

# The Geopolitics of Natural Gas

Political Economy of Shale Gas in Argentina

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JAMES A. BAKER III INSTITUTE FOR PUBLIC POLICY  
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# POLITICAL ECONOMY OF SHALE GAS IN ARGENTINA

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## ABOUT THE STUDY

Some of the most dramatic energy developments of recent years have been in the realm of natural gas. Huge quantities of unconventional U.S. shale gas are now commercially viable, changing the strategic picture for the United States by making it self-sufficient in natural gas for the foreseeable future. This development alone has reverberated throughout the globe, causing shifts in patterns of trade and leading other countries in Europe and Asia to explore their own shale gas potential. Such developments are putting pressure on longstanding arrangements, such as oil-linked gas contracts and the separate nature of North American, European, and Asian gas markets, and may lead to strategic shifts, such as the weakening of Russia's dominance in the European gas market.

Against this backdrop, the Center for Energy Studies of Rice University's Baker Institute and the Belfer Center for Science and International Affairs of Harvard University's Kennedy School launched a two-year study on the geopolitical implications of natural gas. The project brought together experts from academia and industry to explore the potential for new quantities of conventional and unconventional natural gas reaching global markets in the years ahead. The effort drew on more than 15 country experts of producer and consumer countries who assessed the prospects for gas consumption and production in the country in question, based on anticipated political, economic, and policy trends. Building on these case studies, the project formulated different scenarios and used the Rice World Gas Trade Model to assess the cumulative impact of country-specific changes on the global gas market and geopolitics more broadly.

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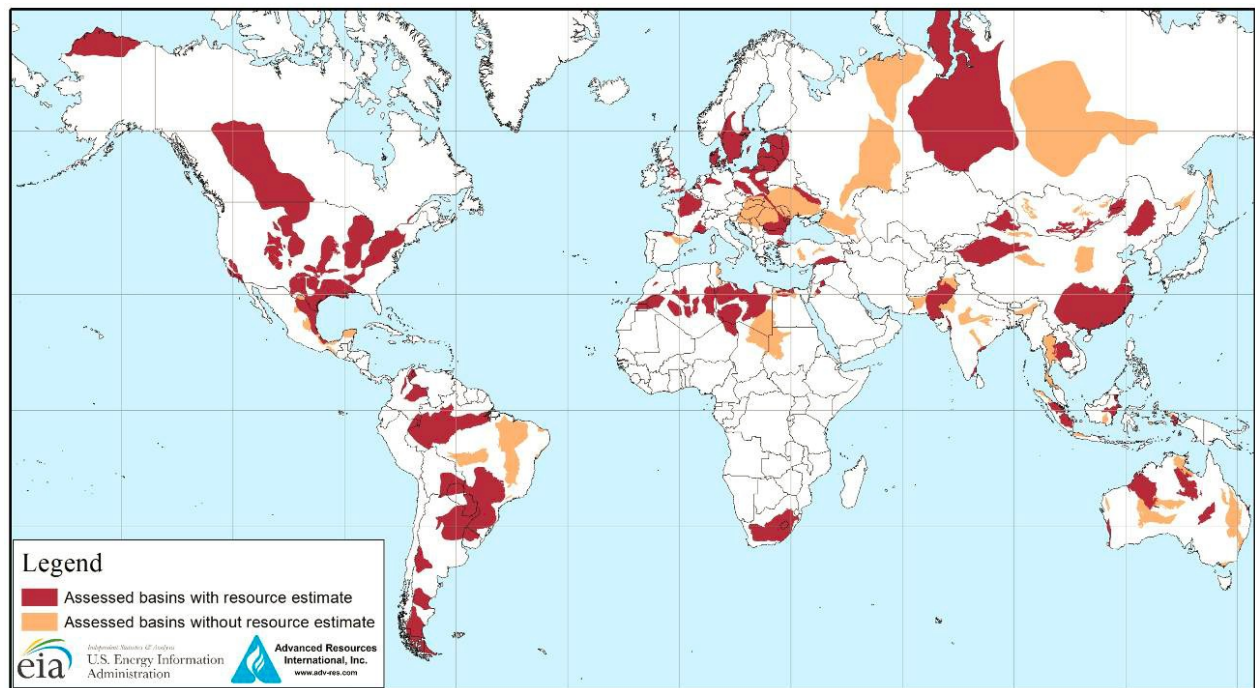
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## Introduction

