to make a substantial investment into new infrastructure. There is little doubt that at least a solid amount of this infrastructure investment will include possibilities for

¹⁴² "Bruce Power."

¹⁴³ The Canadian Council for Public-Private Partnerships, "Bruce Power: Canada's Largest Public-Private Partnership," 12.

¹⁴⁴ Ibid., 21.

¹⁴⁵ Gross and Mounier, "Overview of the Canadian Public-Private Partnerships Market."

¹⁴⁶ "New Infrastructure Bank Would Seek to Clear Billions in Backlogs."

¹⁴⁷ "Trudeau Woos Investors With C\$35 Billion Infrastructure Bank."

PPPs. While this is a far cry from the trillion dollars that Trump has proposed, this proposed investment is much farther down the pipeline compared to Trumps proposal. Overall, trends suggest the continuation of PPP models in infrastructure projects. Ostensibly this also suggests that there will be a continuation of the use of PPP models in building critical energy infrastructure, which should present an opportunity for investors.

3.3 THE PPP ENVIRONMENT IN CANADA

Concepts such as “pragmatism, negotiation, and multilateralism, etc. are explained as typical Canadian values whether exercised at home or abroad”¹⁴⁸, and these values are implicit in the decision-making process around PPPs in critical energy infrastructure. As such, there is an inherent openness to utilize PPPs due to their strong regulatory framework and best-practices which are in line with the cultural normative values of the Canadian system. Yet, despite this openness to PPPs, there are those in Canada who see this ramp-up of public-private partnerships as a patented waste that will charge the individual citizen more money in the long run. While this topic was expanded upon in the previous section, Prof. Heather Whiteside, in *Canada’s Privatization: The Logic of Public Private Partnerships*, states that there is little logic in the “pseudo-scientific mumbo jumbo”¹⁴⁹, and offers the alternative’s including, “drawing on new or existing forms of pooled savings [...] creating a more progressive taxation system to redistribute ‘dead money’ hoarded by wealthy individuals [...] [and] issuing debt in the form of federal bonds dedicated to vital infrastructure”¹⁵⁰. Yet, this public-focused opinion, while understandably looking to avoid private money waste, doesn’t guarantee the goal of “[lowering] total project costs”¹⁵¹. While this understandably is a contentious topic, especially for those who hold a negative opinion towards private investment, the VfM model presented by the Canadian government is a viable way to assess the overall cost through the life-cycle of the project.

What both Heather Whiteside and the Canadian PPP Council agree on is the development of this Infrastructure Bank. While each side wants a different set of norms to perpetuate from the Bank, there is hope that, “the bank should become a centre of excellence on effective infrastructure

¹⁴⁸ Thomsen and Hynek, “Keeping the Peace and National Unity,” 848.

¹⁴⁹ “Canada’s Privatization.”

¹⁵⁰ Ibid.

¹⁵¹ Ibid.

project delivery and a convener of federal provincial and municipal procurement practitioners to develop recognized best practices”¹⁵². It can be assumed that the goals of the PPP council would be to utilize the Infrastructure Bank as a means to promote the use of VfMs, and other Canadian PPP ‘best practices’, while on the other side Whiteside would hope the Bank would be utilized to look for alternatives to the private investment option. In any way, Canada could benefit from the expansion of transparency through these decision processes. Canada has systems in place, such as “Partnership BC [...] [which] helps to ensure transparency. Canadian project information, for example, is available in detail on public websites [...] [and] among other things, why a PPP approach won out over the usual procurement process”¹⁵³. This transparency would be a significant step in providing relief to those within Canadian society who fear the ‘closed door’ meetings where these PPP bids are made. Clearly outlining the decision-making process within the Infrastructure Bank is a step that the Canadian government has yet to take, as reports state that the Trudeau administration hasn’t been clear yet on the process by which the Bank will be run. *Pensions and Investments* reports that the, “Finance Minister William Morneau, who introduced the budget to the Canadian House of Commons [...] ‘pitches it as a stay the course budget, but people think it’s more like a ‘wait-and-see budget’ [...] [where] there wasn’t a lot of detail in the budget that the government didn’t already give”¹⁵⁴. Either way, it is clear that this infrastructure bank has a long road ahead of it in regards to being a functional and successful concept.

In general, like every country, Canada is facing a difficult path to the use of PPPs. There is still a fair amount of criticism to the use of private investment in building infrastructure in Canada, and there is no doubt that the criticism will rise in regards to large critical energy infrastructure projects that show through a VfM that the PPP model may be best. Yet, the general success of the Bruce Power plant shows that public-private partnerships can work in delivering critical energy infrastructure for a lower cost to the average citizen. This can stand as validation to the positive contribution that PPPs can play in strengthening energy security. The use of a PPP in nuclear energy may turn some individuals off – especially those against privatization – but with the proper PPP contract, there are areas where they can be successful in ensuring better energy security. Overall Canada, out of these case studies, have the strongest capacity on the part of the

¹⁵² Siemiatycki, “Creating an Effective Canadian Infrastructure Bank,” 7.

¹⁵³ “Public-Private Partnerships: The US Perspective,” 14.

¹⁵⁴ Baert and Baert, “Canadian Budget Light on Details for Infrastructure Bank.”

government to ensure and enhance their energy-national security nexus through their strong regulatory framework, and top-down streamlined approach. Without a doubt, Canada has the clearest set of norms within their white-papers which, when put in practice alleviates concerns in regards to the pitfalls of private investment in critical energy infrastructure. If a country like the US can utilize some of these best-practices, there is little doubt that PPPs can also provide a positive influence in the United States, who suffers from a perpetually degrading infrastructure.

4. THE UNITED STATES APPROACH

The United States presents an interesting case for PPPs. The United States has a relatively open relationship with privatization in infrastructure, but with a struggling, and even crumbling American infrastructure¹⁵⁵, there is a need for a re-evaluation. It seems incredibly unlikely that PPPs, and private investment can handle all that faces the US. Traditionally, the major infrastructure projects within the US have been procured through public means, such as “[the] Boston’s Big Dig, rerouting its central highway underground. New York City’s Second Avenue subway extension. The Denver International Airport [are all examples of] landmark American public works, paid for the traditional American Way”¹⁵⁶. These are all famous examples of American building capacity on a public level, but there is a need for more investment from a multitude of sources, and PPPs might be able to play a role.

In general, while the US has a long history with complete privatization of assets, the US has not traditionally worked with PPPs in regards to critical infrastructure compared to countries like Canada, and the UK. Yet, with the US’s history of being open to privatization –especially in infrastructure – new plans built through PPPs is an area in which both Democrats and Republicans have some form of agreement.

As was previously cited the US has a current grade of a D+ from the American Society of Civil Engineers¹⁵⁷, including a D+ in energy infrastructure¹⁵⁸. The ASCE in 2013 stated that, “America relies on an aging electrical grid and pipeline distribution systems, some of which originated in the 1880s. Investment in power transmission has increased since 2005, but ongoing permitting issues, weather events, and limited maintenance have contributed to an increasing number of failures”¹⁵⁹. This has resulted in a massive amount of power outages compared to Europe¹⁶⁰, and outages have been on the rise due to this very issue of, “aging infrastructure, combined with a growing population and more frequent extreme weather, [resulting in] straining

¹⁵⁵ Pazzanese, “Our Crumbling Infrastructure.”

¹⁵⁶ Braun, “Public-Private Partnerships.”

¹⁵⁷ “2013 Report Card for America’s Infrastructure.”

¹⁵⁸ “ASCE | 2013 Report Card for America’s Infrastructure | Energy.”

¹⁵⁹ American Society of Civil Engineers, “2013 Report Card for America’s Infrastructure: Energy.”

¹⁶⁰ McLinn and Rel-Tech Group, “Major Power Outages in the US, and around the World,” 1.

the electric grid”¹⁶¹. Overall this points to the crumbling infrastructure outlined by the corresponding grade from the ASCE, and it isn’t getting any better; per Inside Energy, “the five-year annual average of outages doubled every five years”¹⁶². The Rel-Tech Group cites that this has more to do with poor weather¹⁶³, but there is still clearly a need for an investment on resilience, matched with proposed new projects. Either way, this suggests a dire need on the part of the current Trump administration to invest heavily in rebuilding American energy infrastructure.

The ASCE highlight a series of ways to help improve the current energy infrastructure issue, and in addition help in moving towards a stronger energy security process. They conclude that America needs to “adopt a national energy policy [...] provide mechanisms for timely approval of transmission lines [...] identify and prioritize risk to energy security [...] create incentives to promote energy conservative [...] and continue research to [...] enhance [...] transmission and generation infrastructure”¹⁶⁴. Overall this paints a relatively bleak picture of American critical energy infrastructure. Through historical analysis, current practices and ‘white papers’, and practical examples, this section will focus on how the US deals with PPPs in energy infrastructure, and the role private investment may play in the inevitable investments the US will have to make. Currently the US is facing “a 3.1\$ trillion loss in gross domestic product through sizable infrastructure investment through 2020”¹⁶⁵. What this clearly shows is the need on the part of the US to make a sizable investment into their infrastructure, including, but not limited to energy infrastructure. One avenue that has been debated within the US is the use of public-private partnerships¹⁶⁶.

To understand how this situation with American infrastructure got so bad, and to understand the relationship with how the US handles private interest groups this section will assess the situation through the three main categories: (1) recent history of privatization; (2) the development of the domestic PPP model; and (3) current relationships with PPPs, while

¹⁶¹ “Power Outages On The Rise Across The U.S.”

¹⁶² Ibid.

¹⁶³ McLinn and Rel-Tech Group, “Major Power Outages in the US, and around the World,” 5.

¹⁶⁴ American Society of Civil Engineers, “2013 Report Card for America’s Infrastructure: Energy,” 6.

¹⁶⁵ Deye, “US Infrastructure Public-Private Partnerships.”

¹⁶⁶ Ballantyne, “Public-Private Partnerships Are Risky, but Can Pay off.”

simultaneously assess the current standing of the cultural normative debate on private investment in the US.

4.1 PRIVITIZATION IN THE US

While the complete history of American political economy can be assessed at a much greater depth, this thesis will look at the general trends of American political economic development and the role it has played in the American outlook on privatization in energy security. In general, “privatization, [...] is not a recent phenomenon. Since the founding of the Republic, the federal government has hired or contracted with private firms to provide public goods and services.”¹⁶⁷. The answer to the privatization debate has depended on the sentiments held by the public, and the politicians in office. The US has never had a situation where they had a massive privatization effort, because in general, the US never had a serious [State Owned Enterprise] SOE market¹⁶⁸. On one side, there are examples of massive governmental investments through projects like Franklin Roosevelt’s New Deal, which focused on, “interventionist policies [...] [which was based on] debt-financed spending, the likes of what the British economist John Maynard Keynes was proposing”¹⁶⁹. Ostensibly, this would be more along the likes of public involvement in the free market economy, and in general stood as an example of governmental involvement and dictation of the economy.

This would stand in general contrast to the privatization effort, and focus on free markets that has been championed by latest iteration of the Republican Party. Republican control has resulted, “in the past two decades [since the 80s], privatization emerges on the federal policy agenda”¹⁷⁰. This is quite the change from the interventionist outlook on the economy held by FDR, yet, this change in theory towards the market is a contentious debate in the US, and has been since its inception. To gain a current day understanding on why the US has become enamored with privatization, a way to see how the political economy of the US has changed from FDR to Trump can be understood through the flow of the economic and political environment of the past decades.

¹⁶⁷ Kosar, “CRS Report for Congress: Privitization and the Federal Government: An Introduction,” CRS-2.

¹⁶⁸ Pitelis and Clarke, “The Political Economy of Privitization,” 8.

¹⁶⁹ Johnston, “The Economic Effects of the New Deal.”

¹⁷⁰ Kosar, “CRS Report for Congress: Privitization and the Federal Government: An Introduction,” 32.

