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**The Shale Revolution and U.S. Foreign Policy Goals: Approaches, Strategies and  
Limitations**

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## 1. LIST OF ABBREVIATIONS

Bcm	Billion cubic meters
Bcf/d	Billion cubic feet per day
CSIS	Centre for Strategic and International Studies
DOE	Department of Energy
EIA	U.S. Energy Information Administration
ENR	Bureau of Energy Resources
FTA	Free Trade Agreement
FERC	Federal Energy Regulatory Commission
IEA	International Energy Agency
IPE	International Political Economy
IR	International Relations
LNG	Liquefied Natural Gas
Mb/d	Million barrels per day
OPEC	Organization of the Petroleum Exporting Countries

## 2. INTRODUCTION

The twentieth century saw the United States become the world's largest consumer of energy. As the lifeblood of security, prosperity, and in many ways U.S. society, energy has featured heavily as a factor in U.S. foreign policy. Concerns regarding energy were made particularly acute as a result of a number of oil crises in the 1970s, when the image of long lines of cars queuing outside gas stations was etched into the American psyche. Energy came to be seen as a strategic vulnerability for the U.S., especially as a result of declining domestic production and ever increasing import dependency. Thus, over the last four decades energy became a crucial objective of U.S. grand strategy, helping shape political, economic, military, and diplomatic strategies. However, the last ten years has seen a remarkable transformation in the U.S. energy position. The country is now the world's largest producer of natural gas and is challenging Russia and Saudi Arabia to be the world's top crude oil producer. This transition has occurred as a result of a boom in U.S. domestic oil and gas production that has been termed the shale revolution. As a result of this massive transformation, attention has focused on the implications for U.S. foreign policy and how the U.S. can utilise its new energy abundance in its external energy relations and to advance its foreign policy goals.

The transformation in the U.S. energy position has provided it with massive economic benefits. However, the primary focus of this paper is to analyse how the shale revolution has affected U.S. energy strategies and its international agenda. Many scholars, policymakers, and commentators have argued that it provides the U.S. with enormous strategic advantages that increases its geopolitical power and allows it to better achieve its foreign policy goals.<sup>1</sup> Over the last ten years, the narrative in the U.S. has changed from one concerned with import dependency and energy scarcity, to one of abundance and opportunity. The popular media has featured headlines such as “Oil Boom Gives the U.S. a New Edge in Energy and Diplomacy” and “U.S. Strategy to Free

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<sup>1</sup> See for instance: Meghan O'Sullivan, *Windfall: How the New Energy Abundance Upends Global Politics and Strengthens American Power* (Simon & Schuster 2017); Robert Blackwill, and Meghan O'Sullivan, 'America's Energy Edge: The Geopolitical Consequences of the Shale Revolution' (2014) 93 Foreign Affairs 102; Carlos Pascual, 'The New Geopolitics of Energy' (2015) Columbia Center on Global Energy Policy.

European Energy Markets from Russia's Grip Taking Shape".<sup>2</sup> The rhetoric of policymakers regarding America's energy position has performed a U-turn in recent years, starting under the Obama administration and continuing under Trump. U.S. policymakers now talk about 'energy dominance' and an era of 'new energy realism.' The thinking behind this 'energy dominance' policy is that the drastic change in America's energy position provides it with a new toolkit in its foreign policy and a new leverage over foreign adversaries.

## 2.1 Research Puzzle

A lot of literature has focused on the close relationship between energy and foreign policy in U.S. grand strategy, particularly U.S. import dependency.<sup>3</sup> Given the dramatic change in America's energy position as a result of the shale revolution, and the varying pronouncements on the political benefits of this, it is important to understand the ways in which the U.S is seeking to capitalise on its new energy abundance. This thesis focuses specifically on the strategies adopted by U.S. policymakers in relation to oil and gas as a result of its new energy abundance. In doing so it addresses the theoretical approaches that have informed these strategies. This paper argues that the strategies employed to use the shale revolution for U.S. benefit and to advance its international agenda are restricted by a number of limitations that mitigate against their success. Bearing this in mind, the research puzzle that the paper presents is:

*Why has the U.S. not always been successful in utilising the shale revolution to advance its foreign policy goals, despite employing a number of strategies aimed at this?*

The purpose of this paper is to look at the strategies the U.S. has utilised relating to energy in order to advance its foreign policy goals and the areas where it has found success and where it has faced limitations. This is demonstrated using an empirical approach through two case studies and a theoretical framework that builds on

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<sup>2</sup> Clifford Krauss, 'Oil Boom Gives the U.S. a New Edge in Energy and Diplomacy' *The New York Times* (January 28, 2018); Collin Eaton, 'U.S. Strategy To Free European Energy Markets From Russia's Grip Taking Shape' *Houston Chronicle* (August 16, 2016).

<sup>3</sup> See for instance: Jan Kalicki, and David Goldwyn, *Energy and Security: Strategies for a World in Transition* (2nd edn, Woodrow Wilson Center Press 2013); Bruce Jones, and David Steven, *The Risk Pivot: Great Powers, International Security, and the Energy Revolution* (Brookings Institution Press 2015).

International Political Economy (IPE) approaches to energy affairs. The first case study focuses on the role of U.S. shale/tight oil in helping secure the 2015 Joint Comprehensive Plan of Action (JCPOA), more commonly known as the Iran deal. The second case study looks at European energy security, namely natural gas in Europe. These are both cited as cases where the shale revolution has played an important role in assisting with U.S. foreign policy goals and advancing its international agenda.<sup>4</sup> The case studies show that the success of the strategies adopted by the U.S. in employing energy in its foreign policy depends on the extent to which they are based on a political-economic framework. Where the strategies adopted were reflective of the divergence between realist and liberal approaches to energy relations and were too concerned with either political or economic factors, their success was limited.

The strategies employed by the U.S. in response to the shale revolution are divided into two approaches - energy leverage and energy stability. These approaches reflect the divide in the literature on international energy politics along the lines of realism and liberalism. Energy leverage “views the energy advantages presented by U.S. oil and gas production as tools that can be employed in the service of broader geopolitical or economic objectives.”<sup>5</sup> The emphasis is on maximising U.S. oil and gas production so as to increase American power and relative capabilities, and in this way we can see that it relates to realism. Under an energy stability approach, “the U.S. energy advantage should be used to enhance energy security around the world, on the theory that more stable energy markets will foster strong economies and enhance geopolitical stability.”<sup>6</sup> This is in line with a liberal understanding of energy relations. Dividing the strategies along such theoretical lines limits their effectiveness because they are unable to take account of both economic and political systems simultaneously

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<sup>4</sup> See for instance: O’Sullivan (n 1) p 121-127; Gabriel Collins, and Anna Mikulska, ‘Gas Geoeconomics in Europe: Using Strategic Investments to Promote Market Liberalization, Counterbalance Russian Revanchism, and Enhance European Energy Security’ (2018) Rice University’s Baker Institute for Public Policy Working Paper.

<sup>5</sup> Sarah Ladislav, Maren Leed, Molly A. Walton, ‘New Energy, New Geopolitics - Background Report 3: Scenarios, Strategies, and Pathways’ (2014) A Report of the CSIS Energy and National Security Program and the Harold Brown Chair in Defense Policy Studies, p 18.

<sup>6</sup> *Ibid*, p 17.

and the interaction of these in shaping energy developments. This paper builds on recent scholarship in international energy affairs that seeks to bring energy within IPE.<sup>7</sup>

## **2.2 Thesis Structure**

The paper starts by providing the key statistics that show the extent of the U.S. energy transition. Section four contains a literature review focusing on the existing theoretical explanations for international energy affairs. This focuses on the use of realism and liberalism as the primary theoretical approaches in the analysis of international energy affairs. The links between these and the energy leverage and energy stability approaches are explained. Following this, the IPE framework that is used to analyse the U.S. strategies is outlined. The next section details the specifics of the strategies utilised by the U.S., based on whether they are an energy leverage or energy stability measure. The research design and methodology section looks at the types of research to be conducted, how the analysis will be carried out, and why the case studies under study were selected. The two case studies evaluate how the U.S. strategies have played out in reality, and the areas where they have found success or where they have come up short. The final two sections contain a case studies analysis and conclusion.

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<sup>7</sup> See for instance: Caroline Kuzemko, Andrei V. Belyi, Andreas Goldthau, and Michael F. Keating (eds) *Dynamics of Energy Governance in Europe and Russia* (Palgrave Macmillan 2012); Edward Stoddard, 'Reconsidering the Ontological Foundations of International Energy Affairs: Realist Geopolitics, Market Liberalism and a Politico-Economic Alternative' (2013) 22(4) *European Security* 437; Thijs Van de Graaf, Benjamin Sovacool, Arunabha Ghosh, Florian Kern, and Michael Klare (eds), *The Palgrave Handbook of the International Political Economy of Energy* (Palgrave Macmillan 2016).



### 3. THE SHALE REVOLUTION IN CONTEXT

#### 3.1 Definitions and Statistics

The single biggest factor in America's energy transition has been the 'shale' or 'unconventional' revolution. Unconventional energy refers to methods required to extract oil and gas resources that are different to those that are considered conventional. Conventional resources are those which reside in large reservoirs and can be tapped and drained with a small number of wells (think of your typical oil or gas rig).<sup>8</sup> While there are many different types of unconventional energy, when we use the term in relation to energy in the U.S. we are primarily referring to oil and gas that is extracted from shale rock. Shale gas and tight oil are extracted from shale rock using the process of hydraulic fracturing or 'fracking' and horizontal drilling. These processes were developed throughout the second half of the twenty-century but it was around the year 2008 when a commercial onset occurred and started to have a dramatic effect on U.S. production.<sup>9</sup> Since 2008, ever increasing technological advances in unconventional oil and gas production in the U.S. has led to drastic increases in production levels and decreasing operating costs. For the purposes of this paper, the term 'shale revolution' will be used as the umbrella term to refer to the large increase in domestic oil and gas production in the U.S. over the last ten years. The term 'tight oil' is used when referring to oil produced from the U.S. shale formations and the term 'shale gas' is used for gas from these formations.

The IEA's World Energy Outlook 2017 says that the rise in U.S. production of tight oil and shale gas is set to match or exceed the largest sustained rise in production ever seen in any other country.<sup>10</sup> U.S. production of crude oil has increased from just under 5 mb/d in 2008 to 9.3 mb/d in 2017.<sup>11</sup> The EIA expects average annual U.S. production to reach 10.3 mb/d in 2018, which would surpass the highest U.S. annual

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<sup>8</sup> Meghan O'Sullivan (n 1) p 18.

<sup>9</sup> Sarah Ladislaw, Maren Leed, Molly A. Walton, 'New Energy, New Geopolitics - Background Report 1: Energy Impacts' (2014) A Report of the CSIS Energy and National Security Program and the Harold Brown Chair in Defense Policy Studies, p 6-7.

<sup>10</sup> International Energy Agency, *World Energy Outlook 2017* (OECD/IEA 2017), p 70.