With the third largest shale gas reserves (802 trillion cubic feet of technically recoverable gas, behind China),<sup>1</sup> as well as a developed domestic gas market and export infrastructure, Argentina is a potentially important player in the global gas market. Not only has the country been in the past a major supplier of natural gas to neighboring Chile, Uruguay, Brazil, and Bolivia, but also, its domestic use is significant enough that it has become an important importer of natural gas via pipeline from Bolivia and built two LNG import facilities. A number of companies have already begun exploring (e.g., Repsol/YPF before its nationalization in April 2012, Total, Apache, Exxon, Shell, Pan American Energy, and Americas Petrogas), with Repsol/YPF making a significant discovery in December 2011.

**Figure 1. Basins with assessed shale oil and shale gas formations as of May 2013**



Source: United States basins from U.S. Energy Information Administration and United States Geological Survey; other basins from ARI based on data from various published studies.

<sup>1</sup> US Energy Information Agency, *Technically Recoverable Shale Oil and Shale Gas Resources: An Assessment of 137 Shale Formations in 41 Countries Outside the United States*, June 10, 2013, <http://www.eia.gov/analysis/studies/worldshalegas/>.



Map 1.



Source: U.S. Energy Information Administration, June 2013



Nevertheless, until significant exploration is undertaken, one cannot know how much shale gas exists and is potentially recoverable under current economic and technological conditions. Even in the United States, where shale gas exploration and production have been underway for a number of years, dramatic recalculations of reserves downward have occurred: in 2012 the Energy Information Administration (EIA) reduced the estimated shale gas reserves from 827 trillion cubic feet (Tcf) to 482 Tcf, and in the prolific Marcellus Shale basin it reduced the reserves by 66 percent—from 410 Tcf to 141 Tcf.<sup>2</sup> Given the low prices of gas in the Argentine market, liquids potential will be a key factor for investors, but preliminary estimates indicate that only 20 percent of the most important shale gas basin, Vaca Muerta, has liquids. Clearly a great deal of exploration needs to occur to confirm Argentina's potential.<sup>3</sup> Investment in logistics and infrastructure is necessary to support it, the lack of which has made the cost of a shale well in Argentina more than double that in the United States (\$7-8 million compared to \$3 million).<sup>4</sup>

The pace of exploration in Argentina, as well as subsequent production and development of the required infrastructure to deliver the gas to the market, will be significantly influenced by politics and public policies regarding resource nationalism, the domestic energy market, and the environment. Argentina could again become a significant regional supplier of natural gas and an important exporter to Asia. The experience of the past decade suggests that the conditions for the shale gas revolution to take off in Argentina, unfortunately, are extremely problematic in the foreseeable future. Argentina's limitations will likely increase demand from the southern region of South America on global gas markets while restraining Argentina's contributions to global gas supply.

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<sup>2</sup> US Energy Information Administration, *Annual Energy Outlook 2012 Early Release Overview*, June 2012, [http://www.eia.gov/forecasts/aeo/pdf/0383\(2012\).pdf](http://www.eia.gov/forecasts/aeo/pdf/0383(2012).pdf). Nevertheless, there is speculation that after shale gas wells are capped, the porosity of the wells will continue to develop, suggesting that more gas will be accessible at a future date from these wells. Thus, technically recoverable reserves will increase.