With the New Deal and FDR, there seemed to be a need to help reset the economy after the disastrous Great Depression. While it is clear that the New Deal wasn't especially great for economic recovery, and instead helped more with "helping to reduce income inequality in America. [...] [instead it was] the increased spending from the war effort [that gave] the economy the boost it badly needed"¹⁷¹. After World War Two, there was a different set of political actors and economic determinants that shaped America's relationship with privatization.

To understand how the United States became so enamored with limited regulation on the private investment in critical energy infrastructure, and the greater privatization effort in America, one of the most thought provoking perspectives revolves around the changing ideologies of the US 'elite'. In *Who's Running America? The Reagan Years* by Thomas R. Dye, he makes the point that the change from market interventionism of the Franklin Roosevelt administration to free-market capitalism, and deregulation-focus of the Reagan administration came about due to the prevailing, and changing ideologies of the U.S. elite. He states that this group, "the 'neoconservatives' among America's elite [...] no longer have the confidence and ambition of the liberals of the 1960s. They have more respect for the free market system and less confidence that government regulations will achieve their desired effects"¹⁷². This growth of disaffection on the part of the American political and economic elites towards government played a major role in the deregulation effort of the Reagan administration.

These sentiments grew because of the myriad of issues that had been facing the US from the 1960s onwards and, "by 1980, the United States had experienced a decade-long inflation – the worst of its history [...] [and as such individuals] began to counter Keynesian notions with their own 'supply-side' economics [which] asserts that the free market is better equipped than government to bring lower prices and more supplies of what people want and need"¹⁷³. This neoconservative outlook towards the free market, which had been developing since the 1960s resulted in growing deregulation movement during the Reagan era.

In essence, the Reagan administration was the true end of the New Deal Era. This laid the groundwork for the modern-day growth of privatization of the infrastructure sector, and in general stood as a time in which Public-Private Partnerships started to become a valid way to build new

¹⁷¹ Johnston, "The Economic Effects of the New Deal."

¹⁷² Dye, *Who's Running America? The Reagan Years*, 222.

¹⁷³ *Ibid.*, 223.

infrastructure. In *The Rise and Fall of the New Deal Order* they sum the economic outlook change from FDR to Reagan as, “if the New Deal ushered in a Reformation in American political life, then arguably the reign of Ronald Reagan constituted a Counter-Reformation”¹⁷⁴. The authors state that this political economy evolution relies so heavily on the ideas on the new administration. With the ‘Keynesian’ economics of the FDR Democrats failing in the face of new economic adversity, the neo-conservative outlook took hold, and grew considerably into the Reagan administration. This point is highlighted when, “The Keynesian economists [...] kit bag of remedies failed amidst the economic firestorms of the 1970s, the Democratic Party suddenly appeared mentally exhausted”¹⁷⁵, which then opened the door for a different set of economic idealism to take root within Washington D.C., and then eventually the rest of the United States. While this is by no means an endorsement of neo-conservative perspectives on the market economy, the change in ideological perspective in prominent US elite circuits brought about the change in policy towards privatization.

America has had this obsession with ‘free-market capitalism’ being a more efficient means of fulfilling the duties of government for some time, and building energy infrastructure is no different. Yet, the change in ideology from F.D.R. to Reagan is a much more nuanced topic than is outlined in this short historical analysis. There was a multitude of factors beyond simply the political ones that drove this change in outlook. In *The American Economy in Transition* the authors from the National Bureau of Economic Research discuss these trends, and explain how the economy ebbs and flows from the New Deal to the more free-market outlook in the late 70s and to 1980 when the book was published. Paul A. Samuelson notes that in 1980, the, “majority of college graduates [today] would essentially subscribe to the thesis [...] [that] The Roosevelt New Deal brought in some needed reforms. But this last half century has witnessed an overshoot of government regulation, taxation, and deficit spending. The vigor of the market economy has been sapped [...] by power-seeking bureaucrats and politicians”¹⁷⁶. This mindset held by individuals at this time highlight the growing negative effects of Keynesian economics and its failures to adapt to the series of issues that were facing the US at that time – especially through the economic difficulties of the 1970s. This outlook seeped into universities and resulted

¹⁷⁴ Fraser and Gerstle, *The Rise and Fall of the New Deal Order 1930-1980*, 294.

¹⁷⁵ *Ibid.*, 297.

¹⁷⁶ Samuelson, *The American Economy in Transition*, 666.

in an entirely new set of ideologues, which took power in the Reagan administration, and have had their ideological outlook stay in general control of Washington to this day. This has led to the deregulation of markets and selling of infrastructure assets, and laid the groundwork for the growth of PPPs as a valid way to build infrastructure. It is clear that PPPs would not have been considered during the New Deal era in building critical energy infrastructure, as it fundamentally went against the purveying ideological economic outlook of that era. This ideological path from FDR to Reagan and beyond highlights the changing dynamic in the cultural normative debate on private involvement. Overall, this has had a profound effect on the American political economy, from the elites, to the average American.

4.2 US PPP MODEL

Historically, the US has had a different relationship with PPPs compared to countries like the UK, in which PPPs are derived from the national level. The US focuses PPPs more on a state and local level, while “the federal government frequently plays a supporting role by providing concessionary financing and credit support [...] [because] unlike many countries, the US has a federal system of government wherein significant spending power is devolved to the 50 state governments”¹⁷⁷. This fits with the cultural normative perspective on private investment in the US energy infrastructure. Ostensibly, this stands as a cumulative perspective of the past sixty years, and as such this scenario presents itself as a different set of rules in which to play by.

This PPP model which operates historically on a state level could be in line for a large bump if there is a realistic investment into this model. In support of this, “in [...] 2014 [...] Moody’s Investors Service stated, ‘the United States has the potential to become the largest PPP market in the world, given the sheer size of its infrastructure [and infrastructure needs]’¹⁷⁸. Overall, the US relies on a multitude of PPP models currently, from complete design-build-maintain over life-cycle contracts, to a more simple - but the more used system; “design-build arrangement”¹⁷⁹. What this discrepancy in models highlight is the fact that the US takes a different approach compared to the Canadian, UK, and French system. While the other countries in this case study

¹⁷⁷ Werneck and Saadi, “The Public-Private Partnership Law Review,” 170–71.

¹⁷⁸ “U.S. Infrastructure PPPs.”

¹⁷⁹ Istrate and Puentes, “Moving Forward on Public Private Partnerships,” 2.

operate with a national model, which relies on best-practices learned, the US – while procuring funding from the national level – operates on a state-by-state basis.

Understandably, through this state-federal perspective, “under the US federal system there ‘is no national legislative standard providing for public-private partnerships’. Accordingly, implementing legislation is usually enacted at the state level. Currently 33 states, Washington D.C. and Puerto Rico have enacted enabling legislation for PPPs”¹⁸⁰. This seems rather convoluted, but it fits well with the Republican Party rhetoric on states’ rights over federal government involvement. Yet, based on current literature, and the constant need for suggested improvements in regards to developing better practices, there is a clear avenue for improvement for the US. It seems like a solid avenue that may benefit both political parties in the US would be the adoption of a federal ‘best-practices’ outline that the remaining states could adopt in the event where they decide to expand or implement PPP legislation. According to *The Public-Private Partnership Law Review*,

“There are common characteristics and best practices across the country. State legislators nationwide have worked together to define best practices through organizations such as the National Conference of State Legislatures (NCSL), which has formed the NCSL Partners Project on PPPs for Transportation. Generally, the enabling legislation includes the following best practices: (1) creates a focus of governmental responsibility; (2) grants appropriate statutory powers to the executive branch in the state (the governor’s office); (3) provides adequate staffing and funds for expert consultants; (4) identifies and encourages advocates and supporters across state government; (5) well defined and drafted solicitation process; (6) develops a clear state role on land acquisition, siting and environmental clearances; (7) provides clear authority and mechanisms to ensure the required state funding; and (8) does not require final, post-agreement, approval by the state legislative bodies.”¹⁸¹

This presents the general overview of ‘best practices’ on a loosely defined level. In general, this varies from the Canadian model only through the government jargon. On the flipside – although this is focused on transportation – this is similar to regards to practices focusing on cohesion between sectors of the government, utilizing experts, and a streamlined process. Ostensibly, these are goals that all countries would look to do when setting up the roadmap to possible PPP projects, and as such it comes down to proper implementation. For the US to expand their cohesion, and provide a roadmap for expanding the current apparatus, they could adopt a ‘white paper’ on the federal level which is an approach similar to the UK and Canada, which may

¹⁸⁰ Werneck and Saadi, “The Public-Private Partnership Law Review,” 176.

¹⁸¹ Ibid.

help in streamlining areas of review for due-diligence beyond a VfM. While it is clear that the political division in the US is at an all-time high¹⁸², this area may be an area in which political will can bridge the political divide. Republicans clearly support increasing private investment in infrastructure¹⁸³, and it would seem that Democrats would appreciate a cleaner ‘best practices’ that states could adopt. By presenting the best practices on a state level, mixed with cleaner VfM ‘best practices’ similar to the Canadian white papers, there is clearly an area in which the US can improve efficiency of PPP contracts on the governmental side. Yet, despite this rather middle-ground perspective, there is serious doubt that Democrats and Republicans can come together and outline these ‘best practices’ in the hopes of building more efficiency and effective PPPs in critical energy infrastructure. Until they can bridge the divide between the two major political parties, the critical aspect of ‘political will’ will turn off possible investors – if it even gets to that point.

Critically, the US must avoid the same patterns the UK fell into in regards to awarding contracts for reasons other than delivering value for money. With the need for more infrastructure, “it is important to note that PPPs are a financial tool, not a new source of funding”¹⁸⁴. The current PPP model in the US relies on states to operate a VfM appropriately. As such, overruns are a distinct possibility with this model, and should be an area of concern for those looking to build more infrastructure here in the future. This concern is shared by Lynne Moulton and Helmut Anheier in *Public-Private Partnerships in the United States: Historical Patterns and Current Trends*, where they suggest that “more project-specific rather than policy-specific partnerships will allow for more flexibility in developing contract regimes sensitive to local circumstances and challenges”¹⁸⁵. Overall this more local-focused PPP model can learn some best-practices from the regional PPP contracts in Canada. Yet, the US system is utterly unique due to its state over national dictation of policy in regards to PPPs. This also results in a complex PPP environment, which will be examined in the next section.

¹⁸² comments, “America’s Political Divisions in 5 Charts.”

¹⁸³ Zanova, “Ryan Offers Picture of Public-Private Spending in Trump’s Infrastructure Plan.”

¹⁸⁴ Istrate and Puentes, “Moving Forward on Public Private Partnerships,” 3.

¹⁸⁵ Moulton, Anheier, and Centre for Civil Society (London School of Economics and Political Science), *Public-Private Partnerships in the United States*, 14.

4.3 THE PPP ENVIRONMENT IN THE US

Behind the scenes, like the other countries in this case study, there is a cultural normative debate driving PPP usage. In essence, “American culture, like those of other countries, contains certain classic polarities, ‘inner tensions’ and contradictions. In the United States, one such tension involves the deeply seated notions of American individualism and self-reliance on the one hand, and commitments to community, formal equality, justice and civic virtues on the other”¹⁸⁶. This highlights the change in perspective on the role of the government in the economy, and speaks to the effect that the issues of the periods had on the US’s perspective of privatization. There is a perspective in America for which this thesis does subscribe to; Supreme Court Justice Ruth Bader Ginsburg recently stated that, “‘A great man once said that the true symbol of the United States is not a bald eagle; it is the pendulum, and when the pendulum swings too far in one direction, it will go back’”¹⁸⁷. This lends credence to the thought that eventually this perspective on privatization may change. In fact, in some ways some elites are thinking along these lines.