<sup>11</sup> EIA, 'U.S. Field Production of Crude Oil' (2018).

average on record of 9.6 mb/d set in 1970.<sup>12</sup> As a point of comparison, in 2016 both Russia and Saudi Arabia produced an average of 10.5 mb/d of crude oil. Tight oil has been the driving force behind the increase in overall U.S. crude oil production, making up 54% of the total production in 2017.<sup>13</sup> The increase in U.S. production has meant that net imports of crude oil and petroleum products decreased from 12.5 mb/d in 2005 (60 percent of U.S. consumption) to 3.7 mb/d in 2017 (19 percent of U.S. consumption).<sup>14</sup>

U.S. increases in natural gas production as a result of shale gas have been similarly breathtaking and the U.S. is now the world's largest producer of natural gas. U.S. production has increased by almost 50 percent since 2005 from just under 50 bcf/d to 73.6 bcf/d in 2017 (slightly below the record production set in 2015). In 2005, just 6 percent of natural gas produced in the U.S. came from shale gas but by 2017 this was over 60 percent.<sup>15</sup> As a result of these increases, for the first time in 60 years the U.S. is now a net exporter of natural gas. This natural gas is exported via pipelines to Mexico and Canada, and increasingly further afield as LNG. LNG exports have increased significantly from the U.S. in the past two years as a result of two LNG export facilities coming into operation, with further projects set to come online in the next two years.<sup>16</sup>

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<sup>12</sup> EIA, *Annual Energy Outlook 2018* (EIA 2018), p 43.

<sup>13</sup> *Ibid.*

<sup>14</sup> EIA, 'U.S. Net Imports of Crude Oil and Petroleum Products' (2018).

<sup>15</sup> O'Sullivan (n 1) p 23.

<sup>16</sup> Howard Rogers, 'The Impact of US LNG Exports on the International LNG Market' in 'What's Next for U.S. Energy Policy?' (2017) 111 Oxford Energy Forum, p 23.

## 4. THEORETICAL APPROACHES TO INTERNATIONAL ENERGY AFFAIRS

This section considers the main IR approaches that are adopted in the literature relating to international energy affairs and the use of energy in foreign policy - realism and liberalism. The central positions of each theory are outlined, along with showing how they relate to the strategies of energy leverage and energy stability respectively. Further, it is shown how these theories each ignore important elements that hinder the effective study of international energy affairs and can lead to ineffective policies. Many contemporary accounts of international energy affairs and energy relations are broadly framed within either realist/geopolitical or liberal/neoliberal frameworks. Stoddard notes that the nature of these competing paradigms contributes to perceived divisions in the field of energy studies between pessimistic-realist and optimistic/rationalist-liberal accounts.<sup>17</sup> He goes on to say that such divergent approaches tend to favour either the political or economic aspects of energy affairs, and in this way privilege “either the inter-state political or transnational economic structures of the global energy system in their analyses.”<sup>18</sup>

### 4.1 Realism and Energy

At the core of the realist paradigm is the belief that international affairs is a struggle for power among self-interested states.<sup>19</sup> All realist theories regard the nature of the actors as being unitary and in anarchy.<sup>20</sup> The unitary actors established as the fundamental actors in international politics are states and anarchy exists between states as there is no central authority to enforce agreements or assist states under duress.<sup>21</sup> This system of anarchy means that states compete with each other for power and resources and this

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<sup>17</sup> Stoddard (n 7) p 437-438.

<sup>18</sup> *Ibid*, p 438.

<sup>19</sup> Stephen Walt, 'International Relations: One World, Many Theories' (1998) 110 *Foreign Policy* 29.

<sup>20</sup> Jeffrey Legro, and Andrew Moravcsik, 'Is Anybody Still a Realist?' (1999) 24(2) *International Security* 5, p 9.

<sup>21</sup> Thomas Juneau, *Squandered Opportunity: Neoclassical Realism and Iranian Foreign Policy* (Stanford University Press 2015), p 30.

competition is viewed in zero-sum terms.<sup>22</sup> Control over resources lies at the heart of realism and material resources exercise influence on state behaviour.

Much of the literature on energy politics adopts a broad realist perspective that emphasises competition for energy resources, the power that comes with their control, and the increasing use of energy as a political tool in foreign policy. Energy is increasingly seen as a competitive advantage for states and it increases the opportunities for strong energy producers to project their national interests and increase their influence.<sup>23</sup> Thus, control of resources is seen as a crucial element of the struggle for power in the international system and is a part of its zero-sum nature. Given that states are said to act in their own self-interest, countries that are powerful energy exporters view energy as a part of global power politics and are willing to utilise this in their foreign policies.<sup>24</sup>

Caiser refers to this by saying that the most dominant view in the study of energy relations reflects a vague neo-realist perspective where energy relations are seen as a crucial element in the struggle for power between states.<sup>25</sup> Factors such as the resurgence of Russia as a major energy producer in the 2000s and the neo-mercantilist approach of China helped fuel such realist accounts of energy relations. Luft and Korin argue that energy exporters are increasingly using energy to advance their foreign policy agenda and that Russia's status as a gas exporter to Europe has given it significant political leverage and weakened European economic security.<sup>26</sup> Klare argues that China's efforts to secure energy overseas could lead it into a resource conflict with the U.S. and he asserts that energy is likely to be one of the sparks for major power conflict in the future.<sup>27</sup>

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<sup>22</sup> John Baylis, Steve Smith, and Patricia Owens, *The Globalization of World Politics: An Introduction to World Politics* (6th edn, Oxford University Press 2014).

<sup>23</sup> Tom Caiser, 'Russia's Energy Leverage over the EU: Myth or Reality?' (2011) 12(4) *Perspectives on European Politics and Society* 493 p 495.

<sup>24</sup> Gal Luft and Anne Korin, *Energy Security Challenges for the 21st Century: A Reference Handbook* (Greenwood Publishing 2009), p 340.

<sup>25</sup> Caiser (n 23) p 494.

<sup>26</sup> Luft and Korin (n 24), p 335.

<sup>27</sup> Michael Klare, 'There Will Be Blood: Political Violence, Regional Warfare, and the Risk of Great-Power Conflict over Contested Energy Sources' in Gal Luft, and Anne Korin, *Energy Security Challenges for the 21st Century: A Reference Handbook* (Greenwood Publishing 2009).

#### *4.1.1 Realism and Energy Leverage*

The Centre for Strategic and International Studies (CSIS) carried out a study in 2014 of the impact of the shale revolution on geopolitics, U.S. national security, and the future strategic options available to U.S. policymakers.<sup>28</sup> A main report, along with three background reports were published. Background report three, titled *New Energy, New Geopolitics - Background Report 3: Scenarios, Strategies, and Pathways*, notes that there are two strategic pathways available to the U.S. in terms of how it incorporates the shale revolution in its energy policy and foreign policy - energy leverage and energy stability.<sup>29</sup> The energy leverage strategic pathway “views the energy advantages presented by U.S. oil and gas production as tools that can be employed in the service of broader geopolitical or economic objectives.”<sup>30</sup> Under this approach, the U.S. seeks to maximise its domestic production of oil and natural gas, and use the resulting energy supplies and its increase in material capability as tools to better achieve its international objectives and improve its geopolitical power. This strategy can manifest itself in a number of ways, such as through targeting or limiting its exports of oil and natural gas, increasing its use of economic sanctions against other energy producers, or attempting to use its new power to assert its interests in its energy diplomacy. This strategy is reflective of the realist approach to international energy relations, whereby energy is used in a way that reflects self-interest and competition.

#### *4.1.2 Limitations of Realist approaches to Energy*

Realist approaches to energy politics tend to focus on the actions of states and systemic factors such as the balance of power and the anarchical system of states. They are generally pessimistic regarding the potential for state interaction. The political intentions of the states that control energy resources are especially important, rather than resources themselves or economic considerations. While economic factors are not

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<sup>28</sup> Ladislaw *et al.* (n 9) p 2.

<sup>29</sup> Ladislaw *et al.* (n 5).

<sup>30</sup> Ladislaw *et al.* (n 5) p 18.

rejected outright by realists, they are generally seen as being inferior to state preferences such as the balance of power and national security.

There are a number of critiques that can be made against the realist approaches to energy politics. The scholars attempting to bring energy within IPE argue that realist approaches tend to focus on the access to resources and ignore the economic aspects of energy. Kuzemko *et al.* say they “centre on states as units of analysis, while ignoring the ever-growing role of transnational actors, such as national energy companies, as well as global externalities and spill-overs.”<sup>31</sup> Drawing on the study of state transformation, this brings to mind Hameiri and Jones’ criticism that realism fails to account for how states have transformed under globalisation to be more disaggregated or decentralised. This results in power and resources being distributed to a variety of social and commercial actors, and this creates internal differences that mitigate against a single national position or grand strategy.<sup>32</sup> Stoddard notes the state-centricity and overarching emphasis on interstate relations in realism and says that this can negate consideration of the interactions between political factors and the economic system.<sup>33</sup> Judge *et al* note the tendency to reduce actions in energy relations to those of the geopolitical intentions of governments. They say it must be understood that energy relations are extremely complex and multidimensional relationships and involve a number of interests and actors, not just those of the states.<sup>34</sup>

## 4.2 Liberalism and Energy

Market liberalism emphasises free trade and a market or capitalist economy as a means to peace and prosperity. Liberal approaches to energy relations look at how markets and institutions can be used to ensure energy security, strengthen cooperation and interdependence between states, and facilitate a more peaceful international environment. Liberals favour the concept of absolute gains in which state interactions

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<sup>31</sup> Kuzemko *et al* (n 7) p 2.

<sup>32</sup> Shahar Hameiri, and Lee Jones, ‘Rising Powers and State Transformation: The Case of China’ (2016) 22(1) *European Journal of International Relations* 72, p 75.

<sup>33</sup> Stoddard (n 7) p 444.

<sup>34</sup> Andrew Judge, Tomas Maltby, and Jack Sharples, ‘Challenging Reductionism in Analyses of EU-Russia Energy Relations’ (2016) 21(4) *Geopolitics* 751.

are seen as win-win and this is best achieved through a market system based on the dynamics of supply and demand. An important aspect of market liberalism relates to the pacifying effect of economic interdependence, whereby strong economic relations are said to help maintain peace as the economic costs of going to war are too high. Liberals say that there are multiple actors whose preferences shape foreign policy, rather than just states competing in the international system. However, for liberals, markets play the most important role in energy systems and create interdependence between energy producers and consumers.

The market creates interdependence between its participants through prices and mutual dependence. Price interdependence is particularly relevant in the oil market. As the oil market is global in nature, a disruption in supply in one area will affect the supply to the global market and there will be an increase in global prices. Thus, energy independence is shown to be a futile endeavour as even if a country is not importing any oil, it is still vulnerable to price spikes from supply disruptions elsewhere. Interdependence is further encouraged by the fact that energy producing and consuming states have compatible interests in that the producers benefit from stable demand for their product at a fair price, while consumers benefit from a stable supply of their energy requirements.