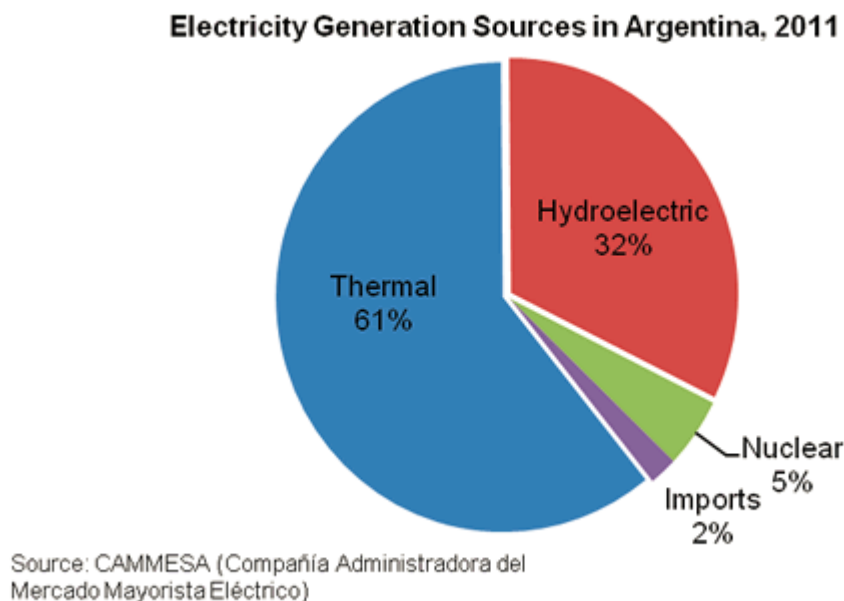
<sup>3</sup> Nicolás Di Sbroiavacca, "Shale Oil y Shale Gas en Argentina: Estado de situación y prospective," Fundación Barriloche, Working Document, Departamento de Economía Energética, August 2013.

<sup>4</sup> Business News Americas, *Energy in Argentina: In step with the new YPF*, Intelligence Series, August 2012, 13.

## Background

Natural gas plays a fundamental role in Argentina. Approximately half of the total energy consumed in Argentina is natural gas. Most electricity is generated by natural gas-fueled thermal power plants, and this use accounts for one-third of domestic consumption of natural gas. The other major consumers of natural gas are industry (28 percent), the residential sector (24 percent), and transport (7 percent), with compressed natural gas (CNG) fueling almost 2 million vehicles.<sup>5</sup>

**Figure 2.**<sup>6</sup>



Argentina was expected to generate electricity surpluses to export to Uruguay and Brazil. Spanish-owned Endesa built the transmission lines to feed the Brazilian state-owned electrical utility, Eletrobras. But shortly after the trade began, the 2000-2001 economic crisis hit Argentina, and the Argentine government unilaterally withheld supplies from Brazil; in 2004, a law prohibited the export of electricity “generated in Argentina with Argentine gas.”<sup>7</sup> In 2006,

<sup>5</sup> US Energy Information Administration, *Argentina 2012*, August 2012, 6.

<sup>6</sup> Ibid, 9.

<sup>7</sup> Economic Consulting Associates, *Argentina-Brazil Transmission & Trading Case Study*, January 2010, 5, [http://www.esmap.org/esmap/sites/esmap.org/files/BN004-10\\_REISP-CD\\_Argentina-Brazil-Transmission percent20 percent26 percent20Trading.pdf](http://www.esmap.org/esmap/sites/esmap.org/files/BN004-10_REISP-CD_Argentina-Brazil-Transmission%20percent26%20Trading.pdf).

Endesa's Brazilian subsidiary CIEN declared a breach of contract by Argentina. As of 2010, however, CIEN, Eletrobras, and the Brazilian Ministry of Mines and Energy still had not come to terms with Argentina over its nonperformance.<sup>8</sup> Instead, Argentina has become an important importer of electricity from its neighbors: during 2010 it imported 2,351 GWh (1,203 GWh from Brazil, 711 GWh from Uruguay, and 437 GWh from Paraguay).<sup>9</sup> Imports, however, were not enough to avoid blackouts during very cold or very hot days.

Argentina has both conventional and unconventional natural gas resources. The country produced 1.4 Tcf (4 bcf/d) of dry natural gas in 2011. Between 2000 and 2009 Argentina's proven conventional natural gas reserves fell by 50 percent; by the end of 2010 the country's reserves had fallen another 25 percent to 12.2 Tcf.<sup>10</sup> Gas reserves are concentrated in the Neuquén and Northwest basins; the Neuquén spans four provinces (Neuquén, Mendoza, Rio Negro, and La Pampa) with more than 50 percent of conventional and unconventional gas reserves, and is home to the country's major gas field, Loma La Lata. In 2011 YPF announced the discovery of 4.5 Tcf of promising tight gas and shale gas near the Loma La Lata field. About 13 percent of natural gas production in 2011 was from the Austral-Magallanes basin in the south, mainly from the Cuenca Marina Austral 1 operation of Total.<sup>11</sup> Argentina claims the Malvinas/Falklands Islands in a dispute with the UK, and oil and gas exploration is occurring in these waters by British companies; President Cristina Fernández de Kirchner's (CFK) government has threatened legal action against any companies appropriating "Argentine resources" in these waters.<sup>12</sup>