The Trump Administration is in many ways a drastic change in the perspective of tradition Reagan supply-side economics perspective. While the Trump administration follows along with the perspective on massive military budget build-up, there are real questions as to whether the Trump administration truly believes in free-trade and free-markets. At the same time, Trump is looking towards public-private partnerships as a way to drive the new infrastructure projects across the country. His plan focuses on tax-credit to private businesses. The campaign’s ‘white paper’ states that, “‘this tax credit-assisted program could help finance up to a trillion dollars’ worth of projects over a ten-year period. The innovative financing option would serve as a critical supplement to existing financing programs, public private partnerships, Build America Bonds, and other prudent funding opportunities”¹⁸⁸. The concept of free market capitalism has taken hold to an extent far greater in the 1970s of the liberal perspective than in the 1930s, which lends credence to the allowance of the growth of free market idealism inherent in neoconservative thought. This then turns into a situation where massive derogation occurred, both because of the new political

¹⁸⁶ Ibid., 2.

¹⁸⁷ “Ruth Bader Ginsburg on Trump’s Presidency.”

¹⁸⁸ Ross and Navarro, “Trump Versus Clinton on Infrastructure.”

leadership and idealism in the Republican party, but also because of the weakness of the Democratic party, and their general agreeance in free market capitalism.

Democrats currently are looking to work with the Trump administration to invest in American infrastructure. Trump has stated his interest in using public-private partnerships, but there is skepticism that Trump is the ‘deal maker’ he so ardently promotes himself as. The current political gridlock that exists at the local, state, and federal level in the US raises serious questions about the level of political will that is necessary for successful PPP negotiations. Canada cites political will as absolutely critical at all levels of government to promote the norms necessary for successful PPP contracts¹⁸⁹. There is no doubt that private interest groups have and will look to test that level of political will in pre-negotiations. This will be a serious area of contention in the future for American infrastructure. There are examples of Democrats who are receptive to PPPs¹⁹⁰, but if the political gridlock cannot be circumvented for the greater good of saving American infrastructure – and nearly everything else in the US -, it is incredibly doubtful that there will be enough political will to bring about successful PPPs. There is a serious sector of the American public which is staunchly against any sort of privatization in the infrastructure sector – including energy infrastructure. While this group ostensibly operates in the Democratic party, all signs show that they may take an approach similar to the Tea Party, and begin to primary Democratic party members that are too ‘centric’. This would lead to a deepening of the current political gridlock, and result in a growth of those in political positions who are against all privatization efforts.

The Center for Strategic and International Studies cites three area’s in which PPPs can help the US begin the long road to infrastructure recovery. It seems that the US could benefit from the, “three models of partnerships: financial partners, partners based on expertise, and partners based on market”¹⁹¹. Essentially, this would support a more ‘American conservative’ position held by many in the Republican Party. While it is critical that the Republican party – who currently hold all three branches of elected government – do not fall into this perspective that private investment can heal all infrastructure wounds. As was clearly outlined in the previous chapter on the debate

¹⁸⁹ Service Works Global in Consultation and Hellowell, “Public-Private Parnterships: What the World Can Learn From Canada,” 3.

¹⁹⁰ Maurice, “Douglass Selby Hunton & Williams LLP: Building a Legacy in Atlanta.”

¹⁹¹ “The Future of Public-Private Partnerships: Strengthening a Powerful Instrument for Global Development | Center for Strategic and International Studies.”

on private investment and PPPs, they are not a “silver bullet”¹⁹². It is clear at this current juncture that the US is in a difficult position in regards to their budgetary constraints. Back in March of 2016, Mike Patton of Forbes reported that the US is currently headed towards 20\$ trillion in debt¹⁹³, which has added to the stress on the current Trump administration and the House and Senate. This puts the US in a tough position, as they look for ways to spur economic growth, begin balancing the budget, while simultaneously maintain and increase their investment in the military industrial complex¹⁹⁴. This results in even more strain on the already inflated budget compared to tax revenue. This pressure on the possible expenditure has Many in the government wary of spending the proposed 1\$ trillion on infrastructure¹⁹⁵. Previously in this thesis the ASCE in 2013 gave the US a D+ in energy infrastructure, and the entire domestic infrastructure apparatus in general¹⁹⁶. The ASCE just recently published their updated grades, and the situation looks the same with the US maintaining their D+ grade¹⁹⁷. According to the latest report, “the U.S. energy sector faces significant challenges as a result of aging infrastructure, including supply, security and reliability, and resiliency issues in the face of severe weather events”¹⁹⁸. This is the exact same results from the 2013 report card, and as such points to a troubling trend that seems to be elusive to stop in Washington D.C. This has resulted in “between 2003 and 2012, weather-related outages, couples with gaining infrastructure, are estimated to have cost the US economy an inflation-adjusted annual average of \$18 billion to \$33 billion”¹⁹⁹. From this it is easy to infer the need on the part of the US to invest heavily in this aging infrastructure.

The vast majority of US infrastructure is owned by private businesses, yet new projects could benefit from PPPs, while simultaneously providing the US government an area in which it could build in weather resilience as a part of the contracts. Also, there is also the well-documented and well-criticized part of PPPs, which is that, “it provides access to large amounts of up-front

¹⁹² Dunn-Cavelty and Suter, “Public–Private Partnerships Are No Silver Bullet.”

¹⁹³ Patton, “U.S. Debt Is Heading Toward \$20 Trillion.”

¹⁹⁴ “Trump ‘Seeks \$54bn Increase’ in Military Budget.”

¹⁹⁵ Bender, “Trump Begins to Map Out \$1 Trillion Infrastructure Plan.”

¹⁹⁶ “ASCE | 2013 Report Card for America’s Infrastructure | Energy.”

¹⁹⁷ “Energy.”

¹⁹⁸ American Society of Civil Engineers, “2017 Infrastructure Report Card: Energy, 3,571 Total Power Outages Reported in One Year.”

¹⁹⁹ Ibid.

capital [...] [and] might also lead to faster construction and better maintenance”²⁰⁰. While this thesis would warn any group from thinking this is ‘free money’ in any sense of the word, it can help spread the cost out over the long-run, while also obtaining that up-front investment that would otherwise be unavailable to the US government and states without serious deficit-spending.

Either way, this is an option that is available to the US. If there is enough political will on both sides of the aisle to begin utilizing and promoting PPPs, then relying on the Canadian PPP model is the best course of action available. Through an understanding of the qualitative and quantitative (VfM) approach presented in the ‘white-papers’ of best-practices in Canada in regards to PPPs²⁰¹, and through the US approach to PPPs, the US should be able to find some areas in which they can expand their PPP portfolio.

Political will is a critical aspect for successful PPPs. Without political will over the long-run of a PPP contract – both in the negotiation period, and 25 or 30 years down the line – there is little chance of the PPP being successful. With a country in such political disarray as the US currently is, the chances of building even minor critical energy infrastructure is a daunting task, and most skeptics would say it’s impossible. Overcoming this task is something that will take the United States many years, and is well outside the scope of this thesis, yet it is still a key determinant in the development of the US in relations to successful PPPs in critical energy infrastructure. As such, while there are a multitude of approaches the US can take to start issues with political will, until they do so the US will continue to have a sub-par infrastructure apparatus. PPPs can play a key role, and there is substantial evidence that they can help spur growth, yet without political will to build the contracts appropriately, all efforts will fall short. On the flip side, through the optimistic lens, it seems that there are much more area’s in which both Democrats and Republicans can work together in new infrastructure projects, and through adhering to best practices, PPPs can be a good way to achieve them.

Despite this, the outlook seems optimistic about the US in regards to rebuilding their infrastructure. In general, it seems that, “many analysts predict robust growth for US PPPs [...] Moody’s Investor Service states [...] that ‘given the sheer size of its infrastructure and growing urban population the US has the potential of becoming the largest market for PPPs in the

²⁰⁰ Besanko, “Can the Private Sector Solve the U.S. Infrastructure Crisis?”

²⁰¹ PPP Canada, “Procurement Options Analysis Methodology: The Guide for Federal Departments and Agencies.”

world”²⁰². It is understandable on the part of Moody’s to have this projection. No doubt that massive need for more infrastructure investment, along with the general agreeance on the value that PPPs can add should be a strong indicator – amongst other factors – that there is a place for private interest groups in future projects. At the same time, *The Public-Private Partnership Law Review* states that “the ability of both the private and public sectors to take on large, long-term obligations for funding the US’s increasing infrastructure needs will be limited by the overall economic health of the US and the strengths of its debt and equity capital markets”²⁰³. Overall, this should be in everyone’s mind when assessing the VfM of PPPs, yet there is a propensity for some in the US to assume that one approach is better than the other when it is clear that a balance is called for.

²⁰² Werneck and Saadi, “The Public-Private Partnership Law Review,” 187.

²⁰³ Ibid.

5. THE UNITED KINGDOM APPROACH

The United Kingdom was historically the model for PPPs until Canada took over that label from them in the early 2000s. In general, the UK has a difficult history with the trials and errors of PPPs and private finance within their domestic markets compared to the other countries in this case study. Ostensibly, “the first PPP projects were started in the early 1990s and, despite changes of government, there was a steady increase in their use throughout that decade, with most activity being branded under the Private Finance Initiative (PFI)”²⁰⁴. This model was used throughout the UK over the past few decades, and has resulted in hundreds of projects paid up-front by private investment. Yet this has resulted in some difficult, yet clearly foreseeable side effects. *The Independent* reported that, “The UK owes more than 222bn [pounds] to banks and business as a result of Private Finance Initiatives”²⁰⁵, and while *The Independent* paints a bleak picture stating that, “every man woman and child in Britain is more than 3,400 [pounds] in debt – without knowing it and without borrowing a single penny – thanks to the proliferation of controversial deals used to pay for infrastructure”²⁰⁶. What *The Independent* fails to state is that the UK government would be in a similar state of debt anyways, regardless of the procurement method to pay for the infrastructure due to the structure of the cost. Yet, this perspective has resulted in serious backlash to the concept of PPPs, and the PFI project in general. This, matched with the recent report by *The Guardian*, which states that, “urgent inspections should be carried out on all Scottish public buildings built using PFIs, says architects, following the publication of a damning report into the safety of PFI schools”²⁰⁷. While this has little to do with critical energy infrastructure, there is no doubt that PPPs and PFI is under tight scrutiny, and plays a factor into the notion of Canada becoming the model country for PPPs over the UK. The main difference in this regard has not been the socio-political perspective, but the changes in Private Finance version 2 (PF2) and the increased borrowing rate by which these private companies utilized PFI compared to the rate in which the UK government could borrow at if they built this infrastructure through public means. This, mixed with the revamped PF2, has resulted in a steady decline in PFI usage²⁰⁸.

²⁰⁴ European PPP Expertise Centre, “United Kingdom: England PPP Units and Related Institutional Framework,” 5.

²⁰⁵ “Crippling PFI Deals Leave Britain £222bn in Debt.”

²⁰⁶ *Ibid.*

²⁰⁷ Perraudin, “Architects Call for Urgent Inspection of All PFI Buildings in Scotland.”

²⁰⁸ Starodubtseva and Booth, “PFI: Costs and Benefits,” 5.

In general, this is what happens when utilizing PPPs firstly in an improper way, followed by reform. With the fact that cost is spread over the life-cycle of the project, and companies are borrowing at a higher rate, there is no free money, and PPPs are not some magical way to get free infrastructure. In fact, one of the most current report states that while the government can borrow at a “3.1-3.4%, [private finance must borrow at a rate of] 7.2-7.4%”²⁰⁹, which makes it hard for PPPs – if not impossible- to deliver VfM at such a steep rate. This struggle that the UK is dealing with now should stand as a warning to any country that believes that PPPs are somehow a magically better way to build infrastructure. To understand how the UK got into this situation, this section will look through the three main categories: (1) recent history of privatization; (2) the development of the domestic PPP model; and (3) current relationships with PPPs establish where they can go in the future to overcome these difficulties currently facing the nation. Because, unfortunately for the UK, “much like football, PPP started out in the UK, but is now done better overseas”²¹⁰. Thankfully, there are areas in which the UK can improve upon their record, and through adopting more of Canada’s best-practices, the UK can get back on track. It seems that the UK has suffered from utilizing PPP/PFI too often, *The Guardian* gives the scathing review that, “the UK has maintained that value-for-money is the only official justification for PFI. In reality, however, the UK has often pursued PPP/PFI for non-value-for-money reasons. PPP/PFI was seen as a super-sized credit card”²¹¹, and unfortunately for the UK, those payments are now due.