In assessing how the U.S. should use its new energy abundance, liberals argue it that it should be used to increase market stability and create interdependence between countries. Therefore, under a liberal approach, foreign policy will look to ensure that global markets are adequately supplied and that there is cooperation and dialogue between energy producers and suppliers. Recent literature has sought to recommend that a liberal based approach be taken by policymakers in advancing U.S. interests on the back of the shale revolution. Meghan O'Sullivan says the new energy abundance reinforces well-functioning markets and increases the confidence of countries such as China in relying on markets for their energy security (rather than taking neo-mercantilist approaches).<sup>35</sup> She argues that while the U.S. may be tempted to use its new energy

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<sup>35</sup> O'Sullivan (n 1) p 132.

instruments as tools to promote foreign policy interests, well-functioning markets probably deliver the greatest benefit.<sup>36</sup>

#### *4.2.1 Liberalism and Energy Stability*

The alternative energy approach available to the U.S. is known as energy stability. An energy stability pathway argues that “the U.S. energy advantage should be used to enhance energy security around the world, on the theory that more stable energy markets will foster strong economies and enhance geopolitical stability.”<sup>37</sup> In this way it can be seen to reflect a liberal approach to energy relations. The focus is on ensuring that U.S. production helps ensure that markets are well supplied and can function properly. By achieving this, an energy stability approach will foster economic interdependence and greater institutional cooperation, which promotes greater global stability and security. Strategies that can be adopted under an energy stability approach include promoting free trade of energy, creating multilateral sanction regimes, and promoting technology and information necessary to extract unconventional energy abroad.

#### *4.2.2 Limitations of Liberal Approaches to Energy*

Liberal accounts of energy relations tend to be more optimistic than their realist counterparts. They have a strong faith in the functioning of the market and believe in the potential of institutional cooperation to promote common good between its participants and reduce the geopolitical actions of states.<sup>38</sup> In addition, liberal approaches tend to widen the focus beyond states to also include institutions, markets, and companies. Van de Graaf *et al* note that market liberalism sees energy “as a commodity like any other” and that it believes “energy markets are best left to themselves for the invisible hand of the market to bring all its benefits to.”<sup>39</sup> However, at times this approach leads it to exhibit a low level of sensitivity to political factors and neglect the role that these play in

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<sup>36</sup> *Ibid*, p 296.

<sup>37</sup> Ladislaw *et al.* (n 5) p 17.

<sup>38</sup> Stoddard (n 7) p 445.

<sup>39</sup> Van de Graaf *et al* (n 7) p 13.



energy markets.<sup>40</sup> Kuzemko *et al.* say that “political factors that impact on interstate economic relations and on domestic and international energy policy choices are clearly insufficiently recognised by neoliberal analyses.”<sup>41</sup> One of the implications of the tendency to downplay political factors is a relative inattention to power in market approaches. The market is seen as providing mutually beneficial transactions for all parties and in this way is said to be devoid of coercive influence. Stoddard says that this can lead to claims of idealism and over-optimism against market accounts.<sup>42</sup>

Luft and Korin are critical of liberal approaches to energy politics, particularly given what they see as the reality on the ground of volatile oil prices, rising geopolitical instability, and the increased assertiveness of energy exporters and their use of energy as a strategic resource.<sup>43</sup> They believe there is a disconnect between this reality and the publicly stated policies that emphasise international cooperation and free markets. They say that liberal approaches have failed to check the emboldened postures of energy exporters, who threaten both energy and international security.

### **4.3 Political-Commercial Relations in Foreign Policy**

There has been literature that has focused on the interaction between political and economic factors in the U.S. energy system but these have mainly concentrated on the influence of private oil companies on U.S. foreign policy.<sup>44</sup> Daniel Yergin looked at the historical development of the relationship between oil companies and national security and strategy.<sup>45</sup> Ran Goel examined the relationship between U.S. oil companies and the U.S. political system and argued that the American government’s ability regarding energy policy is restricted, be it in the pursuit of environmental or security policy objectives.<sup>46</sup> However, the purpose of this paper is not to look at the

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<sup>40</sup> Stoddard (n 7) p 445.

<sup>41</sup> Kuzemko *et al.* (n 7) p 3.

<sup>42</sup> Stoddard (n 7) p 446.

<sup>43</sup> Luft and Korin (n 24) p 335.

<sup>44</sup> See for instance: Ran Goel, ‘A Bargain Born of a Paradox: The Oil Industry’s Role in American Domestic and Foreign Policy’ (2004) 9(4) *New Political Economy* 467; Daniel Yergin, *The Prize: The Epic Quest for Oil, Money, and Power* (Simon & Schuster 1991).

<sup>45</sup> Yergin (n 44).

<sup>46</sup> Goel (n 44) p 467.

influence of various groups in determining the contents of U.S. energy policy. Rather, it is to look at the policies enacted by the U.S. government that aim to capitalise on its new energy abundance and advance its international agenda, and assess the success or failure of these.

## 5. ALTERNATIVE APPROACH TO INTERNATIONAL ENERGY AFFAIRS

Accounts of international energy relations which adhere to the divide between realist and liberal approaches tend to downplay the contributions of the other, whether they be realist accounts that ignore the multiplicity of actors and the impact of economic processes, or liberal accounts that place too much emphasis on the market and neglect political factors. As noted by Susan Strange, what is needed “is some analytical framework for relating the impact of states' actions on the markets for various sources of energy, with the impact of these markets on the policies and actions, and indeed the economic development and national security of the states.”<sup>47</sup> Similarly Kuzemko *et al.* say that their approach “engages with states and markets, whilst avoiding a narrow focus on either” and “does not view states as the only, or even the dominant, actor in energy governance.”<sup>48</sup>

In this section, an approach to energy relations is presented that builds on the recent calls to bring energy back into IPE. The literature of Susan Strange, Robert Cox, Kuzemko *et al.*, and Edward Stoddard is instructive and provides the basis of the approach described here. Pascual has also argued that the dynamics between energy markets and foreign affairs must be understood in order to navigate the new issues arising at the intersection of energy and geopolitics.<sup>49</sup> Together with the limitations discussed in relation to the realist and liberal approaches to energy relations, this framework informs the empirical analysis in the case studies and allows the successes and limitations of the U.S. strategies to be identified.

### 5.1 IPE Approach to International Energy Affairs

Kuzemko *et al.*, Stoddard, and Van de Graaf *et al.* have led the effort to bring energy back within IPE, and sought to build on the older works of Strange, Cox, and Bromley. Kuzemko *et al.* note that both Strange and Bromley called for the need to move beyond

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<sup>47</sup> Susan Strange, *States and Markets* (2nd edn, Continuum 1994), p 195.

<sup>48</sup> Kuzemko *et al* (n 7) p 4-5.

<sup>49</sup> Pascual (n 1).

the artificial separation between issues of political economy and those of geopolitics.<sup>50</sup> Stoddard utilises the insights of Cox and Strange to postulate a framework for the analysis of international energy affairs and this forms the basis of the framework used in this paper. Both Stoddard and Kuzemko *et al.* each outline similar frameworks, and these are relevant for the analysis in this paper. These are: (i) the need to consider both political and economic factors in the case of energy; (ii) the range of actors and the source of power under investigation; and (iii) an understanding of the state, interstate, and transnational interests in analysing energy affairs.

### *5.1.1 A Political-Economic Approach*

Susan Strange called for any analytical framework of energy affairs to involve both the actions of states on energy markets, and also the impact that markets have on state policies and actions.<sup>51</sup> As an international commodity, energy is closely related to the dynamics of markets. However, it is also a strategic asset that is of crucial importance to the functioning of states, notably their prosperity and security. In this way it is also a matter of political importance. Therefore, any analysis of energy affairs needs to consider both of these elements, without privileging one over the other. By doing this, we can properly analyse the impact of both markets and politics on energy policies and assess their strengths and weaknesses. Pascual recognises the importance of understanding the two-way interaction between politics and markets in determining how the strategic power of energy can be utilised in foreign policy.<sup>52</sup> He says that “strong national policies require us to understand how nations might influence energy markets and how radical change in energy markets affects the national interests of countries.”<sup>53</sup>

### *5.1.2 Multiplicity of Actors in Energy System*

An IPE approach to energy affairs addresses a broad range of actors. States are not viewed as the only or dominant actors. Van de Graaf *et al.* explain that the energy

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<sup>50</sup> Kuzemko *et al.* (n 7) p 1.

<sup>51</sup> Strange (n 47).

<sup>52</sup> Pascual (n 1) p 5.

<sup>53</sup> *Ibid*, p 3.

system is driven by a huge range of actors and institutions, from governments, to multilateral organisations such as the IEA, to non-state actors such as businesses and NGOs concerned with energy.<sup>54</sup> Cox's analysis of Strange's approach to power and actors in IPE is useful here in developing our analysis.<sup>55</sup> Cox notes that Strange considered herself a realist, but not in the traditional sense of realism where there is a state-centred view of the world.<sup>56</sup> Rather, Strange saw power as the basic concern of realism. This meant deciding where power lay and then asking who benefits. One of the reasons Strange adopted this viewpoint was that she considered the world as beginning to resemble the international order of the Middle Ages rather than the Westphalian system. Under such an order, cities, regions, and businesses all had their own power outside the authority of the state and could influence outcomes. Applying this to international energy relations, any framework of analysis needs to look at who holds power among the multiplicity of actors. By identifying where power lies, it is possible to show who has influence in the energy system and how this affects the other actors.

### *5.1.3 Levels of Analysis*

Stoddard says that as international energy affairs occur at the intersection of the transnational economy and the interstate system, their analysis needs to be able to operate at a number of levels.<sup>57</sup> This builds on Strange's analysis which said that the "concentration on international organizations and on the politics of international economic relations has tended to let inter-governmental relations overshadow the equally important transnational relations."<sup>58</sup> By concentrating on interstate relations, an analysis could forego some of the most important actions occurring in the political economy. In the case of energy affairs, by considering the relationships between states, supra-state, and non-state actors, a more complete understanding of international energy relations and the impact of energy policies on each actor is achieved.

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<sup>54</sup> Van de Graaf *et al.* (n 7) p 47.

<sup>55</sup> Robert Cox, 'Take Six Eggs: Theory, Finance, and the Real Economy in the Work of Susan Strange' in Robert Cox, with Timothy Sinclair, *Approaches to World Order* (Cambridge University Press 1996).

<sup>56</sup> *Ibid*, p 183.

<sup>57</sup> Stoddard (n 7) p 450.

<sup>58</sup> Strange (n 47) p 21.

## 6. U.S. ENERGY STRATEGIES AND THE SHALE REVOLUTION

The shale revolution and the resulting emergence of the U.S. as a major energy producer and exporter has presented the U.S with a powerful new leverage to advance its agenda globally.<sup>59</sup> The question that arises is how the U.S. has sought to advance this new power. This section will look at the energy leverage and energy stability approaches the U.S. government has sought to use in order to advance its international agenda. Three policy areas/strategies addressed under each approach are analysed: energy trade, sanctions, and energy diplomacy. These approaches are subsequently analysed in each of the two case studies.

### 6.1 Scope and Context

The shale revolution has occurred over the last decade, meaning that President Obama was the first to have this new power in his toolkit. Obama's administration sought to recognise the benefits provided by the new energy abundance, particularly the new strength it gave the U.S. relative to other nations and the ability it provided to assist U.S. allies. At the same, this administration was concerned with balancing these advantages against being a leader in the climate change battle. Boersma notes that with the transition to the Trump administration, while the rhetoric and tone has become more forceful, the contours of the policy approach has broadly continued in relation to oil and gas production and exports.<sup>60</sup> However, the concern regarding balancing these with the need to address climate change has been dropped. Trump talks about 'energy dominance' and 'unleashing' U.S. energy on the world. However, Obama put in place much of the framework to allow this to occur, such as streamlining the export approval process for LNG and lifting the crude oil export ban in 2015.<sup>61</sup>

The Bureau of Energy Resources (ENR) was created in 2012 by then Secretary of State, Hillary Clinton, as a response to the burgeoning energy production. Energy

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<sup>59</sup> Tim Boersma, and Corey Johnson, 'U.S. Energy Diplomacy' (2018) Columbia Center on Global Energy Policy, p 5.