Figure 3 illustrates the dramatic rise in proven conventional natural gas reserves in the 1980s when the government liberalized the sector, its erratic performance over the following decade, and the dramatic decline since the government imposed price caps in 2003. Investment in the industry increased dramatically in the early period, and major international companies such as

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<sup>8</sup> Economic Consultants Advisory, *Argentina-Brazil*, 22-23.

<sup>9</sup> Business News Americas, *The Argentine electric power sector: generation and transportation*, Intelligence Series, February 2012, 6.

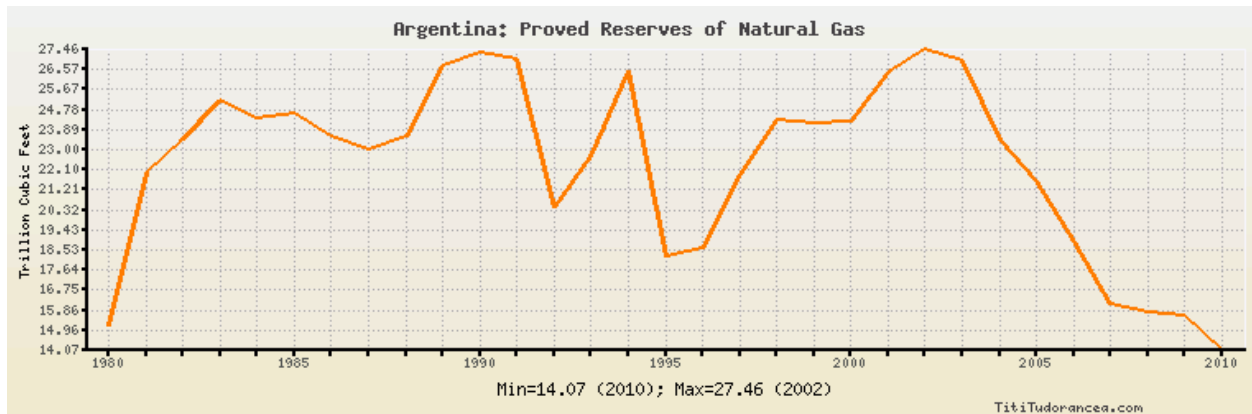
<sup>10</sup> BP Statistical Review of World Energy June 2011, 20.

<sup>11</sup> US Energy Information Administration, *Argentina 2012*, 7-8.

<sup>12</sup> Emily Gosden, "Argentina gives Falklands oil explorers May 2 ultimatum," *The Telegraph*, April 26, 2012; Emily Gosden, "Argentina threatens to sue Premier Oil over Falklands," *The Telegraph*, July 18, 2012; Emily Gosden, "Falklands oil is 'a risk worth taking', says Premier as it signs \$1bn deal," *The Telegraph*, July 12, 2012.

Total, British Gas, Amoco (now BP), and Chevron were among the country's most important investors. Between 1990 and 1997, private companies poured over \$6.2 billion into 11 projects. According to a World Bank project database, in 1999 Argentina led the developing world both in terms of the number of projects and investment.<sup>13</sup>