5.1 PRIVATIZATION IN THE UK

In many ways, the current energy security situation in the UK can be traced back to the privatization effort of the early 1980s. In general, “the seeds of privitisation and liberalization [in the UK energy sector began] in the cabinet reshuffle of September 1981, Nigel Lawson became Secretary of State for Energy. He was a key architect and advocate of the unfolding privitisation strategy that became a centerpiece of the government’s programme”²¹². This ideological position on privatization resulted in the massive sale of state-owned enterprises (SOEs), and has resulted

²⁰⁹ Ibid., 12.

²¹⁰ Fawcett, “Public Private Partnerships.”

²¹¹ Ibid.

²¹² Pearson and Watson, “UK Energy Policy 1980-2010: A History and Lessons to Be Learnt - A Review to Mark 30 Years of the Parliamentary Group for Energy Studies,” 7.

in the current economic atmosphere. This ideological position resulted in the Energy Act of 1983, which put these ideological positions on privatisation into practice²¹³. Since then, there have been a series of issues and changes in energy supply and demand balances, which has resulted in, “striking changes in the thinking about [UK] energy policy”²¹⁴. Despite this, the UK has survived many energy security issues, and prevailed through difficult energy security balances which would have had much more profound effects on a weaker government. Yet, this does not mean that the privatization route taken in the 80s was the ideal, or correct path for another country to take. Energy SOEs can still be successful in today’s world economy²¹⁵, but in general it seems that for the most part, the decision on the part of the UK government to promote competition and privatization of their energy markets did work successfully enough. Yet, “clear manifestations of the turn away from liberalization can already be seen [...] the challenge is how to retain the positive features of markets whilst also managing the achievement of societal goals that the market alone can’t provide”²¹⁶. Much like what occurred within the US, there was a general crisis with the ideological front in the ‘liberal’ perspective on international economies in the 1960s. While this was not completely their fault, the decision on the part of “Both Labour and Conservative governments imposed substantive cuts in public sector capital spending programmes. Net public sector investment under the Labour government 28.8bn [pounds] in 1974/75, more than halved by the end of the decade and plummeted to a mere .4 percent of GDP in both 1988/89 and 1998/99”²¹⁷. This led to a disparity between public funding, and demand for new infrastructure. While they were able to make short term savings, the UK was in need of new long-term focused funding for infrastructure, and there was still a general lack of ideological desire to raise public funding. This sentiment led to the UK government becoming one of the first countries to implement a system for private finance.

The UK was one of the first countries to begin utilizing private investment, and PPPs in building their infrastructure. While before 1989, there were few projects funded by private money

²¹³ Ibid., 8.

²¹⁴ Ibid., 33.

²¹⁵ “State-Owned Enterprises: Catalysts for Public Value Creation?”

²¹⁶ Pearson and Watson, “UK Energy Policy 1980-2010: A History and Lessons to Be Learnt - A Review to Mark 30 Years of the Parliamentary Group for Energy Studies,” 34.

²¹⁷ “Private Finance Initiative and Public Private Partnerships: What Future For Public Services?,” 5.

due to legislative constraints, “in 1989 these rules were withdrawn and [...] in 1992, the then Chancellor announced that HM Treasury was examining ways to increase the scope for private financing of capital projects in general. This would be done through [...] the Private Finance Initiative (PFI)”²¹⁸. This mindset has been – in general – accepted throughout the changing administrations since this time, and, “in May 2010, [the current coalition government] confirmed that it remains committed to the Private Finance Initiative as a way of delivering investment in infrastructure”²¹⁹. Yet, despite this general acceptance of PFI and PPPs as a valuable way to build infrastructure, there have been some speed-bumps along the way. Now, PPPs and PFI are not the same thing, exactly. While both have “very similar characteristics, the key difference being the way in which the relevant project is funded”²²⁰. The key difference is the way in which the life-cycle process is handled. PFI ostensibly involves, “financing [from] private investment which requires the private sector design, build, finance, and operate facilities. PPP is a generic term to describe partnerships which involve more flexible methods of finance and operating”²²¹. Yet, this in many ways provided to be one of the main issues with the procurement method. The OECD states that, “PFI is a public service delivery type of PPP [...] PFI, which is considered as a generic classifier for all types of ‘constructor PPP [...] is essentially the same thing as DBFO (Design, Build, Finance, Operate), DCMF (Design construct, manage, and finance), BOO (Build, Own and Operate), [etc.]”²²². This in general highlights the type of PPPs PFI deals with. Ostensibly these projects are long-term and can deal with a variety of contracts, but since they are construction base suggests that the PFI model has the private interest group in charge of the construction phase of the process.

Yet, at the same time there is still an inherent lack of flexibility with the PFI model compared to the multitude of other ways in which PPP contracts can be drawn up, especially in building standards in regards to something as simple as energy standards that may have been

²¹⁸ European PPP Expertise Centre, “United Kingdom: England PPP Units and Related Institutional Framework,” 8.

²¹⁹ “Private Finance Initiative: Seventeenth Report of Session 2010-2012,” 4.

²²⁰ “PFI (Private Finance Initiative)/PPP (Public Private Partnerships) And...”

²²¹ “Private Finance Initiative and Public Private Partnerships: What Future For Public Services?,” 3.

²²² Alshawi, “Concept and Background to Public Private Partnership (Ppp)/Private Finance Initiative (Pfi) Uk Experience.”

avoided through less-rigid contracts²²³. The lack of flexibility in the PFI method presents a unique issue for the UK government, especially since the PFI, “was launched in November 1992, [as] a financial mechanism to obtain private finance which could satisfy the political need to increase investment in the infrastructure without affecting public borrowing”²²⁴. This thought process behind the initiation of the PFI is one of the main reasons not to work with private finance, and in fact, stood as a major problem throughout the history of the PFI.

When a country no longer adheres to a balance between a VfM and qualitative analysis, then major issues with PFI and PPPs begin. In their assessment of PFI in 2011, the House of Commons stated that, “there remains significant incentives to use PFI which are unrelated to value for money: the majority of PFI still does not appear in government debt or deficit figure; [and the] government departments can use PFI to leverage up their budgets without using their allotted capital budget – the investment is additional and not budgeted for”²²⁵. This perspective on PFI and PPPs is exactly what a country should not be thinking about, and operating as when dealing with private investment. This failure to account for funding, and utilizing private finance as a way to hide debt within budgets is the exact opposite of what a country should do when handling private finance, and is completely detrimental to a country’s economy. In fact, it is critical that any country looking to build a PPP framework should explicitly avoid the decisions on the part of the UK government in regards to their PFI. Importantly, the UK government has started to address the problem. They’ve identified, “these incentives [which are] unrelated to value for money [and their] need to be removed. [In addition] stricter rules and guidelines governing the use of PFI must be introduced”²²⁶. This outset, and acknowledgement on the part of the UK government was critical for private finance reform. In general, it seems logical for the UK to look towards the Canadian model which is much more stringent and streamlined compared to the UK model. Understanding the variables at play, and assessing alternative reasons for as to why projects are being proposed, and basing decisions off VfMs instead of for budgetary reasons is a solid place to start.

Overall, the decision on the part of the Thatcher government to privatize the energy sector has led to an energy security dilemma which has been growing over the recent years: how should

²²³ Hurst, “‘Inflexible’ PFI Works against Sustainability.”

²²⁴ “Private Finance Initiative and Public Private Partnerships: What Future For Public Services?,” 5.

²²⁵ “Private Finance Initiative: Seventeenth Report of Session 2010-2012,” 3.

²²⁶ Ibid.

they deal with the issues of climate change and renewable energy? In the most recent set of polling by the UK government, in general, “around 75-80%”²²⁷ of UK residents support renewable energy, which is about as good as it is going to get for a democracy in regards to public opinion in this very divided world. What this indicates though, is a clear divide between what the peoples of the UK want, and what the market dictates, which is a fundamental issue with the reliance, or over-reliance on a market-based system. While the cost efficiency, or VfM of renewable energy is getting better, fossil fuels are still the cheapest way to deliver energy to the UK²²⁸. Yet, ostensibly, much of the fossil fuels that private corporations depend on to deliver energy to the people of the UK, come from areas that are somewhat detrimental to UK energy independence – compared to producing domestically - and thusly, their energy security²²⁹. While the UK does rely on supply from Russia, this thesis shares the opinion of Jonathan Stern, from the Oxford Institute of Energy Studies, “that ‘the Russians have proved generally to be highly reliable suppliers’”²³⁰, and will most likely not turn off the supply of energy to Europe. Yet, even though the UK could boost their supply energy security by utilizing more renewable energy which is produced domestically in the case of solar and wind power, “it is clear as with any major innovation, that the global economies shift toward renewable energy will not be due to a moral imperative but rather an economic incentive”²³¹. Despite the desire to utilize renewable energy, it simply isn’t cost effective enough at this time. Despite the cost-gap closing every single day, the “system integration costs”²³² present a serious investment issue. Until that time comes when the cost divide is sufficiently closed, the private corporations that operate in the UK will not move completely to renewable energy. Unsurprisingly, this outlook is indicative of the UK’s current position on renewable energy compared to the rest of the EU, where the UK rank 24th out of 28²³³. What these points illustrate is the divide on a multitude of levels between what the future holds in renewable energy, versus

²²⁷ “Energy and Climate Change Public Attitude Tracker: Wave 20,” 5.

²²⁸ Posted by Austin Schiano on December 14 and Blog, “Comparing Cost- Fossil Fuels V.s. Renewable Energy.”

²²⁹ “UK Energy: How Much, What Type and Where from? | Visual.ONS.”

²³⁰ “UK Energy Supply: Security or Independence?,” 17.

²³¹ Posted by Austin Schiano on December 14 and Blog, “Comparing Cost- Fossil Fuels V.s. Renewable Energy.”

²³² “UK Renewable Subsidies and Whole System Costs: The Case for Allowing Biomass Conversion to Compete for a CfD,” 2.

²³³ “UK Ranked 24th out of 28 EU States for Renewable Energy.”

the cost effectiveness of fossil fuels with the extra cost of lowering energy security and utilizing energy that is detrimental to the environment. This also illustrates the divide between where the public wants their energy portfolio to look like, and what it actually is in the current economic markets. As such, the decision to privatize energy markets in the 80s has a profound effect on the UKs position today.

Per Clarke and Pitelis, “the UK, which led the way in the implementation of wholesale privatization, the policy was not originally clearly conceived, but was motivated by political as well as economic reasons”²³⁴. What this suggests is that the decision process behind the privatization process in the UK adheres to the importance of ideological will outside of economic factors. That does not mean that one approach is better than the other, especially considering how both successful and influential this wholesale privatization effort was for the UK²³⁵.

5.2 THE UK PPP MODEL

Currently the clear majority, if not every critical energy infrastructure project is handled completely by private finance, and not through PPPs or PFI²³⁶. Ostensibly this is a result of the Thatcher governmental policies in the 80s which resulted in the selling of state resources to private industries. This policy of privatization was, “[introduced] by Britain’s Thatcher government in the early 1980s to the then-skeptical public, privatization now appears to be accepted as a legitimate – often a core- tool of state-craft by governments of more than 200 countries”²³⁷. This led to the notion of the UK as the leader of the privatized world. Throughout much of the period running up to, and after WWII European countries believed that government had a series of necessary roles, “until Margaret Thatcher’s conservative government came to power in Great Britain in 1979, the answer to this debate [on privatization] was that the government should at least own the telecommunication and postal services, electric and gas utilities, and most forms of non-road transportation”²³⁸. As was stated in the previous case study on the United States government, the

²³⁴ Pitelis and Clarke, “The Political Economy of Privitization,” 4.