<sup>60</sup> *Ibid*, p 10.

<sup>61</sup> *Ibid*.

was recognised as an important global issue and one in which the U.S. needed to develop coherent policy responses and diplomatic strategies in light of their new energy position. The ENR's role is described as leading the "Department of State's efforts to forge international energy policy, strengthen U.S. and global energy security, and respond to energy challenges around the world that threaten U.S. economic policy or national security."<sup>62</sup> Further, the shale revolution has led several important policymakers to elaborate on how energy resources can be utilised in diplomatic efforts. In October 2012, Hillary Clinton noted that she "will be sending policy guidance to every U.S. embassy worldwide, instructing them to elevate their reporting on energy issues."<sup>63</sup> Tom Donilon, President Obama's national security advisor argued in 2013 that the shale revolution allowed the U.S. to negotiate with other countries from a position of greater strength and that the U.S. should help other countries to increase their energy supply.<sup>64</sup>

## **6.2 Energy Leverage Strategies**

### *6.2.1 Energy Trade and Energy Leverage*

An energy leverage policy in trade involves using energy trade in a protectionist, exploitative, or bilateral manner. Assertive policies that seek to enhance the relative power of a country are utilised. Among the possible ways in which the U.S could seek to leverage its energy trade are: starving markets, restricting exports, or selective exports.

Countries that are dominant energy suppliers can seek to use their dominance and the nature of energy as a strategic good as a means to exploit countries that are dependent on it for energy. They may seek to starve markets of energy in order to obtain strategic interests or politically-motivated outcomes. The classic example cited for this kind of behaviour is Russia and its supply of natural gas to countries in Europe. The gas disputes between Russia and Ukraine in 2006 and 2009, and the resulting supply disruptions in Europe, are often said to have been politically motivated as a

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<sup>62</sup> U.S. Department of State, 'Bureau of Energy Resources' (June 2018).

<sup>63</sup> Hillary Clinton, 'Clinton In GU Speech: Energy Diplomacy Crucial For America' (October 18, 2012).

<sup>64</sup> Tom Donilon, 'Remarks by Tom Donilon, National Security Advisor to the President, at the Launch of Columbia University's Center on Global Energy Policy' (2013).

Russian response to the pro-Western government in Ukraine.<sup>65</sup> A tactic that is more accessible for the U.S. is to restrict exports. Realist approaches to trade emphasise protectionism as a means to maximise wealth, independence and power. Rather than seeking to support global markets, the U.S. could utilise all of its energy production domestically (energy independence). This would reduce the economic burden of importing oil to the U.S. and increase its relative material capabilities.

A third energy leverage option that is most accessible to U.S. policymakers is to use targeted energy exports to support allies and weaken foes. This is particularly relevant for Europe, which is heavily dependent on gas exports from Russia. The U.S. can seek to use its increased LNG exports as a means to reduce Russian dominance in European energy markets. European energy security and diversifying Europe's energy supply has long been a top U.S. foreign policy objective.<sup>66</sup> From a trade point of view, the primary way in which this can be achieved is through targeted trade agreements and investments in the Europe energy infrastructure.

### *6.2.2 Limitations to the Energy Leverage Approach to Energy Trade*

Given that the U.S. does not yet exert energy dominance over any strategic rivals through its energy exports, the tactic of starving markets is not currently within its arsenal. In terms of restricting exports, the shale revolution has brought the politically enticing prospect of energy independence closer, particularly in relation to natural gas. However, in a global market a policy of energy independence does not make sense. Even if the U.S. did not import any oil from abroad it would still be vulnerable to supply disruptions or demand spikes elsewhere that cause price to increase. A restriction of natural gas exports would negate the benefits that accrues from creating a more integrated and global gas network. As was noted by the U.S. security advisory board: "U.S. energy independence is a myth... Even if oil and gas production growth enables

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<sup>65</sup> O'Sullivan (n 1).

<sup>66</sup> David L. Goldwyn, 'Importing Energy, Exporting Jobs. Can it be reversed?: How Natural Gas Exports Can Spur Manufacturing, Create Jobs and Increase U.S. Global Influence' (March 25, 2014) Testimony before the U.S. Senate Committee on Energy & Natural Resources.



the United States to supply more of its own energy needs, global market and geopolitical trends will affect U.S. prices and the economies of our trading partners.”<sup>67</sup>

While U.S. policymakers may be able to promote the targeted trade of oil and gas through particular regulations and investment decisions, there is still a clear limit on the extent to which they can control energy trade. In a liberalized, global market, the ability of political actors to control trade flows and investment decisions can be quite limited. The idea that simply being able to use the increase in production in a strategic way that is in U.S. interests ignores economic realities, and the variety of actors that control economic decisions.

### *6.2.3 Sanctions and Energy Leverage*

Sanctions are primarily a coercive form of foreign policy that involve using economic might to advance international goals. They are one of the primary instruments through which states can seek to utilise energy in their foreign policy. Generally, the purpose of sanctions is to penalize countries or enforce changes in a target states’ behaviour in a way that satisfies the interests of the country imposing the sanctions. Sanctions play a critical role in the toolkit of U.S. foreign policy, especially in a world where military force is difficult to deploy and U.S. powers of persuasion are waning.

Pascual’s ‘rules of six’ propose a framework for assessing the tools available to countries seeking to intervene in energy markets for reasons of national interests.<sup>68</sup> The two options for energy market intervention that relate to sanctions are blocking exports and constraining production.<sup>69</sup> Pascual says that “interventions to block exports manifest themselves as sanctions on a country’s exports in order to deny that country markets and revenue.”<sup>70</sup> An important factor in implementing such a tactic is the market scale of the producer that is the target of sanctions. Generally, the smaller the producer the easier it is to block their exports as their supply is not absolutely essential for market stability. Alternatively, some suppliers are so large that blocking their production would

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<sup>67</sup> U.S. International Security Advisory Board, *Report on Energy Geopolitics: Challenges and Opportunities* (2014), p 1.

<sup>68</sup> Pascual (n 1).

<sup>69</sup> *Ibid*, p 11.

<sup>70</sup> *Ibid*.

not be feasible as it would be hugely complicated and lead to market instability. In such cases sanctions that aim to constrain future production are used instead. These sanctions block investment and trade in order to limit future growth.

#### *6.2.4 Limitations to the Energy Leverage Approach to Sanctions*

The U.S. faces limitations in its ability to use sanctions to advance its international agenda and a number of market factors are important here. First, given that U.S. imports of crude oil and natural gas have significantly decreased, its ability to use unilateral sanctions that target energy have significantly decreased. Second, as U.S. policymakers do not directly control U.S. production of oil and natural gas, its ability to utilise them in sanctions is limited. For example, policymakers cannot turn on the taps and increase production at short notice in the same way as Saudi Arabia can. Rather, policymakers can use the increasing levels of U.S. production through energy diplomacy (which relates to an energy stability approach). Finally, governments must assess the impact of possible sanctions on their national businesses and whether the sanctions will benefit the country and its commercial interests, and not just be for domestic political gain.<sup>71</sup>

#### *6.2.5 Energy Diplomacy and Energy Leverage*

The shale revolution provides a number of instruments for the U.S. to advance its foreign policy interests, particularly by providing U.S. diplomats with a powerful new narrative in their negotiations with other foreign officials.<sup>72</sup> An energy leverage approach to energy diplomacy includes using America's energy advantage and its energy exports to assist allies, bring countries into its sphere of influence, and push back against foes. In this way, it can be used to strengthen the U.S. balance of power and promote U.S. interests. European energy security and its dependence on Russian gas supply has featured heavily in U.S. diplomacy in this regard. U.S. diplomats have sought to convince their European counterparts that U.S. LNG exports will be available to European countries and that they should buy these to diversify their supply.

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<sup>71</sup> *Ibid*, p 13.

<sup>72</sup> Boersma and Johnson (n 59) p 6.

### *6.2.6 Limitations to the Energy Leverage Approach to Energy Diplomacy*

Boersma and Johnson note that “politically motivated calls for supply diversity are easy to make, but complicated to realise.”<sup>73</sup> One issue with successfully using this approach is that diplomatic objectives can be overwhelmed by market realities. Decisions about when and where energy is sold are dictated by U.S. companies and the main motivating factor for them is price. These private companies are more likely to sell their supply in locations where they can get a higher price and make a greater profit. This limits the extent to which U.S. diplomats can direct energy resources to match their political objectives. Further, the market reality in the country that is the target of the diplomatic effort also influences the decision whether to diversify supply or not. Private companies are often responsible for decisions regarding where they secure their energy supply from and they will choose the most cost effective supplier.

## **6.3 Energy Stability Strategies**

### *6.3.1 Energy Trade and Energy Stability*

An energy stability approach to energy trade broadly involves the protection and promotion of free trade with regards to energy, reflecting market liberal principles.<sup>74</sup> Under such an approach, the U.S. uses its increase in production to improve market liquidity either through exports or displacement, thus ensuring greater market stability.

The OPEC oil embargo in 1973 led the U.S. to ban exports of crude oil for forty years (save for some limited exceptions). However, the improved energy position of the U.S. as a result of the shale revolution provided the catalyst for the lifting of the ban in December 2015. The lifting of the export ban allows U.S. production to be sold abroad and exports of crude oil have consistently increased since it was lifted.<sup>75</sup> The primary implication of lifting of the ban for U.S. foreign policy is that it does away with the misconceived policy of energy independence, it gives the U.S. a new role in mitigating

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<sup>73</sup> Boersma and Johnson (n 59) p 16.

<sup>74</sup> Ladislaw *et al.* (n 5) p 18.

<sup>75</sup> The latest data from the EIA shows U.S. exports of crude oil averaging over 2 mb/d at the end of May 2018. EIA, ‘4 Week Average U.S. Exports of Crude Oil’ (June 24, 2018).

price volatility, and it removes a policy that was inconsistent with the general U.S. position in favour of free trade.<sup>76</sup>

U.S. trade policy in relation to natural gas has also undergone significant change in recent years. The massive increase in production lowered U.S. gas markets prices and producers increasingly sought to export natural gas as LNG to markets in Asia and Europe where prices were higher. While the U.S. government does not control where natural gas is sold, it does control how fast producers can connect to outside markets through its LNG export permitting process. Approval for countries which have FTAs with the U.S. is basically automatic but for non-FTA countries it is a much more cumbersome process that requires a positive national interest approval from the Department of Energy (DOE) and the Federal Energy Regulatory Commission (FERC). The non-FTA approval process steadily improved in recent years and has become more streamlined, particularly since the Obama administration was convinced that LNG exports were in the national interest and wouldn't lead to a rise in domestic U.S. gas prices.<sup>77</sup>

The U.S. is now one of the leading LNG exporters in the world and is a driving force behind the changing nature of gas markets and the diminishing power of traditional powers that have sought to politicise gas trade through pipelines such as Russia. The growing diversity of natural gas suppliers and the changing nature of the natural gas market to become more global has enhanced the stability of gas supplies for importing countries and helped depoliticize such imports. The U.S can use LNG exports to adopt an energy stability approach that focuses on increasing global supply and further integrating gas markets to become more global.