**Figure 3. Argentina's Proved Reserves of Natural Gas**



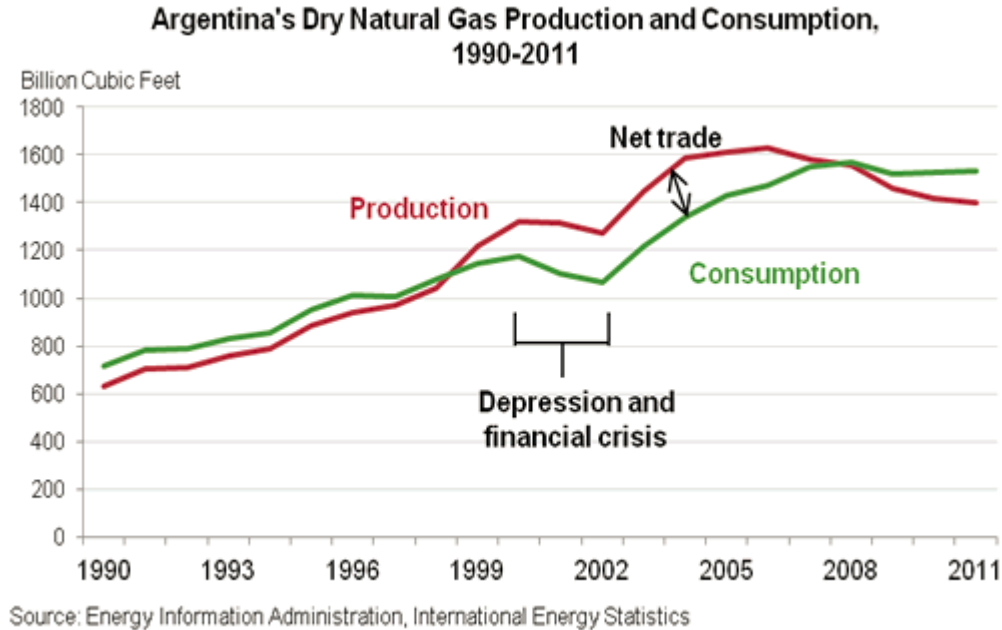
Source: *The Titi Tudorancea Bulletin*, October 21, 2010.

[http://www.tititudorancea.com/z/ies\\_argentina\\_dry\\_natural\\_gas\\_proved\\_reserves.htm](http://www.tititudorancea.com/z/ies_argentina_dry_natural_gas_proved_reserves.htm).

<sup>13</sup> AK Izaguirre, "Private participation in the transmission and distribution of natural gas—recent trends," Public Policy for the Private Sector, note no. 176, April 1999.

The impact of declining production and increasing consumption can be seen in Figure 4.

**Figure 4.**



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### Natural Gas Infrastructure

Argentina has an extensive gas transportation system (18,269 miles of natural gas pipelines),<sup>15</sup> which continues to expand. The Juana Azurduy Integration Pipeline, which links the Margarita gas field in Bolivia to the Refinor refinery in Campo Duran, Argentina (a distance of 48 kilometers/30 miles), was completed in July 2011 and will feed the Gas Pipeline of Northeastern Argentina (GNEA) to bring that part of the country into the natural gas grid. Though discussions on the GNEA began in 2010 and tenders for EPC were initially requested in May 2011, the deadline has been extended at least four times,<sup>16</sup> suggesting that investors and the government have been far apart on the terms for the construction. When completed (expected in 2013) the

<sup>14</sup> US Energy Information Administration, *Argentina 2012*, 6.

<sup>15</sup> US Energy Information Administration, *Argentina 2011*.

<sup>16</sup> Business News Americas, "Gasoducto del Noreste Argentino (GNEA)," accessed July 28, 2012; "El gasoducto del NEA recién se licitará el 26 de junio," *Diario Norte*, May 29, 2012, <http://www.diarionorte.com/noticia.php?numero=84305>. The government's website at ENARSA notes another postponement to March 26, 2013, but as of October 1, 2013, did not report any progress regarding construction bids.

Argentine pipeline will transport 27.7 Mm<sup>3</sup>/d of liquefied petroleum gas over almost 1,500 kilometers, require an additional 3,400 kilometers of secondary pipes, serve almost 400,000 people, and cost an estimated \$6 billion.<sup>17</sup>

Two companies dominate the pipeline system. The largest is Transportadora de Gas del Sur (TGS)—its three main pipelines (Neuba I, Neuba II, and San Martin) cover 8,600 kilometers; link production from the Neuquén, San Jorge, and Austral basins; provide 60 percent of the country's gas; and indirectly serve 4.6 million customers. This makes it the largest pipeline system in Latin America. Transportadora de Gas del Norte (TGN) is the second operator, with 6,000 kilometers in two main pipelines—the Northern Pipeline linking production in Salta province and the Central Western Pipeline from Neuquén province. The company supplies almost 40 percent of the domestic market and exports gas to Chile, Brazil, and Uruguay.<sup>18</sup> TGN has been unable to adjust to the low prices imposed on the domestic market by the government and does not have associated business in the sector as does TGS; in December 2008 the government took control over the operations of the company because of its inability to fill its contracted volumes. The company negotiated a restructuring of its debt with 88 percent of its bondholders in October 2009, but not before an Argentine court—and on July 12, 2012, the Congress as well—denied the company's petition to file for bankruptcy.<sup>19</sup>