²³⁵ Megginson and Netter, “From State to Market: A Survey of Empirical Studies on Privitization,” 1.

²³⁶ “National Infrastructure Pipeline 2016 - GOV.UK.”

²³⁷ Megginson and Netter, “From State to Market: A Survey of Empirical Studies on Privitization,” 321.

²³⁸ *Ibid.*, 323.

UK were the first to actualize the frustrations with big-government with the decision to privatize sectors of the government previously deemed too important to do so. The success by which the UK government had in regards to privatization at this time inspired other countries to follow suit, including but not limited to Canada²³⁹, the US, and France²⁴⁰. This decision to begin privatization of the UK government resulted in the first modern steps towards the use of PFI and PPPs. In general, the UK has utilized their PPP market in sectors outside of critical energy infrastructure, as the vast majority of the market has been completely privatized, and as such new infrastructure is almost completely handled through private money, without a partnership with the government²⁴¹.

The National Audit Office in the HM Treasury published a report in March of 2010 where they outlined their goal in achieving a value for money (VfM) across departments, and through a series of best-practices maximize their efficiency²⁴². Essentially the goal of the report was to point out areas in which each department needed to extend their capacity in dealing with complex investments through PPPs or PFIs. The six functions include the capacity to, “implement and influence PPP, PFI and commercial policy, manage PPP and PFI projects within programmes, control the quality of PFI and PPP projects in procurement, support operational PPP and PFI projects to ensure they achieve their benefits, manage the market of operations and investors, and enable continuous improvement in PPP and PFI projects and programs”²⁴³. In general, the document outlines the ways in which the individual departments can maximize the efficiency of the PPP or PFI, while at the same time focusing on handling the investment ‘in house’. They indicate three varying levels in which the individual department can handle the PPPs or PFI projects from least to most mature²⁴⁴. Although they fail to indicate exactly how these ‘best practices’ should be implemented, it clearly outlines area’s in which each department can aim to improve through the six fields outlined. This was a step that needed to be taken in regards to the

²³⁹ Boardman and Vining, “A Review and Assessment of Privatization in Canada.”

²⁴⁰ Megginson and Netter, “From State to Market: A Survey of Empirical Studies on Privatization.”

²⁴¹ “National Infrastructure Pipeline 2016 - GOV.UK.”

²⁴² National Audit Office (United Kingdom), “Managing Complex Capital Investment Programmes Utilising Private Finance.”

²⁴³ *Ibid.*, 8.

²⁴⁴ National Audit Office (United Kingdom), “Managing Complex Capital Investment Programmes Utilising Private Finance.”

capacity by which these departments handle these projects. Although the UK still struggles with varying pressures of using PFI beyond the base VfM, as was outlined in the previous report on the failures of PFI, utilizing the best practices outlined in this document are solid goals for every department to aim for. In the report by Mustafa Alshawi some of the issues with PFI currently are, “[the] innovation inputs, in both design and construction, could be inhibited, as contractors become wary of overruns [...] disparity problems between the private and public sector, in terms of differing modes of operations, decision making and accountability, [etc.]”²⁴⁵. What these issues, previously cited areas of inefficiency, and lack of reliance on VfMs show is a clear gap in which the UK government must traverse if they hope to achieve a more efficient PPP and PFI model. The gap with the VfM and the awarding of PPP projects in the original PFI model can be seen in the number of projects that were awarded in the early 2000s²⁴⁶.

In regards to this gap between the reliance on VfM, and the fact that the UK government continues to have issues with having different drivers in awarding contracts, the dialogue on ‘best practices’ seems to suggest that they approach the negotiations the correct way. This area in which the UK government does seem to have their ‘best-practices’ in order can be seen in their government-wide approach to dialogue between the public sector, and private interest groups. In their *Guidance on Competitive Dialogue* one can see how they attempt to approach these contract negotiations. They state that, despite the scathing report on the PFI, the VfM is the very first step that needs to take place to attain a successful “competitive dialogue”²⁴⁷. This, followed by focusing on justification, understanding the selection process, and then holding comprehensive dialogue and understanding the various issues at play in regards to the qualitative analysis seems to be in place in regards to competitive dialogue²⁴⁸. As such, the disconnect between awarding VfM contracts and having failed projects must take place when there is a failure to adhere to governmental ‘best-practices’. They even refer to the pitfalls that have resulted in these failed projects, and higher prices when obtaining private loans through the government when they state that, “through preparation, planning and communication with the supplier market is good practices

²⁴⁵ Alshawi, “Concept and Background to Public Private Partnership (Ppp)/Private Finance Initiative (Pfi) Uk Experience,” 6.

²⁴⁶ Starodubtseva and Booth, “PFI: Costs and Benefits.”

²⁴⁷ “Competitive Dialogue in 2008: OGC/HMT Joint Guidance on Using the Procedure,” 11.

²⁴⁸ “Competitive Dialogue in 2008: OGC/HMT Joint Guidance on Using the Procedure.”

under any procurement, but is fundamental to competitive dialogue”²⁴⁹. So, even though they explicitly state their goals through a VfM, and through promoting dialogue and understanding the qualitative inhibitors to innovation and efficiency, there is still a gap between the goals and results of the projects. With this in mind, while there is always a goal of utilizing the ‘best practices’ to achieve successful PPP contracts, the ‘best practices’ of the Canadian government are not so much different. They promote competitive dialogue, VfMs, and qualitative analysis just like the UK government. Yet, the Canadian government is clearly more committed to following through with comprehensive analysis.

The divide that occurs is clearly stated in the analysis of the PFI where different, “incentives to use PFI which are unrelated to value for money [are utilized, which include situations where] the majority of PFI debt still does not appear in government debt or deficit figures; [and] [where] investment[s] [are] additional and not budgeted for”²⁵⁰. These issues should have been addressed earlier, and in addition to helping the government understand their finances in a complete picture, could have helped alleviate one of the biggest criticisms of the practice: hiding money. Through comprehensively addressing actual costs, and not hiding life-cycle costs of infrastructure projects, they could have alleviated this criticism while also returning the main incentive to where it belongs: value for money, and value for money alone. It is an easy hit to criticize the fact that the UK government hid these life-cycle costs of PFI in their budget. This sort of approach makes it easy to criticize, and in fact detracts from the PFI or PPP process in general, and gives the otherwise valid system a bad name. Through a very simple reform, the UK government could have dealt with that issue on both fronts in a timely manner. It would have saved them money over the long run by eliminating non-VfM incentives, while simultaneously working towards giving PFI a better image.

Thus, when the Seventeenth Report was published in regards to the assessment of the PFI, there was a need on the part of the government to reassess their approach to PPPs and the PFI. In December of 2012, the government doubled-down on finding solutions to the ‘drivers’ problem that plagued the PFI system. In their new PF2 system, they promised to provide, “greater transparency, [including] an annual report detailing project and financial information on all

²⁴⁹ Ibid., 4.

²⁵⁰ “Private Finance Initiative: Seventeenth Report of Session 2010-2012,” 3.

projects where Government holds a public sector equity stake”²⁵¹. Clearly, this private finance revamp on the part of the UK government in 2012 was hopefully a way to alleviate these concerns about the system. Unsurprisingly, this return to VfM base practices, and more transparency has resulted in a, “shrinkage in the UK PPP market”²⁵². This is a result of a multitude of reasons, but it is easy to raise the question as to if the drop in PFI was due to the increased transparency and return to VfM life-cycle focused quantitative analysis over hiding budget expenses. Despite the general downward trend of PPP projects in Europe, “The UK was the largest PPP market in Europe, both in terms of value with a total of EUR 3.8 billion and in term of number of projects with 28 deals closed”²⁵³. Overall it seems that the UK PPP market, while slightly depressed compared to previously years, still benefits from a robust market – just not in critical energy infrastructure.

5.3 THE PPP ENVIRONMENT IN THE UK

In regards to critical energy infrastructure, the lack of capacity on the part of the UK government to enable, and maximize efficiency throughout the FDI program indicated that without changes to their model they would have issues with achieving a more balanced and efficient energy security apparatus. In general, though, “power projects throughout the UK (of all types, including renewable energy) and water projects in England are not included in the PFI programme, as the UK has privatised most of its utilities in the late 1980s”²⁵⁴. This can be seen in the latest National Infrastructure Pipeline report of 2016, which shows only one PPP initiative within the scope of energy, which is a program on Nuclear Technology Innovation, and not an actual physical infrastructure project²⁵⁵. Overall this helps indicate the current PPP environment for the UK. Their decision to privatize the clear majority of their energy sector results in a lack of public involvement in the building of critical energy infrastructure.

Yet, there is always the notion that future energy infrastructure projects could be built through PF2 or a different PPP model. Ostensibly, the political climate in the UK suggests that

²⁵¹ “A New Approach to Public Private Partnerships,” 13.

²⁵² “Mills & Reeve | PF2 and Complex Procurements.”

²⁵³ “Market Update: Review of the European PPP Market in 2016,” 2.

²⁵⁴ European PPP Expertise Centre, “United Kingdom: England PPP Units and Related Institutional Framework,” 9.

²⁵⁵ “National Infrastructure Pipeline 2016 - GOV.UK.”

this would not be a difficult issue. While there are clear examples of the myriad of issues within the PFI model, the fact that the overwhelming majority of energy infrastructure projects are already completely privatized might in fact be an area of compromise for those who feel that privatization is not ideal for something like critical energy infrastructure.

These sorts of decisions on the part of the UK government are something that will have to take place farther down the line, as the overwhelming majority of current energy infrastructure projects are tied up in completely private projects, including nuclear energy. There is a gap between what the private groups are providing to the public, and there may be an area in which public-private partnerships may be able to fill the gap. Professor Jonathan Stern of Oxford Institute of Energy Studies stated that, “we have a very off situation in the UK. We have built very little storage in the privatisation era, and that is not because we do not have a lot of projects. There are a lot of projects out there, but the commercial environment has not been such as to see them come forward in a timely fashion”²⁵⁶. What this suggests is that there is a need on the part of the UK to build a better gas storage system for securing their energy security. There is an intrinsic gap between what the UK needs, and what the market is dictating. In the most recent IEA report on the current energy situation in the UK, they state that “with domestic North Sea oil and gas production set to decline by around 50% from 2010 to 2020, and thus import dependence set to increase, this could create requirements for additional storage capacity in the medium term”²⁵⁷. The lack of storage systems built by the private sector may save money in the short term, but does little to secure long-term energy security. This sentiment can be seen in regards to much of the critical energy infrastructure in the UK, “since the privatisation of the companies, the regulatory framework which was created has encouraged them to reduce costs and increase operating efficiencies whilst maintaining or improving their customer service”²⁵⁸. This has resulted in a gap between what drives the private industry in regards to efficiency, and what drives energy security in the UK.

There is a clear need to fill the divide between the two systems, and possibly through a PPP they could fill in these gaps in critical energy infrastructure, and build a more robust and effective energy security apparatus in regards to supply and storage. According to, “The British Geological

²⁵⁶ “UK Energy Supply: Security or Independence?” ev7.

²⁵⁷ “Energy Policies of IEA Countries: The United Kingdom,” 82.

²⁵⁸ “UK Energy Supply: Security or Independence?” Ev 192.