### *6.3.2 Limitations to the Energy Stability Approach to Energy Trade*

There is a risk that political or other factors that inhibit free trade or restrict the production or supply of energy are ignored under an energy stability approach. First, the ability of the U.S. exporters to export to international markets depends on government regulation. For instance, government regulations banned the export of crude oil from the

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<sup>76</sup> Jeff Colgan, and Thijs Van de Graaf, 'A Crude Reversal: The Political Economy Of The United States Crude Oil Export Policy' (2016) Energy Research & Social Science, p 5.

<sup>77</sup> Rogers (n 16) p 23.

lower-48 up until December 2015 and the LNG export approval process for non-FTA countries was much more cumbersome up until 2014/2015. Further, the ability of the U.S. to improve global energy security is currently being constrained by its own energy infrastructure. While tight oil and shale gas is being produced at record levels, pipeline and refinery capacity constraints are currently preventing that supply from reaching markets. Rick Perry, U.S. Secretary of Energy recently noted the need to continue to expand domestic transmission infrastructure.<sup>78</sup> Recent developments have also shown the limited ability of U.S. tight oil supply to control oil prices in the face of geopolitical tensions. OPEC's production cut, plunging supply from Venezuela, the withdrawal from the Iran nuclear deal (the JCPOA), and a supply outage in Libya, all helped to raise oil prices to three-and-a-half year highs in early July. Finally, political opposition under the Trump administration to free trade is a risk to an energy stability approach to energy trade. Rather, this administration prefers bilateral trade deals that enhance U.S. power.

### *6.3.3 Sanctions and Energy Stability*

Sanctions are generally a coercive form of foreign policy and are associated with energy leverage as they seek to remove supply from the market. However two factors that determine the success of sanction regimes are related to an energy stability approach: coalitions and the ability to sustain. Given that the U.S. now imports significantly less crude oil and virtually no natural gas, its ability to influence foreign policy outcomes through unilateral sanctions is more limited. Rather, in today's globalised economy, multilateral sanction regimes that incorporate a number of large importers are much more effective. If a tactic to block exports is to be successful, other major importers from the sanctioned producer must also cooperate.<sup>79</sup> Likewise if production constraints are to succeed then there must be some compliance from financial entities that can block resources and technology to the sanctioned country.

The ability to sustain relates to whether countries can sustain any intervention for a sufficient amount of time in order for it to have a significant impact. If interventions are

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<sup>78</sup> Rick Perry, 'True Energy Independence is Finally Within our Grasp' *CNBC Commentary* (July 29, 2018).

<sup>79</sup> Pascual (n 1) p 12.

seen as being for the short term they are unlikely to have a major strategic impact. The new energy abundance is said to allow the U.S. to better implement sanctions against countries that are major energy producers as it allows it to build multilateral sanction regimes and use the increase in production to help replace any lost supply, and thus mitigate the risk of an increase in energy prices.

#### *6.3.4 Limitations to the Energy Stability Approach to Sanctions*

While multilateral sanction regimes may be more effective in achieving the desired foreign policy outcomes, and the shale revolution helps to better sustain such sanction regimes by improving market stability, political factors must also be considered. Multilateral sanction regimes often will not be possible given political divides between international actors. The key for creating such sanction regimes is to effectively utilise diplomacy to create some common ground on which parties with a variety of interests agree. The shale revolution certainly helps in creating common interests in sanctions relating to energy, but it will not always be successful in doing so.

#### *6.3.5 Energy Diplomacy and Energy Stability*

The U.S. can seek to use energy diplomacy in a way that is consistent with the energy stability approach by encouraging production of unconventional energy abroad. The thinking behind this is that by increasing unconventional energy in other countries, you increase their energy diversity, increase global supply in energy markets, and diminish the power of producers who use energy as a political tool. The *U.S.-China Shale Gas Resource Initiative* was announced in 2009. This initiative promised an assessment of China's shale deposits and a program to provide the Chinese with information about how to develop and manage such resources.<sup>80</sup> This initiative was extended to a much broader range of countries through the *Global Shale Gas Initiative* and the *Unconventional Gas Technical Engagement Program*. The U.S. government uses these initiatives to share technical knowledge and work with other countries to talk about the

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<sup>80</sup> O'Sullivan (n 1) p 139.

regulatory, environmental, and financing aspects of shale production. Until now this program has not been an overwhelming success in terms of energy production.

The ability of U.S. officials to gain support for their sanction regimes is another aspect of the energy stability approach to energy diplomacy. One reason for the perceived failure of sanctions as effective foreign policy tools is that they are frequently unilateral. It is very difficult for one country to isolate another from the world economy on its own. However, U.S. officials can point to continual increases in U.S. energy production and the impact this has had on lowering energy market prices in their interactions with foreign officials. In turn, this makes it easier to create multilateral sanction regimes, which increase the chances that sanctions will be effective.

The shale revolution also provides U.S. trade negotiators with new instruments in negotiating free trade agreements, particularly regarding the potential of LNG exports. As LNG exports are permitted automatically for any country that has a FTA with the U.S., there is an added incentive for countries that are concerned about energy security or political coercion through energy to conclude FTAs with the U.S. Of course, the U.S. commitment to FTAs and free trade in general has diminished under the Trump administration. However, as U.S. LNG exports continually increase in the years ahead, its ability to use this instrument in trade negotiations will remain.

#### *6.3.6 Limitations to the Energy Stability Approach to Energy Diplomacy*

The success of U.S. policies to export the shale revolution abroad are limited by a number of obstacles. First, political and civil opposition in recipient countries to such programs must be considered. A number of European countries have banned shale energy production as it is associated with bad environmental practices. Second, rather than being seen as programs that are in the interests of the recipient country, they are viewed as vehicles to promote U.S. businesses abroad, particularly as U.S. embassies in foreign countries have helped promote U.S. private companies with expertise in shale energy production. Finally, the Trump administration has shown itself to favour bilateral trade deals that are concerned with increasing U.S. relative power, rather than benefiting the energy market. In this way, energy diplomacy is more likely to reflect a realist approach rather than a market-liberal one.

## 7. RESEARCH DESIGN AND METHODOLOGY

There has been much rhetoric regarding how the shale revolution can be leveraged by the U.S. to its advantage, particularly in advancing its international agenda. However there has been relatively little attention focused on developing an understanding of the strategies available to the U.S. that capitalise on the shale revolution and developing a theoretical framework that explains how best it can be utilised and where its limitations lie. The research in this paper has both an empirical and a theoretical aim that seeks to address these issues. First, the empirical objective is to examine the strategies employed by the U.S. in its external energy relations, the approach they reflect, and then evaluate whether these have been successful in advancing U.S. foreign policy interests. From a theoretical standpoint, the objective is to develop a political-economic framework useful for the analysis of U.S. energy strategies. The research seeks to build on recent attempts to bring the study of energy back into IPE such as Kuzemko *et al* and Stoddard. In this way, the research is aimed at theory development in line with the “building blocks” research procedure identified by George and Bennett.<sup>81</sup>

In order to achieve these research objectives, a multi-method research design is used that involves qualitative analysis through process tracing and cross-case comparison. Given the complexity of interactions that take place in the energy system, particularly between economic and political actors, process-tracing is well suited to examining the causal impact of the strategies adopted on the U.S. foreign policy goals. By adopting a cross-case comparison approach it is possible to identify how the same strategies have been applied in different cases where the U.S. wished to use its new energy abundance as a means of advancing its international agenda. This allows us to see any consistencies in how U.S. policies have changed as a result of the shale revolution and to assess their respective levels of success. The mixed method approach is favoured by George and Bennett: “there is a growing consensus that the strongest

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<sup>81</sup> Alexander George, and Andrew Bennett, *Case Studies and Theory Development in the Social Sciences* (MIT Press 2004).



means of drawing inferences from case studies is the use of a combination of within-case analysis and cross-case comparisons within a single study or research program.”<sup>82</sup>

The energy leverage and energy stability approaches are the independent variables. Each of these approaches has a defined dependent objective in mind in terms of its impact on U.S. foreign policy, which is the dependent variable. The independent variables are analysed in each case to see whether they were effective in achieving the stated foreign policy objective. The various strategies adopted under the energy leverage and energy stability approaches serve as the intervening variables. The IPE framework outlined earlier in the paper is then used to analyse the variance in the variables and the outcomes. The limitations in these approaches are described by breaking down the barriers between economic and political analysis. This allows us to identify the failures in each specific approach and enables a more policy-relevant explanatory account that helps with future improvements.

A number of factors were considered in making the case selections in this research. First, it was crucial that there was a link between energy and the foreign policy objective in each case. Without this, there would be no role for the shale revolution. Secondly, the cases had to involve some link to the shale revolution, in terms of occurring in the period since the shale revolution began in 2008 and opening up new possibilities or strategies which had not previously been available to U.S. administrations. Thirdly, at least some (if not all) the strategies/policy instruments that are available under each of the energy approaches had to be present in some form in each case. Thus, cases were assessed based on how they related to energy trade, sanctions, and energy diplomacy. Finally, the case studies had to serve to highlight the theoretical divide between realist and liberal approaches to international energy affairs and how a political-economic framework of analysis is better suited for developing effective energy related policies.

Given these considerations, the cases selected for analysis are the the JCPOA and the case of natural gas in Europe. These are both cases where energy has played an important role and the U.S. has sought to utilise its new energy abundance in

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<sup>82</sup> *Ibid*, p 50.

advancing its wider U.S. foreign policy objectives. Both cases took place after the shale revolution started in 2008. There is a link to both energy aspects of the shale revolution in terms of the JCPOA being related to oil and the European case involving natural gas. Also, in both cases attempts have been made to utilise each of the three policy instruments, whether that be in a way that reflects an energy leverage or energy stability approach, or both. It is important to also note that there are a range of other factors in each case that influence the foreign policy outcome. However, for the purpose of this research, the focus will primarily be on the energy aspect of each case and assessing whether and how the strategies enabled by shale revolution influenced the outcome.

As the research involves a cross case comparison, it was important to ask the same questions in each case in order to ensure comparable data was obtained. This was achieved by analysing each case from the point of view of the energy leverage and energy stability approaches and the three policy instruments available under each of these approaches. Each strategy is then evaluated on the basis of whether it assisted in advancing the foreign policy goal in each case, with the results being compared across both cases to show the success and limitations of each approach. This thesis relied on a documentary data collection strategy, with data gained from both primary and secondary resources. Primary resources included statistical data from energy organisations such as the IEA and EIA, energy company reports, official U.S. government documentation and reports including committee testimonies, speeches by U.S. government officials, and interviews conducted by media agencies with policymakers. Secondary sources were also relied upon to first get a lay of the land in the research, and then to help form the framework and argument adopted in the paper, as well as helping analyse the primary sources and the actions of government officials.