Argentina is connected to its neighbors via gas pipelines because it had been an important exporter of gas until 2004. Chile was the main recipient of Argentine gas in this period, with seven gas pipelines linking Chile to Argentina, which were built beginning in the 1990s. When Chile embarked on an LNG push to replace the Argentine gas, there was speculation that Chile could send gas to Argentina using these pipelines, but if Argentina were to rejuvenate its gas industry, Argentine gas would flow to Chile once again. There is one pipeline from Argentina to Brazil, the Transportadora de Gas del Mercosur pipeline, which feeds a power plant in

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<sup>17</sup> Business News Americas, "GNEA Natural Gas Transport Project," <http://subscriber.bnamericas.com/Subscriber/index.jsp?&pagina=project&idioma=I&tipoContenido=detalle&idContenido=994779>. Subscription required.

<sup>18</sup> Reuters, "Profile: Transportadora de Gas del Norte," <http://www.reuters.com/finance/stocks/companyProfile?symbol=TGN.BA>.

<sup>19</sup> "Fitch Withdraws TGN's Proposed Issuance Rtg After Filing for Concurso Preventivo," *Reuters*, June 6, 2012, <http://www.reuters.com/article/2012/06/06/idUS175451+06-Jun-2012+BW20120606>; "National Congress Upholds Lower Court Ruling To Deny Bankruptcy Proceedings For Transportadora de Gas del Norte SA," *Reuters*, July 13, 2012, <http://www.reuters.com/finance/stocks/TGNA.BA/key-developments/article/2573303>.



Uruguayana, Brazil; there has long been talk of extending this pipeline to Porto Alegre. Argentina has two pipelines to Uruguay, the Buenos Aires-Montevideo natural gas pipeline (operated by the Gasoducto Cruz del Sur consortium) and a smaller pipeline between Colón, Argentina, and Paysandú, Uruguay.<sup>20</sup>

Argentina has a long gas relationship with Bolivia, building the YABOG pipeline in 1972 to import Bolivian gas (200 MMcf/d), then reversing the flow in the 1980s when Argentine gas development took off and Bolivian slowed, and once again importing Bolivian gas in the 2000s. In 2010 Argentina imported 3.61 bcm (billion cubic meters); Bolivia supplied half of that, with the other half being LNG imports.<sup>21</sup>

Faced with declining domestic production and limited Bolivian capacity to export, Argentina turned to LNG in 2008, installing a receiving terminal and regasification vessel, the Bahía Blanca GasPort. In 2010 Argentina imported 1.78 bcm of LNG (1.63 bcm from Trinidad and Tobago, 0.15 bcm from Qatar).<sup>22</sup> A second, larger floating and regasification vessel (GNL Escobar) opened in Escobar in 2011, with a baseload throughput capacity of 500 MMcf/d and a peak of 600 MMcf/d. Both vessels use Excelerate Energy proprietary technology and were financed by YPF and ENARSA.<sup>23</sup> Argentina will participate in an LNG facility in Uruguay, through which it would receive gas via the pipeline that originally sent Argentine gas to Uruguay and has been mothballed for over six years.<sup>24</sup> Argentina signed a 20-year contract with Qatargas for five million tons per year of LNG beginning in 2014, when ENARSA's Floating, Storage and Re-gasification Unit (FSRU) is expected to be completed.<sup>25</sup>

## Energy Plan

At one time, Argentina had been an important regional exporter, supplying Chile, Brazil, and Uruguay. But in response to the economic collapse of 2000-2001, the government of Eduardo

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<sup>20</sup> US Energy Information Administration, *Argentina 2012*, 8.

<sup>21</sup> *BP Statistical Review of World Energy June 2011*, 28.