Survey (BGS) [they believe] that the UK's energy security is 'closely bound up with how much gas it stores', and that at present the country does not have the underground gas storage that would be expected when comparing the UK to other countries"²⁵⁹. As such, there is a divide between what the private corporations are supplying in regards to storage facilities to fill in the gap of supply. There is a need to fill that gap to provide a level of security for the people of the UK. BGS goes on to state that, "In the past the UK could meet changes [...] from the North Sea and East Irish Gas Fields; however, these offshore fields are rapidly depleting and the market is losing its ability to respond flexibly"²⁶⁰. Thus, it is critical for the UK to find a way to fill in this storage gap. Even if the UK government continues to move in a more renewable energy minded focus, there is still a need for storage of fossil fuels to deal with gaps in intermittency of renewables. To deal with this issue, the UK may need to utilize more public-private partnerships to build this critical energy infrastructure gap that is a natural occurrence in the current market.

In conclusion, from an investment risk perspective the UK is still a solid choice for those interested in investing in the region. There is little doubt that any of the countries in these case studies would be a solid place for these long-term investments. Each of these countries have solid financial standing, and present good opportunities. The UK currently has a different energy environment compared to the other countries in this case study. The UK went through a massive privatization period where the entire energy sector was moved to the private sector. This has resulted in a situation where there is only a very small role for PPPs to play, yet the market does exist. Currently there is a need for more gas storage, and there is a possibility that a PPP could fill that need as the current market does not seem to be making advances in this regard²⁶¹. It does seem that in general, the market should eventually fill this need²⁶², and the need for a PPP through PFI or other means may not be necessary. It depends on the VfM, and the desire on the part of the UK government to take their own steps in securing their energy security supply. Overall, the cultural normative debate on private investment in critical energy infrastructure has had a profound effect on UKs energy security. With the complete privatization of the energy systems in the UK, the peoples have little say in the decision-making process in regards to new infrastructure. As such,

²⁵⁹ Ibid., 23.

²⁶⁰ Ibid.

²⁶¹ Fevre Le, "Gas Storage in Great Britain."

²⁶² "Gas Storage | National Grid."

national security in regards to energy security is generally outside of the hands of the people. With the need for new renewable energy infrastructure on the horizon, there is little doubt that private corporations will fill this need as it becomes more affordable, but at a much slower pace as other countries in Europe who have more control over their energy infrastructure. This doesn't suggest that the UK is in a worse energy security situation compared to others, but they will have a different set of issues facing them over the next 50 years compared to a country such as France.

6. THE FRENCH APPROACH

The final case study in this thesis is France. France followed much of the same wave of privatization as the UK and the rest of Europe, and France began their privatization effort in the mid to late 1980s²⁶³. Yet, unlike the other countries in this case study, France has a unique relationship with their government, and as such, “the very definition of privatization has undergone certain theoretical limitations”²⁶⁴. This has had a profound effect on the decision-making process in regards to their energy-national security nexus. This dynamic flows down to the very legislation that govern France, which can be seen in their energy security apparatus. In general, while France has a rather robust legislation and norms for the utilization of PPPs, it seems that France utilizes PPPs rarely, especially in the field of energy infrastructure, with only 3 current projects falling under that category²⁶⁵. Yet, with the need for new infrastructure, especially with “the biggest challenge ahead is for wind power, where less than 30% of the additional targeted capacity for 2020 has been installed so far”²⁶⁶, France must make a major investment in the coming years. Overall France has been historically reliant on nuclear energy, and are considered to be a world leader in the sector²⁶⁷, yet with public opinion moving away from what is deemed to be a dangerous and volatile energy supply, there is a need for new infrastructure as France looks to move to a more renewable-based energy mix.

It is the opinion of this thesis that nuclear energy is an incredibly safe source of reliable energy, but with public opinion falling after the Fukushima disaster, and the fact that, “the cost of construction of new nuclear [in France] is extraordinarily expensive”²⁶⁸, France is looking to go in a different direction. Despite the fact that, “the French government now holds 90 percent of shares in Areva, the firm that builds nuclear reactors, and 85 percent of Electricité de France (EDF), the utility that operates them”²⁶⁹, France is going to have to cut nuclear energy production to meet renewable energy goals. Recent statements suggest that, “the French government announced its willingness to decrease nuclear energy production from 70% to 50% of [their]

²⁶³ Berne and Pogorel, “Privitisation Experience in France.”

²⁶⁴ Tirard, “Privatization and Public Law Values,” 290.

²⁶⁵ “PPP Projects in France | Infrastructure Finance & Investment - PPP.”

²⁶⁶ “European Energy Market Reform: Country Profile: France,” 9.

²⁶⁷ Jolly and Reed, “French Nuclear Model Falters.”

²⁶⁸ Irfan, ClimateWire, “France Loses Enthusiasm for Nuclear Power.”

²⁶⁹ Ibid.

electricity mix by 2025. However, it remains unclear how this target will be reached and what pathway the country will follow to replace this capacity in less than 10 years”²⁷⁰. As a part of its history, France built this dependence on nuclear energy due a multitude of energy security threats that occurred in the 50s, 60s, and 70s. In particular, France suffered immensely energy wise, “by its dependence on foreign oil, including the oil embargo after the 1956 Suez Crisis and the independence in 1962 of Algeria, which has a large oil reserve in the Sahara. These blows gradually pushed France towards nuclear power”²⁷¹. These events, pushed France to strongly debate the merits of obtaining energy independence and thus greater perceived energy security. To understand where France is today in regards to energy security, along with how France is going to make the switch to renewable energy and how they will fund the multitude of renewable energy infrastructure, this case study will look at the three main categories: (1) recent history of privatization; (2) the development of the domestic PPP model; and (3) current relationships with PPPs. In each of these categories, this thesis will look at the changing underlying domestic cultural normative relationship in the history of energy security to understand their approach to the subject, current legislation and projects, and finally assess what’s next for one of Europe’s most important countries.

6.1 PRIVITIZATION IN FRANCE

Ostensibly, France’s approach to privatization is much more different compared to Canada, the US, and the UK. France moved towards privatization in the same wave as the other countries in this thesis. Yet, unlike the UK, France moved at a much slower pace²⁷², and has maintained control of some of the largest corporations in the energy sector, including the Électricité de France EdF, where the government continues to hold a large stake²⁷³. In general, “a major liberalization and privatization drive started internationally in the 1980s and France followed the trend. Even though European competition policy does not demand privatization, it imposes severe restrictions in government intervention in the economy”²⁷⁴. Although France decided to follow through with

²⁷⁰ “European Energy Market Reform: Country Profile: France,” 11.

²⁷¹ “The History of Energy in France.”

²⁷² Pitelis and Clarke, “The Political Economy of Privitization,” 4–5.

²⁷³ Berne and Pogorel, “Privitisation Experience in France.” 36.

²⁷⁴ *Ibid.*, 33.

the matching of this neoliberal ideology²⁷⁵, they did not privatize to the same extent as the UK did. Although they did not to the same length as the UK, companies in France did find solace in the ideological perspective, “to end the traditional state interventionism that limited their flexibility and politicized the appointment process; to provide them with new sources of funding through the national and international financial markets; and to meet the challenges of European competition”²⁷⁶. Despite the prevalence of this frame of thought for some years through the late 80s, France maintained control of many major corporations in France, and in general France has taken a much more involved approach to their economy compared to a country such as the United Kingdom, who’s privatization effort was much more robust. This most likely is due to the role the Socialist Party played during this era of privatization, When, “the Socialist Party came back to power in 1988 with a fragile majority in the National Assembly. They enforced a policy that was then dubbed ‘neither-neither’: no privatization carried out by the previous government was overturned, by no further privatization was allowed”²⁷⁷. This marks the key different point between the UK and France. While the UK continued their privatization effort, France re-established the socialist party who – while politically weak – were not subscribers to neoliberal ideologies prevalent in the UK. What this period represented was a series of ‘blocks’ to the ideological prevalence of privatization in France.

From this analysis, one can infer that the French experience with privatization since the 80s falls in line with the perspective brought forward from Pitelis and Clarke in *The Political Economy of Privatization*²⁷⁸. The influence of ideological leadership in control of economic strategy play a much larger role in the decision to privatize State-Owned Enterprises (SOEs) in the energy sector. Thatcher’s ideological influence and strength in the UK government throughout this period was much longer than the more influential French state. Thus, “instead of the neoliberal, laissez-faire approach of a Thatcher, in which all of the shares of the company to be privatized were floated in the stock market, French privatization was a centrally controlled, highly regulated affair”²⁷⁹. This key difference, and then the 1988 return of the socialist party²⁸⁰, were the key

²⁷⁵ Schmidt, “Privatization in France,” 445.

²⁷⁶ Ibid., 449.

²⁷⁷ Berne and Pogorel, “Privitisation Experience in France,” 34.

²⁷⁸ Pitelis and Clarke, “The Political Economy of Privitytization.”

²⁷⁹ Schmidt, “Privatization in France,” 450.

²⁸⁰ Ibid., 451.

difference in the extent to which privatization occurred during this period, not free-market capitalism.

While France had a multitude of more privatization efforts that last to this day, they have yet to reach the level of which the UK obtained over the past 40 years. This experience difference highlights the divide in which these two parties have public involvement in energy security. While the UK has little to no say in the way in which their energy security operates, there is an equal argument that the French have almost too much influence on their energy security apparatus, which can be seen in their now struggling relations with nuclear energy. Overall though in, “contrast [the US and UK] the [cultural normative debate] [has] historically focused on the sale of state enterprises [...] In general terms, the French debate over privatization must be analyzed in the light of the profound cultural preoccupation with the state and its purposes – a preoccupation that is alien to British and American political cultures”²⁸¹. This dynamic is critical for assessing the trends in privatization which leads to the selling of SOEs and – in general – the energy sector. Understanding the strength, scope, and role of the French government and bureaucracy is the defining way in which privatization has occurred. As such, the strength of that French government results in, “public law norms [implicit in cultural normativity] apply to private parties. Therefore, public law values do not disappear with privatization”²⁸². Consequently, there is a clear divide between the cultural norms of government compared to the other countries in this case study; France is clearly unique in this way. Unlike the UK, there is clearly functions of the government which cannot be outsourced²⁸³. This outlook has played a legitimate role in the decision-making process in the privatization effort outlined in this section

The French civil service is not, and has not been completely immune though, “trends towards decentralization, market-oriented policies, social transformations and new norms of political leadership [does take an effect]”²⁸⁴. This effect can be seen more recently with the Sarkozy administration, yet despite changes to the civil service, and a dedication to “free-market rhetoric”²⁸⁵, did not drastically change the outlook of French involvement in SOEs. As such, once

²⁸¹ Tirard, “Privatization and Public Law Values,” 287.

²⁸² Ibid., 288.

²⁸³ Ibid., 292.

²⁸⁴ Bezes and Jeannot, *The Development and Current Features of the French Civil Service System*, 2.

²⁸⁵ “Sarkozy Set for Asset Sales to Raise Cash | Reuters.”

again – even in the arena of New Public Management²⁸⁶ – France operates on a different plane compared to the other countries in this case study. This is then inherently connected to the decision-making process in France’s energy security apparatus, and their PPP model.

6.2 THE FRENCH PPP MODEL

Overall, France has a straight-forward system when it comes to building infrastructure. Overall, France relies “on whether such contract simply (i) the performance of a ‘service public and (ii) a material part of the remuneration of the private partner based on the commercial profitability of the project, these contracts may be allocated into two main categories: public service delegation or partnership contract”²⁸⁷. Depending on the VfM, the decision is made whether to utilize public, or PPP options. With the need of the French government to begin mass-production, installation, and transition to renewable energy, there is going to be a drastic need for new infrastructure over the next 30+ years, and while France had a majority stake in companies like Ariva, and EDF, these countries ostensibly operate in the realm of nuclear energy. An area in which France could explore financing and delivering these new technologies could be found within public-private partnerships. In general, it seems that France has had some recent success with PPPs, and have avoided the pitfalls that have been suffered in the UK. In an assessment titled *The Efficiency of Public-Private Partnerships in France: An Initial Quantitative Evaluation*, it seems that, “although public private partnerships are a recent innovation in France, we were able to collect information about 30 of the 46 contracts in the operational phase as of January 1, 2012 [...] we can conclude that a very large majority of the contracts included in our sample are perceived by the public authorities as performing well”²⁸⁸. This bodes well for the PPP process in France, despite some of its cited deficiencies within the complexity of the current PPP framework²⁸⁹. Performance scores bode well for the French government, as 80% of projects utilizing a PPP model

²⁸⁶ Turhani and Shqua, “Public-Private Partnerships - For and Against,” 894.