## 8. CASE STUDIES

### 8.1 The Shale Revolution and the Joint Comprehensive Plan of Action

#### 8.1.1 Case Overview

During the 1990s and 2000s, concerns grew within the U.S. and the wider international community regarding Iran's nuclear intentions and its pursuit of a nuclear weapon. Attention turned to ways to bring Iran to the negotiating table for a discussion of its nuclear program and preclude it from gaining a nuclear weapon. From the mid-2000s the U.S. sought to prevent private businesses from doing business with Iran by imposing sanctions on trade, investment, and financial transactions. The purpose of this was to create economic hardship and internal unrest in Iran that would force it to negotiate with the international community. However, in order to be effective, any sanction regime would need to target the Iranian oil sector. Oil is the backbone of Iran's economy, making up 50-60% of its government revenue in 2011.<sup>83</sup> According to the EIA, Iran holds the world's fourth largest crude oil reserves and in 2011 it was exporting 2.5 mb/d.<sup>84</sup> This made it the third largest exporter in the world at the time.<sup>85</sup> At the start of 2012, with exports at 2.4 mb/d and the price of oil at roughly \$100, Iran's revenue from oil exports was \$7.2 billion per month.<sup>86</sup>

During the 1990s, previous attempts by the U.S. to create multilateral sanction regimes had failed as the U.S. was unable to convince others that the benefits of the multilateral sanctions outweighed the costs.<sup>87</sup> Given the tight oil market and high prices that existed in the 2000s and early 2010s, the idea of sanctioning Iranian oil supplies seemed unlikely as global market would not be able to cope with the loss of such an important supply source and prices would rise even further. However, in late 2011 and early 2012, the United States and the EU imposed sanctions targeting Iran's oil exports.

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<sup>83</sup> EIA, 'Sanctions Reduced Iran's Oil Exports and Revenues in 2012' (2013).

<sup>84</sup> EIA, 'Country Analysis Brief: Iran' (2018).

<sup>85</sup> Thijs Van de Graaf, 'The "Oil Weapon" Reversed? Sanctions Against Iran and U.S.-EU Structural Power' (2013) 20(3) Middle East Policy 145.

<sup>86</sup> Pascual (n 1) p 14.

<sup>87</sup> O'Sullivan (n 1) p 123.

Among other measures, the sanctions banned Iranian oil imports to the EU and denied other countries and entities importing crude oil from Iran access to U.S. and European financial markets.<sup>88</sup> Crucially, the U.S. was also successful in convincing Iran's major oil importers to join the sanctions regime and reduce their exports in line with this.

The oil sanctions proved to be extremely effective in reducing Iranian oil exports and slashing its revenue. Iran's net oil export revenue dropped from \$95 billion in 2011 to \$69 billion in 2012.<sup>89</sup> Iran's oil and natural gas revenue was down to \$33.6 billion in fiscal year 2015-2016, before rising back up to \$57.4 billion in 2016-2017 following the implementation of the JCPOA.<sup>90</sup> At their peak, the sanctions took 1.4 mb/d of Iranian oil off international markets.<sup>91</sup> Pascual notes that given its need for high oil revenue to balance its budget, it became vital for Iran to return to international oil and capital markets and that this inevitably contributed to its willingness to conclude the JCPOA to limit its nuclear program in return for sanctions relief.<sup>92</sup> Several policymakers and scholars cite the additional energy from the shale revolution as playing a key role in the JCPOA.<sup>93</sup>

### *8.1.2 Energy Leverage Approach to Iran*

The strategies adopted by the U.S. in relation to energy and Iran did not primarily reflect an energy leverage approach. This is surprising given that the Iran nuclear case appeared to contain the classic conditions for a political realist, encompassing core security priorities such as the survival of the state from an adversarial and illiberal enemy.<sup>94</sup> In terms of energy trade, the ability of the U.S. to use its own production/exports in a competitive, targeted way was limited. Given that Iran was one of the world's largest oil producers and did not rely on the U.S. as a source of oil or gas

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<sup>88</sup> Pascual (n 1) p 14.

<sup>89</sup> EIA (n 84).

<sup>90</sup> EIA (n 84) p 1.

<sup>91</sup> Pascual (n 1) p 14-15.

<sup>92</sup> *Ibid*, p 15.

<sup>93</sup> O'Sullivan (n 1); Boersma and Johnson (n 59): Tom Donilon, 'A Review Of The "Asia Rebalance" And A Preview Of The President's Trip To The Region: A Conversation With Thomas E. Donilon' (March 6, 2014) The Brookings Institution, p 45 - 48.

<sup>94</sup> Liam Hunt, 'The Anchor of the System: The Iran Deal and the Decline of Realism in US Foreign Policy' (2017) 72(3) *International Journal* 318, p 319-320.

supply, the option of starving Iran of supply was not on the table. Nor was the U.S. able to use oil exports to target Iran or directly assist countries that were reliant on Iranian supplies as the U.S. export ban on crude oil was still in place at the time. The ban curtailed the ability of the U.S. to export to countries that were looking to replace lost supply from Iran.

The ability to use an energy leverage approach in relation to sanctions was relatively limited. Employing unilateral sanctions on the part of the U.S. would have been entirely ineffective given that the U.S. did not import any Iranian oil itself. In order for any sanction regime against Iranian oil exports to be successful, it would have to involve a multilateral sanction regime that included the primary importers of Iran's oil.

Diplomacy played a key part the JCPOA agreement, particularly in relation to energy. However, U.S. energy diplomacy in this case relied on a multilateral approach that focused on a broad range of political actors in the international system. The energy diplomacy used did not reflect an energy leverage approach as it was not used in a bilateral manner.

### *8.1.3 Energy Stability Approach to Iran*

In what appears to be a departure from the traditional approach in U.S. foreign policy in favour of realist principles, the signing of the JCPOA and its attendant events are more reflective of the principles of liberal institutionalism.<sup>95</sup> Hunt notes that a number of liberal factors were important such as “international cooperation between states, accrument of absolute gains, and institutional (rather than domestic) actors being central to the decision-making process.”<sup>96</sup> This liberal approach is also evident in the way the U.S. utilised its new energy abundance in the case.

First, while the U.S. approach to energy trade was still curtailed by the crude oil export ban (which was a protectionist measure and against the principle of free trade inherent in the energy stability approach), the increase in production in the U.S. was at least able to help global markets through displacement. U.S. import dependency was continually decreasing meaning that supplies normally bound for the U.S. could be sold

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<sup>95</sup> *Ibid*, p 319.

<sup>96</sup> *Ibid*.

elsewhere, helping the general liquidity in the global oil market. This increase in supply in the U.S. and the displacement effect on global markets was also a crucial factor in the sanctions and energy diplomacy strategies.

The shale revolution was a crucial factor in constructing the multilateral sanction regime that was imposed against Iran's oil exports and helping sustain this regime in a tight oil market. Given that Iran was not an energy superpower like Russia or Saudi Arabia, the U.S. could impose a sanction regime that blocked Iranian exports rather than simply seeking to curtail production (although this was also a part of the overall sanction regime against the Iranian oil sector). However, in order for the U.S. led sanction regime to be successful it would have to involve the main importers of Iranian oil such as China (22%), the EU (18%), India (13%), Japan (14%), and South Korea (10%).<sup>97</sup> The shale revolution helped to change the fear among these countries that any reduction in oil supplies would spark an oil price spike. Although it was for reasons completely unrelated to the sanctions against Iran oil and led by private companies that were following market factors rather than political ones, the shale revolution added 1 mb/d to global supplies in 2012 and was crucial in convincing Iran's major oil importers to participate in the sanctions regime and reduce their imports of Iranian oil. Tom Donilon noted that the economic conditions at the time were not favourable to imposing economic sanctions against Iran.<sup>98</sup> Oil markets were tight and the world was just recovering from the financial crisis. However, Donilon said that the fact the U.S. had increased its own production by 1 mb/d was a crucial factor in deciding to go ahead with the Iranian sanctions.<sup>99</sup> Every major importer of Iranian oil reduced their imports by 15-20%.<sup>100</sup>

The energy diplomacy strategy also demonstrates that an energy stability approach was adopted. As mentioned, in order for sanctions against Iran's oil to be successful they would have to involve a coalition of its most important importers. U.S. diplomats undertook to convince these countries that they would be vulnerable if they

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<sup>97</sup> Datablog, 'Iran Oil Exports: Where do they go?' *The Guardian* (February 6, 2012).

<sup>98</sup> Donilon (n 93).

<sup>99</sup> *Ibid.*

<sup>100</sup> Pascual (n 1) p 14.

continued to import Iranian oil and that they would be able to reduce their imports of Iran's oil without the risk of a price spike. A key message for these diplomats was to point to the continuous increases in U.S. oil production as a result of the shale revolution and the upward trajectory of this phenomenon. They argued that the increase in U.S. supply would offset for any Iranian oil that came off the market. Also crucial in this regard were diplomatic efforts with Saudi Arabia. U.S. officials pointed to public statements by Saudi ministers that they would tap their spare capacity to help make up for any lost Iranian supply.<sup>101</sup> Richard Nephew, the lead sanctions expert in the U.S. team negotiating the Iran nuclear deal said that during the negotiations they did not anticipate that oil from the shale revolution would be used to help the market offset the losses from Iran, but that when this did happen they were able to use it to make it easier for others to swallow Iran sanctions. Nephew says that this is the benefit from the shale revolution in terms of sanctions in that it adds to global supplies and makes it less likely that oil shortfalls from sanctions will be damaging.<sup>102</sup>

## **8.2 The Shale Revolution and Natural Gas in Europe**

### *8.2.1 Case Overview*

It is generally recognised that as a commodity, natural gas is more susceptible to being used as a political tool than oil.<sup>103</sup> Van de Graaf and Colgan say that Russia's 'energy weapon' refers to its ability to "turn off gas supplies to Ukraine or other countries dependent on Russian gas in order to pile pressure on the targeted country and defend the interests of Moscow."<sup>104</sup> They note that the gas wars with Ukraine in 2006 and 2009 are often interpreted as a political response to show Russian opposition to the Orange

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<sup>101</sup> O'Sullivan (n 1) p 124.

<sup>102</sup> Columbia Energy Exchange, 'Richard Nephew - Economic Sanctions: Lessons from an Insider' (December 18, 2017) Columbia Center for Global Energy Policy.

<sup>103</sup> Meghan O'Sullivan, 'The Entanglement of Energy, Grand Strategy, and International Security' in Andreas Goldthau (ed) *The Handbook of Global Energy Policy* (Wiley-Blackwell 2013), p 38.

<sup>104</sup> Thijs Van de Graaf, and Jeff Colgan, 'Russian Gas Games or Well-Oiled Conflict? Energy Security and the 2014 Ukraine Crisis' (2017) 24 *Energy Research and Social Science* 59, p 61.

Revolution and moves by George Bush to make Georgia and Ukraine NATO members.<sup>105</sup>

As an important U.S. ally, European energy security and its dependence on Russia as a natural gas supplier has long been discussed in Washington.<sup>106</sup> A key concern for U.S. foreign policy is improving European energy and political security by diversifying its energy dependence on Russia. This became particularly relevant after the expansion of the EU in 2004 and 2007, when a number of states joined that were significantly more dependent on Russia for their natural gas supplies than countries in Western Europe. The Russian gas disputes with Ukraine, the resulting gas disruptions in Europe, and the Crimea annexation in 2014 also increased concerns regarding European energy security and its vulnerability to Russia. The EU has not been totally inactive in trying to solve this issue itself and has been attempting to counteract this influence through strategies such as “market liberalisation and integration, strengthening the legislative and regulatory framework, supporting market functioning, and supply diversification.”<sup>107</sup> While the market liberalisation and integration efforts have found some success, efforts at supply diversification have produced underwhelming results. Despite repeated political calls to reduce European dependence on Russian supply, in 2017 Gazprom exported a record volume of natural gas to Europe.<sup>108</sup> For a number of years Washington has been concerned with assisting Europe in its diversification efforts. The shale revolution and the growing level of natural gas exports from the U.S. as LNG opens up new possibilities for the U.S. goal of diversifying Europe’s energy supplies.