<sup>22</sup> *Ibid*, 28.

<sup>23</sup> US Energy Information Administration, *Argentina 2012*, 8-9.

<sup>24</sup> Business News Americas, *The Argentine electric power sector*, 5.

<sup>25</sup> "Qatargas will provide Argentina with LNG on a 20 year supply agreement," *MercoPress.com*, July 1, 2012.

Duhalde (2002) froze public service rates (including that of electricity generation and transmission) in 2002.<sup>26</sup> Presidents Nestor Kirchner (2003-2008) and Cristina Fernández de Kirchner (2008-present) imposed price caps on the domestic market that were devastating to investors. In response companies diverted domestic supplies to exports; the government countered by increasing taxes, imposing quantitative limits, and ultimately breaking contracts in a failed effort to keep the domestic market supplied. With the export market significantly reduced (exports declined from a peak of 274 Bcf in 2004 to 15 Bcf in 2010<sup>27</sup>), and the domestic market unprofitable, companies dramatically cut back on E&P. Between 2003 and 2010, energy prices declined by almost 30 percent, while oil and gas production fell by 12 percent and 2.3 percent, respectively.<sup>28</sup> In 2011, gas production dropped ten percent from its peak in 2006,<sup>29</sup> and the decline continues: gas production for May 2013 was 6.32 percent below that of May 2012.<sup>30</sup> Meanwhile, energy subsidies totaled US\$10 billion in 2011.<sup>31</sup>

Federal stimulus and the commodity boom affecting the country's major exports—chiefly soya— fueled high levels of GDP growth, and gas shortages ensued, since a 1 percent growth in GDP generates a 1.5 percent increase in electricity demand.<sup>32</sup> To maintain its domestic popularity, the government keeps prices uneconomically low in the domestic market and shuts down industry for days to keep homes heated or air-conditioned when demand soars—supply shortages have reached 40 percent of demand.<sup>33</sup> Though there are expectations that production can stabilize at about 40 bcm per year and slightly more at the end of the decade when shale gas could be available, demand should reach almost 65 bcm in 2020. Even if Bolivia meets its projected output, Argentina would still need to import over 10 bcm that year.<sup>34</sup> Consequently, if growth continues, even under a best-case scenario the country would still be a net importer of gas in 2020.

<sup>26</sup> US Energy Information Administration, *The Argentine electric power sector: generation and transportation*, 2.

<sup>27</sup> US Energy Information Administration, p. 9.

<sup>28</sup> Abigail Wilkinson, "Government will up sector intervention," *Business News Americas*, February 8, 2012.

<sup>29</sup> US Energy Information Administration, *Argentina 2012*, 5.

<sup>30</sup> Instituto Argentino de la Energía, *Informe de Tendencias del Sector Energético Argentino*, May 2013, data from Secretaría de Energía – Tablas Dinámicas SESCO Upstream, <http://energia3.mecon.gov.ar/contenidos/verpagina.php?idpagina=3299>.

<sup>31</sup> Abigail Wilkinson, "The winners and losers in Argentina's subsidy story—Emilio Apud," *Business News Americas*, January 20, 2012.

<sup>32</sup> Business News Americas, *The Argentine electric power sector*, 7.

<sup>33</sup> US Energy Information Administration, *Argentina 2012*, 6.

<sup>34</sup> Business Monitor International, *Argentina Oil & Gas Report Q1 2012*.

Plans for the renationalized YPF call for suspension of dividend payments and investments of US\$3.5 billion in 2012, rising to US\$7 billion for each of the next five years, totaling US\$38.5 billion. The proposal includes more than doubling the number of wells drilled to 746 in 2012 and 1,000 in 2013. Financing the plan, however, seems problematic given the poor investment climate for foreigners (see below), and the plan therefore contemplates significant Argentine financing. If YPF's profits remain stable (US\$1.9 billion in 2011), only approximately 16 percent of the annual investments could come from within the company. The state agency in charge of the recently (2008) nationalized US\$24 billion retirement and pension funds might be able to contribute US\$1 billion. The CFK administration got the Central Bank to permit local banks, which can only lend up to 35 percent of their gross assets to the public sector, to lend to YPF as if it were a private rather than public company; whether parent companies of foreign banks in Argentina would follow suit is unclear. Bonds may also be issued, with future exports as the guarantee.<sup>35</sup> In addition to the YPF plans, the government also has plans for the shale reserves as a whole. The Vaca Muerte block contains some 23 billion barrels of oil, of which just over half belong to YPF. Development of these reserves is estimated to require US\$25 billion a year.<sup>36</sup> Developing the Vaca Muerta field is anticipated to require an increase of 60 drilling rigs to bring 2,000 oil wells into production and 40 more drilling rigs for the more than 1,000 gas wells. Since there are currently only 80 rigs in Argentina, the plan expects to more than double that number, and this at a time when there is a shortage of rigs worldwide.<sup>37</sup>