²⁸⁷ “Public Private Partnerships in France.”

²⁸⁸ Saussier and Tra Tran, “The Efficiency of Public-Private Partnerships in France: An Initial Quantitative Evaluation.”

²⁸⁹ Werneck and Saadi, “The Public-Private Partnership Law Review: France,” 88–89.

were “somewhat satisfied at least, including 67% that were satisfied or very satisfied”²⁹⁰, and in regards to the operational phase of the projects, only 6% did not meet quality targets²⁹¹.

Overall these statistics suggest that the French government are succeeding in executing their side of the PPP dynamic, which bodes well for possible future projects. With the capacity on the side of the French government to rely on the ‘best practice’ of value for money, one can see the benefits in comparison of the UK model, which for years had an overreliance on drivers other than VfM. In the assessment of PPPs in France, the VfM was a critical component for the French government, and “80% of those questioned stated that they were somewhat satisfied at least, including 67% that were satisfied or very satisfied”²⁹² with the delivered VfM, which coincides with performance satisfaction. These statistics, matched with the fact that France has shown a willingness to utilize PPPs in energy infrastructure – albeit small projects²⁹³ – there is a strong sense that PPPs could play a role in delivering critical energy infrastructure in the transition to more renewable energy in the future.

In general, France benefits from an overall strong PPP regulatory framework, which has resulted in their satisfaction scores. This strong framework can be linked to the large role of the state in the decision-making process. Interestingly enough, France was also the country which coined the concept of “concessions”²⁹⁴ in PPP projects. Ostensibly, “the framework for the concession is set out in the law and the contract contains provisions specific to the project [...] under French law, the concessionaire has the obligation to provide continuity of services to treat all consumers equally, and to adapt the service according to changing needs”²⁹⁵. This practice can be seen in ‘best practices’ of the Canadian PPP model, and highlights the quality of contract negotiation on the part of the French government, which has contributed to the general success of PPPs in France. In addition to this concession model, France also utilizes the Build-Operate-Transfer model which relies on a “fee charges to the utility/ government rather than tariffs charges

²⁹⁰ Saussier and Tra Tran, “The Efficiency of Public-Private Partnerships in France: An Initial Quantitative Evaluation.”

²⁹¹ Ibid.

²⁹² Ibid.

²⁹³ “PPP Projects in France | Infrastructure Finance & Investment - PPP.”

²⁹⁴ “Concessions, Build-Operate-Transfer (BOT) and Design-Build-Operate (DBO) Projects | Public Private Partnership.”

²⁹⁵ Ibid.

to consumers”²⁹⁶. In addition, France also utilizes a Design-Build-Operate model, which relies on “an operating fee”²⁹⁷, which is more bulk-sum based over the fee charges inherent in the BOT model. In all situations France relies on a model which looks to hold the private corporation accountable in their finances, and in general falls in line with a more mainstream view on PPPs, which offsets the risk of the project onto the private corporation which is building and operating the asset of a period of years. In this scenario, and in these models utilized by the French government, the private sector is taking on the vast majority of the risk²⁹⁸. What this highlights is the level of which France has control over the awarding of their PPP contracts, which indicates that France has the capacity to both rely upon VfM appropriately, and also execute the length of the contract to maximize efficiency and offsetting risk. This bodes well for future projects that pass the VfM assessment process, and provides a level of confidence for French citizens in the cultural normative debate in private investment, and provides a clear roadmap for possible investing corporations.

6.3 THE PPP ENVIRONMENT IN FRANCE

Currently, one of the main issues facing France stems from, “a bet the French nuclear establishment made more than a decade ago on a new generation of reactors. The French promised that those power plants - based on a technology called E.P.R., for European pressurized reactor – would be the safest and most powerful commercial reactors ever built”²⁹⁹. Unfortunately for France, it seems that that bet did not pan out, and in addition to overrun costs, “imperfections had been discovered in the steel that Areva used to make the top and bottom caps of the main reactor vessel”³⁰⁰. This undoubtedly has had a negative effect on Areva – the company that is majority owned by the French government, and based their future upon this new generation of reactors - and the overall assessment of nuclear energy in France. This ostensibly explains the current downturn in profits that the company has been experiencing for the past few years³⁰¹. This safety issue, matched with the disaster at Fukushima, and the desire to move towards less volatile

²⁹⁶ Ibid.

²⁹⁷ Ibid.

²⁹⁸ Ibid.

²⁹⁹ Jolly and Reed, “French Nuclear Model Falters.”

³⁰⁰ Ibid.

³⁰¹ Irfan, ClimateWire, “France Loses Enthusiasm for Nuclear Power.”

renewable energy sources has resulted in a change in perception of France's dominance of nuclear energy technology and construction capacity. With the decision on the part of the French government to pass the French Energy Transition Law in August 2015, which, "sets out a roadmap to mitigate climate change and diversify the [domestic French] energy mix"³⁰², while focusing on utilizing more renewables such as solar, wind, and biomass, there is less and less of a futures market for nuclear energy. In general, this law follows through with the overall goals of the French government in regards to nuclear energy, and renewable energy, and shows a differentiating opinion on energy that France held just ten years ago when they were still planning a new wave of nuclear reactor technology. Unfortunately for them, as they struggle with the multitude of detractors aimed at nuclear energy, France will most likely suffer economically from their bet on big-nuclear energy.

France is committed to the transition towards renewable energy. As of 2015, France holds about 14.5% of their energy as renewable³⁰³, which is only slightly below the EU average, but much better than the UK³⁰⁴. With the focus on energy moving away from nuclear in France, there is a need for a major transition to renewable energy technology, which will require a large amount of new critical energy infrastructure.

France current situation with energy security is in an interesting position. As of the time of this thesis, the second round of presidential voting has just been completed. While Emmanuel Macron wants to make the, "shift toward renewables, [...] Marine Le Pen [who did well in the election] [...] supports nuclear power and wants to halt wind-turbine installation"³⁰⁵, and seemingly wants to move France in the opposite direction. Despite the fact that the majority of French citizens most likely focused on other issues when deciding who they were going to elect, the support for Macron is also a support for a more forward-thinking approach to energy. This will have a profound effect on companies such as EDF, who's entire future portfolio will be dictated by these energy security decisions³⁰⁶. Although it is difficult to predict what role PPPs will play in critical energy infrastructure under moving forward, projections show that, "besides hydropower

³⁰² "French Energy Transition Law: Global Investor Briefing," 5.

³⁰³ "European Commission - PRESS RELEASES - Press Release - Renewables: Europe on Track to Reach Its 20% Target by 2020."

³⁰⁴ "UK Ranked 24th out of 28 EU States for Renewable Energy."

³⁰⁵ "Macron May Have to Break His Campaign Promise on Nuclear Power."

³⁰⁶ Ibid.

projects, the French wind energy PPP market constitutes another opportunity in the renewable energy sector for investors”³⁰⁷. As such, from a rhetoric standpoint, there is a distinct opportunity for the PPP market in renewable energy to flourish under a Macron administration; It will depend on the VfM that PPPs can deliver in the coming years.

Overall, France benefits from a different relationship with its governance compared to the other countries in this case study. In general, their more cautious approach to privatization in the energy sector has put the country in a unique position. Their strong relationship with the government highlights a different dichotomy compared to the other nations in this case study. While the UK has completely privatized their energy sector, the French government has strong control over the direction of new energy infrastructure. It seems clear though that, “globalization and European construction induce major changes in the role of the state. In the last decades, private parties have been increasingly involved in public activities. Consequently, one may wonder whether the French specificity will live or die”³⁰⁸. With the new Macron administration, there is at least a suggestion that France will continue with a move towards renewable energies outside of nuclear power. It seems from the perspective laid out in this case study that globalization and the well-utilized concepts of privatization in the UK will continue to seep into the French system as well. Obviously, French SOEs are not as big as countries such as Norway³⁰⁹, and France continues to have a strong role in the government, but there is a need for the continuation of monitoring when it comes to these cultural normative debates on the role of government in the energy sector.

With the fact that voter turnout was historically low in the French election³¹⁰, and although the vote did go with Macron, the cultural normative debate on private involvement in the energy-national security nexus is still fluid. France is in a unique position, and they will have difficult decisions moving forward which are fundamentally different than those in the UK. With such a strong influence and ownership in nuclear energy, it will be difficult to turn policy on a dime. As such, France has a series of difficult decisions to make moving forward. These decisions will have a profound effect on the direction France goes towards in regards to critical energy infrastructure, and its role in energy, economic, and national security.

³⁰⁷ “Public Private Partnerships in France.”

³⁰⁸ Tirard, “Privatization and Public Law Values,” 304.

³⁰⁹ Büge et al., “State-Owned Enterprises in the Global Economy.”

³¹⁰ “Early Evening French Presidential Election Turnout Lower than on Past Three Occasions.”

7. SUMMARY OF RESULTS

Overall each of these countries approach public-private partnerships in critical energy infrastructure differently, but clearly there is a niche in each country where PPPs can play a role. Canada currently has the most robust relationship with PPP projects, and stands a model for countries around the world³¹¹; the US's energy infrastructure market is almost completely privatized, but new infrastructure is clearly needed³¹², and many states have PPP frameworks in place³¹³; the UK has a completely privatized energy market³¹⁴, but if there is a need for specific infrastructure, there is a possibility for PPPs to play a role; finally, France has one of the best PPP frameworks in place, and has had general success with the life-cycle of the contracts³¹⁵. Each of these countries are in different situations in regards to critical energy infrastructure due to their cultural normative debates which have driven the privatization movements over the past 50 or so years. The values that each of these countries adhere to has shaped the way in which they approach funding and building critical energy infrastructure, and as such, these decisions have a profound effect on their individual energy, and national security.

There is a clear role for PPPs to play in the new infrastructure projects, and all of these countries will need these types of contracts moving forward. Although each of these countries have different value systems which shape their approach to their political economy, they can learn from established best-practices. In each of these case studies PPPs play a different role moving forward. With the need for more infrastructure – especially with the transition to renewable energies – PPPs can play a part in either bringing more oversight and transparency to countries with higher levels of privatization, and on the flip side, they can also bring in more efficiency for formerly publically funded projects.

Without a doubt the factors that will change the shape of the role of PPPs in critical energy infrastructure will be constantly influenced by the economic ideologies of politicians that will be elected over the coming years, cost efficiency, the ever-changing energy security landscape in

³¹¹ Service Works Global in Consultation and Hellowell, “Public-Private Parnterships: What the World Can Learn From Canada.”

³¹² “Energy.”

³¹³ Werneck and Saadi, “The Public-Private Partnership Law Review,” 176.

³¹⁴ “National Infrastructure Pipeline 2016 - GOV.UK.”

³¹⁵ Saussier and Tra Tran, “The Efficiency of Public-Private Partnerships in France: An Initial Quantitative Evaluation.”

regards to supply and innovation, the security issues with foreign direct investments, critical infrastructure protection needs, and the changing cultural normative debates towards privatization.