Despite recognition in Europe that countries need to diversify their gas supplies, many have not been able to diversify away from Russian supply and capitalise on rising global gas supplies. Europe is currently importing 70% of its gas needs.<sup>109</sup> The Russian

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<sup>105</sup> *Ibid.*

<sup>106</sup> Boersma and Johnson (n 59) say that this concern regarding Russian dominance in the European energy sector goes back to the Reagan administration.

<sup>107</sup> Boersma and Johnson (n 59) p 15.

<sup>108</sup> Tim Boersma, Tatian Mitrova, Akos Losz, ‘A Changing Global Gas Order 2.0’ (2018) Columbia Center on Global Energy Policy, p 8.

<sup>109</sup> European Commission, ‘EU-U.S. Joint Statement of 25 July: European Union imports of U.S. Liquefied Natural Gas (LNG) are on the rise’ (August 2018).



share of European gas imports in 2016 and 2017 was 39.5% and 37% respectively, making it the largest supplier of natural gas to the EU.<sup>110</sup> Questions of supply and diversification will become even more pressing as European domestic natural gas production is set to decrease significantly over the coming years.

### *8.2.2 Energy Leverage and Natural Gas in Europe*

There have been repeated claims from both the Obama and Trump administrations that America's new energy abundance could be used to assist its allies in Europe and reduce their dependence on Russian natural gas, thereby reducing the political threat associated with this. This has primarily focused on the potential for U.S. LNG exports to replace Russian gas in Europe.

Energy trade forms a huge aspect of the strategy to leverage U.S. LNG in a way that assists European allies. The Russian-Ukrainian conflict in 2014, along with the perception that Russia was increasingly using its energy to advance its geopolitical interests, led to greater interest and calls in the U.S. to utilise its new energy abundance to counteract this threat. There had been fears regarding the potential for natural gas exports to increase U.S. domestic gas prices but this concern was dispelled by a study commissioned by the U.S. Department of Energy that looked at whether or not natural gas exports were in the national interest.<sup>111</sup> The study found that increases in domestic natural gas prices would be limited under varying scenarios for natural gas exports.

Following this report, President Obama set about promoting U.S. exports of LNG, particularly by streamlining the approval process for exports of U.S. LNG to non-FTA countries (see the Appendix I for a list of countries that the U.S. has an FTA in force with). The first LNG cargo was exported from the U.S. in February 2016 and exports have consistently risen since this as more export facilities come online. The increase in U.S. LNG exports has been surrounded by political rhetoric saying that U.S. LNG is being targeted at helping Europe diversify its energy supply. Amos Hochstein, the U.S. special envoy and coordinator for international energy affairs under Barack Obama said in 2016 that U.S. LNG exports to Europe would be used to offset the influence of a

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<sup>110</sup> Eurostat, 'EU Imports of Energy Products - Recent Developments' (April 2018).

<sup>111</sup> NERA Economic Consulting, 'Macroeconomic Impacts of LNG Exports from the United States' (2012).

newly aggressive Russia.<sup>112</sup> Current Energy Secretary Rick Perry recently said: “Russia has enjoyed near-monopoly status as the main supplier of natural gas to our European allies, and wielded that power as a means of political coercion. Simply stated, the United States wants to help our partners increase their energy security by increasing the diversity.”<sup>113</sup> A recent joint statement by European Commission President Juncker and President Trump agreed to strengthen EU-U.S. strategic cooperation with respect to energy by increasing EU imports of U.S. LNG.<sup>114</sup> The statement notes that the EU would import LNG from the U.S. to diversify its energy supply and increase its energy security, and that the EU and the U.S. would work together to facilitate greater trade in LNG.<sup>115</sup>

The same joint statement from the EU-U.S. meeting also says that “the increasing gas production in the U.S. and the start of U.S. liquefied natural gas exports to the EU in 2016 have improved the security of gas supply in Europe.”<sup>116</sup> However, a closer look at the figures raises questions about the extent of this claims. In 2017, the U.S. was the sixth largest LNG exporter to the EU, with 4% of Europe’s LNG coming from the U.S (Qatar, the largest supplier, supplied 41%).<sup>117</sup> That the U.S. only supplied 4% of Europe’s LNG imports is even less impressive given that total LNG imports made up only 14% of Europe’s total gas imports in 2017. Since LNG exports from the U.S. started in February 2016, 10.4% of total U.S. LNG exports went to 9 European countries including Turkey (see Appendix II for breakdown of where U.S. LNG exports go).<sup>118</sup> Thus, despite the political rhetoric and attempts to promote and increase LNG trade between the U.S. and the EU in order to diversify European reliance on Russian gas, U.S. LNG is not reaching Europe in massive quantities and Russia still remains the dominant gas supplier in Europe.

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<sup>112</sup> Eaton (n 2).

<sup>113</sup> Perry (n 78).

<sup>114</sup> European Commission (n 109).

<sup>115</sup> *Ibid.*

<sup>116</sup> *Ibid.*

<sup>117</sup> European Commission, ‘Quarterly Report on European Gas Markets’ 10(4) Directorate-General for Energy, Market Observatory for Energy, p 16.

<sup>118</sup> U.S. Department of Energy, ‘LNG Monthly (YTD - through May 2018)’ (2018).

In terms of sanctions, the U.S. has imposed sanctions that have targeted the Russian energy sector in recent years, notably in response to the Crimea/Ukraine crisis and Russian meddling in the 2016 election. Rather than seeking to block exports like in the sanctions on Iran, the sanctions are aimed at constraining production capacity by targeting the future expansion of the oil and gas industry in Russia. While some of these sanction regimes have been multilateral and constructed in conjunction with the EU, the U.S. also acted alone in recent unilateral sanctions it imposed in August 2017 that are targeted against companies supporting or investing in Russia's energy infrastructure. These sanctions reflect broad US opposition to the Nord Stream 2 gas pipeline but were not implemented against this project as the sanctions do not apply if the projects and agreements were initiated before August 2017, which was the case with Nord Stream 2. Despite the sanctions that have been imposed in recent years, it would appear that the ability to use the shale revolution as leverage for greater sanctions against Russia has not been a game changer. The fact that Europe is so dependent on Russian supplies reduces the potential for the U.S. to leverage the shale revolution.

Along with energy trade, the other major area where an energy leverage approach has been adopted is in energy diplomacy. As mentioned, both the Obama and Trump administration made repeated statements regarding the power that the new energy abundance provides to America, particularly in assisting allies. Energy diplomacy is a core part of this strategy. U.S. diplomats in Europe have sought to convince their counterparts of the need to diversify Europe's energy supply. The main narrative specifically enabled by the shale revolution has involved the promotion of U.S. LNG exports in European countries. However, as the statistics indicated above show, U.S. LNG volumes in Europe have been relatively low and not had a major impact on the European gas market yet. In addition to this, U.S. diplomats have also sought to help Europe with its efforts to liberalise and further integrate its gas market. This has involved promoting the building and leasing of LNG equipment in countries that are heavily reliant on Russia as a gas supplier such as in Poland and Lithuania. For example, prior to the renting of a floating storage regasification unit (FSRU) in Lithuania in 2014 it imported all its natural gas from Gazprom. This FSRU has mainly imported

gas from Norway but it has also two received shipments from the U.S., showing the potential for U.S. supply.

### *8.2.3 Energy Stability and Natural Gas in Europe*

The energy leverage approach focuses on using U.S. LNG in a targeted way through trade and diplomacy to reduce European reliance on Russian gas supply. In contrast, the energy stability approach involves using the shale revolution in a cooperative manner that reduces Russian market share and political leverage through promoting free trade, greater market liberalisation, and knowledge sharing.

Rather than seeking to use its LNG exports in a way that targets the European market specifically, under an energy stability approach the U.S. would focus on using its LNG as a means of driving further integration and liberalisation of global gas markets. Unlike oil which operates in a global market, currently there are three primary markets for natural gas - North America, Europe, and Asia. Increasing LNG exports from the U.S., along with increasing global LNG supply from other suppliers such as Australia and Qatar, has led to gas markets becoming more global as the supply is more liquid and can be moved from one location to the other more easily. The separation of the markets based on continental regions has been driven by the fact that supply was traditionally delivered via pipeline to each region and couldn't move between them. The LNG market changes this dynamic. Further, simply by increasing the level of supply on the global gas market, LNG helps to increase competition in gas markets and drive down prices. Russia has suffered particularly as a result of this by having to remove its long-term oil-indexed price contracts that it traditionally used in Europe, decreasing its revenue from gas exports. However, the shale revolution has played a key role in the removal of such oil-indexed contracts. This is because the abundance of natural gas in the U.S. led to a major decrease in spot prices on the Henry Hub gas market in the U.S. This created a situation where Russia was fearful of potentially losing market share in Europe to lower priced U.S. LNG unless it changed its pricing structures and agreements. Further, while U.S. LNG may not be flowing directly to Europe, its mere potential to flow in the case of disruption adds another new element to the Europe-Russia relationship that increases European energy security.

U.S. diplomats have been involved in significant energy diplomacy in Europe in recent years, where they have been seeking to support European efforts on supply diversification and market liberalisation. A particularly important strategy from an energy stability point of view has involved promoting the benefits of shale gas development in Europe. Programs such as the *Global Shale Gas Initiative*, subsequently known as the *Unconventional Gas Technical Engagement Program*, have provided inter-government advice and technical assistance regarding shale gas development. In the early years there were great hopes for a number of European countries regarding their potential for shale gas production, particularly in Eastern European countries such as Poland and Ukraine that were heavily dependent on Russia. However, the initial optimism has faded in recent years due to various factors. Geological issues made the extraction more complicated than initially expected. Further, there was extensive political and environmental opposition that constrained the projects. The criticism was also made that these projects were merely efforts to promote American companies abroad, rather than being in the interests of the targeted states. As a result, the volume of energy produced under this initiatives has not been substantial.

## 9. CASE ANALYSIS

In this section, the primary results and observations from the two case studies are described. Following this, these results and observations are analysed using the IPE framework outlined in section five. The energy approaches and strategies adopted are considered in light of this framework in order to analyse the areas where they found success and where they were limited. This allows us to better understand how the U.S. can best use the shale revolution in order to achieve its foreign policy goals and where it faces difficulties.

### 9.1 Results and Observations

In the first case study the foreign policy goal was broadly achieved. The JCPOA was agreed between the P5+1, and this was regarded as being a strong step in preventing Iran from obtaining a nuclear weapon. The energy approach adopted by the U.S. in utilising the shale revolution reflected an energy stability approach and was a factor in bringing about the conditions for the JCPOA. Crucially, this approach also reflected elements of the IPE framework and it is argued that this increased its effectiveness.

In the second case study, the foreign policy goal has not been achieved. European reliance on Russian gas supply and its supply diversity has not changed in recent years despite a number of efforts by Washington to achieve this. The U.S. has primarily adopted an energy leverage approach in the strategies it has utilised to achieve this goal but these have not been effective. Energy stability approaches have been utilised less but also produced underwhelming results. It is argued that in this case the strategies adopted did not reflect the IPE framework.

### 9.2 Political-Economic Approach

The IPE frameworks for the analysis of energy affairs put forward by the likes of Strange, Kuzemko *et al.*, and Stoddard call for a political-economic approach, where there is proper consideration of both the actions of states on energy markets, and also the impact that markets have on state policies and actions. There has to be a proper

understanding of how the economic and political processes interact in order to craft effective policies.

### *9.2.1 The Shale Revolution and the Joint Comprehensive Plan of Action*

The energy stability approach adopted by the U.S. in utilising the shale revolution in relation to Iran demonstrated many elements that reflected such a political-economic approach. First, not only did the U.S. consider the impact that blocking Iran from oil markets would have on Iran's economy and politics, but it also considered the risk that this action would have on the oil market and prices. Accordingly, the U.S. planned for the impact of price rises in the market resulting from blocking Iranian supply. The U.S. utilised its increasing oil production, as well as Saudi spare capacity and helping Iraq increase its own production, to reassure states that were fearful of price spikes. In this way, the U.S. was wary of the impact of its actions on the oil market, and also the way the oil market could respond to negate this impact. This was especially important given the tight oil market and high prices that already existed at the time. There was further consideration given to both politics and the market by inserting an insurance policy in the sanctions legislation that said the U.S. president could lift the sanctions if they were having an undue influence on prices in the market. Again, this helped reassure other countries that were worried about the sanctions leading to price spikes and impacting their economies at a time when they were weak.

### *9.2.2 The Shale Revolution and Natural Gas in Europe*

The U.S. approach to the issue of European energy security and reliance on Russian gas supply has involved political rhetoric suggesting U.S. LNG will be used to directly assist the European allies and solve this issue. The recent announcement from the EU-U.S. summit further suggests that the U.S. sees the potential for U.S. LNG exports to help European gas diversity. However, this approach ignores the fact that policymakers cannot dictate trade. Decisions in Europe regarding choice of gas supplier are generally made by private companies acting in their own commercial interests. The clearest example of this is in relation to Nord Stream 2. Despite political opposition from the EU and the U.S., a consortium of five private companies from four different

European countries has teamed up with Russian gas supplier Gazprom to build a pipeline from Russia to Germany that will further increase European reliance on Russian gas supplies. The fact that Russian gas is cheaper to import than U.S. LNG - after fees for liquifying, transporting, and regasifying U.S. LNG are added on - means that Russian gas has a competitive price advantage over U.S. LNG in Europe. Second, the U.S. companies that control LNG exports are also driven by commercial interests. They sell their LNG to countries where demand for U.S. LNG is highest and it makes economic sense to sell to. Thus, the statistics show that over 40% of U.S. LNG goes to Asia where prices are higher and there is significant demand from China, which is seeking to move away from coal.

The utilisation rates of European LNG regasification facilities shows the limitations of the energy leverage approach. 23 regasification exist in Europe for the import of LNG and in 2016 their utilization rates were less than 20%. This reflects the low rate of LNG imports into Europe in recent years, despite the political calls that LNG was a game-changer for the European gas market. Many of the regasification facilities were supported by the EU, showing the political motivation for such infrastructure.

In terms of the energy stability approach to gas diversity in Europe, the U.S. approach of promoting unconventional energy production in Europe failed to consider the political and environmental opposition. This was an important factor in the ultimate failure of these initiatives to produce substantial volumes of gas. By not factoring in political opposition to such initiatives and purely focusing on the extent to which they could benefit the market, these initiatives failed to deliver their expected benefits.

### **9.3 Multiplicity of Actors**

There are a huge range of actors within the energy system, ranging from states, to private corporations, to international organisations. When analysing international energy affairs it is vital to take account of its multiplicity of actors and their power and influence.

#### *9.3.1 The Shale Revolution and the Joint Comprehensive Plan of Action*

In the first case study we see that the sanction regimes imposed against Iran were multilateral, involving Iran's most important energy importers. The sanctions also



targeted private businesses and financial institutions. In this way, the sanction regime involved state and non-state actors. Further, given that the UN had imposed sanctions on Iran targeting its nuclear program, and the International Atomic Energy Agency (IAEA) was also involved, there were a huge range of political and market actors involved. The shale revolution played an important role in creating this multilateral environment by providing the U.S. government with an opportunity to target Iran's oil industry and allowing it to build support across multiple actors for this through its energy diplomacy. Therefore, in utilising its new energy abundance the U.S. recognised that it needed to be used to build support among states, the market, and international organisations.

### *9.3.2 The Shale Revolution and Natural Gas in Europe*

Under the energy leverage approach to European energy security, the multiplicity of actors and where power lies is being ignored. As mentioned several times, the shale revolution is driven by private companies operating in relatively open markets. The shale producers have most of the power in terms of how much energy is produced and where it is sold. The energy leverage approach fails to recognise this and instead sees U.S. policymakers as being able to direct U.S. trade to assist allies in Europe. Further, the rhetoric of U.S. policymakers suggests that its agreements with the EU will lead to increases in EU-U.S. LNG trade. Donald Trump recently commented that the "EU will be a massive buyer of U.S." under the trade framework laid out.<sup>119</sup> However, this fails to recognise that the EU is not responsible for buying LNG in Europe and that this is decided by private gas companies.

## **9.4 Level of Analysis**

As international energy affairs occur at the intersection of the transnational economy and the interstate system, their analysis needs to be able to operate at a number of levels.<sup>120</sup> Any IPE approach to energy affairs must consider transnational relations, as

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<sup>119</sup> Allison Good, 'Despite US-EU Pledge, LNG Shipments to Europe are at Mercy of Market Conditions' *S&P Global: Market Intelligence* (July 26, 2018).

<sup>120</sup> Stoddard (n 7) p 450.

well as those between states. It is useful here to also draw on Hameiri and Jones' critique of IR's neglect of state transformation, which says that IR has overlooked that contemporary states are increasingly fragmented and decentralised and that sub-state actors are increasingly pursuing their own agendas overseas.<sup>121</sup>

#### *9.4.1 The Shale Revolution and the Joint Comprehensive Plan of Action*

Again, we see this aspect of the IPE framework being utilised in relation to Iran. U.S. policymakers recognised that they didn't control the level of production of tight oil. Instead this was controlled by private companies operating at a national and transnational level based on factors such as the market price. Accordingly, while the U.S. government was limited in the extent to which it control the level of production, they could utilise the benefit of this in their diplomacy and sanctions. Further by targeting banking and financial institutions, and also the shipping insurance market, a number of transnational economic actors were targeted and these were effective in isolating Iran's economy from global markets. While this factor is not directly related to the shale revolution, it indicates an approach that is cognisant of the commercial and transnational relationships that exist in a globalised economy and the power of these.

#### *9.4.2 The Shale Revolution and Natural Gas in Europe*

The U.S. is now a net exporter of natural gas and its rate of LNG exports are increasing year-on-year as more export facilities come online. Despite this transformation in the U.S. energy position and the desire on both sides of the Atlantic to improve European energy security by reducing its reliance on Russian gas, U.S. LNG has so far not been able to exert much influence through trade or diplomacy. Rather, transnational interactions continue to have the upper hand in the European energy system. Again, Nord Stream is the best example of this. Despite significant opposition at the governmental level in the form of the EU and the U.S., Nord Stream 2 continues to progress and is expected to start delivering gas by the end of 2019.

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<sup>121</sup> Shahar Hameiri, and Lee Jones, 'Rising powers and state transformation: The case of China' (2016) 22(1) *European Journal of International Relations* 72, p 73.

## 10. CONCLUSION

The shale revolution has transformed the U.S. energy position to one of energy abundance. There is no doubt that the U.S. is now more energy secure in terms of the traditional definition of energy security than at any point in the past few decades. The purpose of this paper has been to focus on the impact the shale revolution has had on U.S. approaches to international energy affairs and how it has sought to utilise its new energy abundance in advancing its foreign policy goals. This involved looking at the approaches, strategies, and policy instruments available to U.S. policymakers and analysing where they found success and where they faced limitations. In doing this, the theoretical basis of each of these approaches is described, and it is argued that an IPE framework is best suited for evaluating their success and failings.

The case studies show that where policymakers adopted an approach that was more reflective of the principles of the IPE framework, the foreign policy objective was easier to achieve. In the Iran case, many of the strategies adopted under the energy stability approach gave due consideration to political and economic factors, the range of actors, and the various levels of interactions that take place in the energy system. On the other hand, both the energy leverage and energy stability approaches adopted in the case of natural gas in Europe have been too state-centric or market-focused. Each approach privileged one of these factors without consideration of the other. Hence, the attempts to improve European gas diversity in recent years have not been successful. Unless policymakers understand the need to adopt an all-encompassing framework, their attempts to utilise the shale revolution to advance their international agenda will flounder. With the shale revolution, U.S. understanding of how and when to best advance its new found power will be vital to helping advance its international interests in the choppy geopolitical waters ahead.

An interesting area for further research could be analysing the extent to which the dominant milieu in a state or region influences the energy approaches adopted. The focus in this paper was primarily on the strategies adopted by the U.S. and the impact these have had in helping with U.S. foreign policy goals. There is not much consideration given to the political environment in which the various approaches were

adopted or to the relative milieu goals that were dominant. Another particular area of interest to follow in the future is the impact of LNG on the global gas market and the extent to which it transforms gas markets to become more integrated. Will gas ever become a global market like oil? If the U.S. does wish to reduce the political influence that Russia has in Europe through its energy, the best course of action would appear to be supporting efforts to promote the liberalisation of the European gas market so that it becomes more competitive, with a greater diversity of suppliers, and a greater level of investment. The natural gas abundance in the U.S. and its increasing ability to export greater volumes of LNG can support this by adding to global supplies, making the market more integrated, and lowering global prices. This would be a further interesting area of research.

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## APPENDIX I

### U.S. FTA Agreement Countries

The United States has free trade agreements in force with 20 countries. These are:

- Australia
- Bahrain
- Canada
- Chile
- Colombia
- Costa Rica
- Dominican Republic
- El Salvador
- Guatemala
- Honduras
- Israel
- Jordan
- Korea
- Mexico
- Morocco
- Nicaragua
- Oman
- Panama
- Peru
- Singapore

## APPENDIX II

### U.S. Exports of Domestically Produced LNG

(Cumulative starting from February 2016 through May 2018)

Region	Volume Exported (Bcf)	Percentage Receipts of Total Volume Exported (%)	Number of Countries Per Receiving Region
<b>East Asia and Pacific</b>	534	40.8%	5
<b>Europe and Central Asia</b>	136.3	10.4%	9
<b>Latin America and the Caribbean</b>	421.2	32.2%	9
<b>Middle East and North Africa</b>	137.8	10.5%	5
<b>South Asia</b>	78.8	6.0%	2
<b>Sub-Saharan Africa</b>	0.0	0.0%	0
<b>Total LNG Exports</b>	<b>1308.3</b>	<b>100.00%</b>	<b>30</b>

*Source: US Department of Energy*