The first factor that this thesis indicates is at play when understanding the role of PPPs in critical energy infrastructure is understanding the role of politicians directing economic policy. Political leadership moving forward will have a profound effect on the outcome of future energy projects. While the cultural normative debates are ever-changing, the election of individuals will drive economic change. A critical lesson that can be learned by the failures of PFI in the UK³¹⁶ is the lack of reliance on VfM, quantitative, and qualitative analysis by political and bureaucratic appointees can have catastrophic results fiscally³¹⁷. It is then critical for the other countries in this case study to not make the same mistakes as they look to build the next generation of critical energy infrastructure. Each country in this case study can avoid the pitfalls of PFI by utilizing many of the VfM-focused best practices of the Canadian model, and the life-cycle focus of the French system.

With the need for new critical energy infrastructure in the US³¹⁸, France³¹⁹ and within the other case studies³²⁰, finding a balance between fiscal responsibility and energy-national security nexus concerns will be critical for the future. Taking a more cautious approach to such investments is usually the correct decision, yet the large swing in economic-political ideology that has occurred in the US will certainly result in changing economic policies. As such, it is imperative that the US learns the lessons of PFI to understand the pitfalls of failing to adhere to VfM.

The second factor is the validity of private investment in energy security from a cost-effective perspective. Ostensibly this thesis found that PPPs can deliver infrastructure efficiently, and provide VfM³²¹. By delivering critical energy infrastructure efficiently, PPPs can play a positive role in helping ensure, and enhance energy security³²². As such, as long as PPPs are delivering critical energy infrastructure efficiently, then they are contributing to furthering energy security. The main issue is determining if the PPP is going to deliver infrastructure efficiently. To achieve

³¹⁶ “Private Finance Initiative: Seventeenth Report of Session 2010-2012.”

³¹⁷ “Crippling PFI Deals Leave Britain £222bn in Debt.”

³¹⁸ “Energy.”

³¹⁹ “Public Private Partnerships in France.”

³²⁰ Government of Canada, “NEB – Canada’s Energy Future 2016.”

³²¹ Moszoro, “Efficient Public-Private Partnerships.”

³²² Sovacool and Mukherjee, “Conceptualizing and Measuring Energy Security.”

that efficiency, which is implicit in progressing energy security, the PPP must obtain VfM. If they project does not achieve VfM through the quantitative analysis over the life-cycle of the project, then the parties should consider different options. As such, there is always a possibility where PPPs are not needed, and in many scenarios, it may be the case that other financing options are the best option. Understanding that PPPs are a financial tool, and not a way to hide real costs³²³ is without a doubt the only way to approach the entire PPP process.

The third factor involved in the successes and failures of PPPs is more on the qualitative end compared to the VfM quantitative analysis. Specific foreign direct investments (FDI), can pose a legitimate threat to the success or failure of a PPP contract. While specific domestic investments can pose a risk, because it is difficult to forecast what is going to occur with a specific company over a 10, 20, or 30 year period, specific FDI poses – in addition to this – another national security concern. The danger of specific FDI in the Economic and Financial Threat Domain poses a direct risk to the procurement of critical energy infrastructure. Understanding the financial and diplomatic drivers of the bid of a contract is critical to understanding the entire threat posed by such grounds in building and maintaining critical energy infrastructure³²⁴. While the ownership on the part of the government is implicit in PPPs, FDI is still a concern. Canada, the US, the UK, and France each have FDI review processes in place currently, which look at foreign direct investment in critical infrastructure or which raise national security concerns³²⁵. While each country approaches FDI review differently, ostensibly each country has strong frameworks in place to circumvent the threat that FDI can present when the investment is originating from a diplomatic-focused³²⁶ instead of purely economic source.

The fourth factor is seen through understanding the role that PPPs play in critical infrastructure protection, which is critical to the energy-national security nexus. Understanding the level of which a corporation who is a partner in the PPP process can effectively deal with the collaboration necessary to have a successful CIP model. In the ideal sense, countries can effectively implement the “network approach”³²⁷, which was previously outlined in this thesis as the ideal way to balance

³²³ Istrate and Puentes, “Moving Forward on Public Private Partnerships,” 3.

³²⁴ Wehrle and Pohl, “OECD Working Papers on International Investment: Investment Policies Related to National Security: A Survey of Country Practices,” 10.

³²⁵ *Ibid.*, 17–18.

³²⁶ Weiner, “Russian FDI in Central and Eastern European Countries,” 8.

³²⁷ Dunn-Cavelty and Suter, “Public–Private Partnerships Are No Silver Bullet.”

effective security sharing, while also allowing for the efficiency and innovation synonymous with successful PPP projects. Although this was not expanded on to a large extent through the case studies – like FDI threats – it does play a role in the overall success or failures with PPPs in critical energy infrastructure.

The final factor that plays into the successes and failures of current and future PPP contracts is the evolving cultural normative debate around privatization, and private effort in critical energy security. Much like the debate on private military corporations, investments in critical energy infrastructure falls in the same national security dilemma. The changing perspective on the validity of these private engagements is critical to national security policy, and will ultimately drive the decision-making process moving forward. It's impossible to predict the exact direction each of these countries will go in the future in regards to building critical energy infrastructure, but through understanding the core values which influence the cultural normative debate, this thesis has shown that trends can be discovered.

8. CONCLUSIONS

In conclusion, much like the debate on private military corporations, this discourse on critical energy infrastructure comes down to the level of which countries feel comfortable with privatizing national security. That comfort level has been driven by the constantly evolving cultural normative debate around private interest in governmental duties. While each of these countries have approached this debate differently due to their varying cultural values and experiences, there is a general acceptance amongst each of these countries that private investment can deliver critical energy infrastructure. Through the three main categories which looked at (1) recent history of privatization; (2) the development of the domestic PPP model; and (3) current relationships with PPPs, this thesis found that while each of these countries have different experiences, and different relations with private investment, each have found a way to balance private investment in such a way as to have a functioning energy-national security nexus. Ostensibly, the factors at play which dictate decision making processes are always more complex than at first sight, and there is always a series of events which may drastically change policy outcomes. Yet, without a doubt each of these countries, while different, are similar in their shared experiences compared to countries in other regions. This concept of understanding how countries and regions deal with private investment in regards to their energy-national security nexus can easily be expanded to other areas in the world. It would be fascinating to gain a deeper understanding of how countries such as China, India, Brazil, and Russia deal with these interdependencies. Ostensibly their cultural normative debate on this subject vary greatly from those of the countries in this case study, and there is clearly an area for future research.

Overall this thesis found that with a balance between a strong VfM quantitative analysis, and a comprehensive qualitative analysis, there is a way in which PPPs can deliver critical energy infrastructure efficiently³²⁸. Through the essential writings of Benjamin Sovacool and Ishani Mukherjee's in *Conceptualizing and Measuring Energy Security: A Synthesized approach*, this thesis found that if PPPs can deliver critical energy infrastructure efficiently, and more affordably then there is indeed an enhancement of energy security³²⁹. This debate can be linked to the greater academic field of security studies through its connection with the debate around private military

³²⁸ Moszoro, "Efficient Public-Private Partnerships."

³²⁹ Sovacool and Mukherjee, "Conceptualizing and Measuring Energy Security."

corporations. Both are limited and utilized through the changing cultural normative debate surrounding the level of private efforts acceptable in national security. While PMCs operate in the military-national security nexus, PPPs in critical energy infrastructure are a core aspect of the energy-national security nexus. As such, while this topic may be unconventional, critical energy infrastructure and private investment thereof is still within the core concept of energy security, and the greater field of security studies.

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Master Thesis Proposal
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Date: 21.09.2016

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Proposed Topic:

A US and EU Comparison on Securing Critical Infrastructure

Registered in SIS: Yes/No Date of registration: 06.07.2016

Topic Characteristics: This thesis will analyze the differences and similarities in which the United States, and the European Union secure their critical infrastructure. This thesis will take an in-depth analysis of the evolution of the definition of critical infrastructure over the past forty years in the US and EU, and how this has effected the way in which these regions prioritize the way they approach CIP. The research will utilize the case studies methodology to assess the federal policies of the US and EU member states, along with how the US, and EU have attempted to utilize Private-Public Partnerships in the face of large-scale private CI ownership. Finally this thesis will underscore the similarities and differences between the two regions approach to CIP, and highlight best practices.

Working hypotheses:

1. Hypothesis #1: Political will is imperative to building stronger Public-Private Partnerships in the current day realm of majority privately owned critical infrastructure. Without commitment from all parties involved, PPP fails.
2. Hypothesis #2: Public- Private Partnerships main adversary is the inherent disconnect in goals between public and private institutions (ie, short term profits, failures of data sharing), and the only way for PPP to be successful is to align goals to achieve well established best practices.
3. Hypothesis #3: With the deregulation and privatization of critical infrastructure through the 1980s and onwards, PPP is critical for success of securing critical infrastructure. (i.e.: Private industry cannot completely secure CI without the help of their respective governments, and vice-versa).
4. Other hypotheses: PPP is more successful on a local (or national) level due to trust built between private and public relations, while PPP struggle on the international/ multinational level due to a natural disconnect in mutual trust at such a macro level.

Methodology:

The main methodological focus will be through a series of case studies either assessing specific policies, historical examples, or a combination of the two within the framework of a qualitative approach. This research will focus on comparing events and policies between the two regions with the overall goal of understanding best practices.

This research will also be aided by interviews on EU CIP conducted through the Prague Security Studies Institute (where I am currently an intern), and – depending on availability- experts in CIP from the US (I will be in the US for part of the winter, and I may have the ability to meet with some CI experts in Arizona).

This thesis will also rely on assessing and comparing policies utilized in the EU and US, such as the President's Commission on Critical Infrastructure Protection, different directives, how the US and EU MSs spread their CIP through lead agencies, etc.

Outline:

Introduction: Explanation of the topic of critical infrastructure protection, and a short historical explanation of its evolution and role in today's security realm, along with a general introduction to the background of the topic of CIP. The introduction will also highlight the key actors (US and EU) and their broad strategies in regards to securing CI.

- Short history of CIP
- Introduction of the concept of Private Public Partnership
- Introduction of main hypothesis, and understanding the goals to building best-practices

Literature Review: Understanding the main concepts of PPP, and its historical context in CIP through the reviews and assessments of relevant journals, publications, texts, and conference papers, along with case studies of policies enacted and historically relevant contracts.

- Historical analysis of the evolution of Critical Infrastructure
- It's role in hybrid warfare-
- How the US and EU secure their CI today- such as their stated goals, and monetary investments.
- How the US and EU work with private ownership of CI- finding the distinguishing characteristics on how they deal with negotiations, and the methods in which they deal with concepts like data-sharing, and joint projects.
- Breaking down best practices in PPP—understanding what has worked in the past, and what can be replicated in the future. The goal here is to build the knowledge on best-practices for more assessment later in the concluding statements/assessment section.

Research Methodology: Running through the case studies involved in the research of PPP in CIP.

- Comparing how the US and EU MSs differ on root definitions of CI, and how this effects their stated goals.
- How does the role of the EU effect EU MSs approach to CIP
- PPP comparison in the EU and US (it'll be difficult to cover all fields of CI, so this will depend on specific interviews conducted)
- Understanding how specific regions/countries deal with CIP, along with how they deal with PPP. Looking at how some Member states have more private investment in their CI, and

how others have government run infrastructure: what led to these situations, and what is the role of PPP in these countries.

-Currently the specific case studies correlate directly with the interviews that will be conducted throughout the research. The goal is to strike a balance with these interviews along with the multitude of policies written by EU MSs and the US on a state and federal level.

(Utilizing policy analysis, interviews, etc.)

Findings: This will highlight the points found within the research through the case studies, and literature reviews.

Discussion/Assessments: This will sort out the best practices, and direction in which the US and EU need to move to find better success with PPP, and should bridge the gap of analysis to the concluding statements.

Conclusions: This will wrap up and highlight the findings/assessments found within the literature review, and the case studies.

References: Although it's hard to predict exactly what references will be utilized, some of the key background references are cited below.

Appendices: None at this juncture.

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This current list of references merely scratches the surface of the work that will need to be done to build a satisfactory thesis, and this list is by no means complete.

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