Under the plan Argentina expects that production by 2017 (annual production of 216 million barrels of oil equivalent or about 592,000 barrels per day) will be 36 percent greater than in 2012. There can be relatively quick short-term increases in production, since Repsol has forgone the increased costs of expanding supplies from mature and marginal fields.<sup>38</sup> The declarations by the new management team are impressive but not very credible, as this paper makes clear, and thus these financing targets are unlikely to be met.

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<sup>35</sup> Business News Americas, *Argentina 2012*, 5-7.

<sup>36</sup> Rodrigo Orihuela and Ben Sills, "Eskenazi Said to Tell Brufau YPF Buyback Pact Off Table," *Bloomberg*, April 26, 2012.

<sup>37</sup> Business News Americas, *Argentina 2012*, 16-17.

<sup>38</sup> *Ibid*, 4.

## Political Trends

Argentina's politics are dominated by the legacy of Juan Domingo Perón (1895-1974), who rose to power in the mid-1940s on a populist platform. Because Perón was at times a populist and at other times pushed conservative policies, the vast majority of Argentines can find a home under the Peronist umbrella. From 1946 to the present, Perón or a party appealing to his legacy has won every free election except two (Raul Alfonsín in 1984 and Fernando de la Rúa in 1999, and both of those presidents resigned in the face of severe civil unrest) in which the military permitted the Peronists to compete. The Peronist party itself has been historically fractured, with a number of distinct currents offering platforms at electoral times. Currently, Cristina Fernández de Kirchner's faction, Frente Para La Victoria (FPV), is the most important; another heterogeneous faction, united by its opposition to CFK, is Peronismo Federal (PF). The factions compete on policy and can oppose a Peronist president's policies, but often unite during an election to guarantee a Peronist victory.

The tendency of the Peronist public to coalesce behind one leader (Perón himself until his death in 1974, Menem after the end of military rule in the 1980s through 1990s, Néstor Kirchner until his death in 2010, and now his wife, Cristina, in her second term as president) and the broad authority of a president to issue decrees give Argentine politics a tinge of autocracy and the sense of a subordination of law to politics.

Since the Peronists do not articulate a coherent ideology, their policies fluctuate with the personal views of the contemporary leader. A Peronist privatized the national oil company in the 1990s (Carlos Menem), and another Peronist renationalized the company in 2012 (Cristina Fernández de Kirchner—so far the Kirchners have nationalized seven companies, including the airline Aerolíneas Argentinas, itself once state-owned, and pension funds).

The Kirchners' son, Máximo, created a youth movement to support his father's campaign (known as "La Campora" after a former Peronist President on the left); it subsequently became a

political think tank and an important political force.<sup>39</sup> Two members, Mariano Recalde and Axel Kicillof, were put in charge of the renationalized airline Aerolíneas Argentinas in 2008. Under their management, the company has received US\$2.9 billion in government funds, no accounting system has been developed to oversee the expenditures, and its labor force increased 10 percent—the airline has few prospects of becoming profitable.<sup>40</sup>

Other influential figures in the government include the planning minister, Julio de Vido, who was Néstor Kirchner's closest advisor in the 2003 presidential campaign and became minister in 2003. He shares Kirchner's leftist and nationalist views and is one of only two ministers who have stayed in their same positions since the ascension of the Kirchner clan; the minister of domestic trade, and often referred to as the de facto economy minister, Guillermo Moreno, is the other. Moreno has a reputation as a tough politician and is CFK's "enforcer" on controversial policies such as foreign exchange and imports controls.

### *Political Instability*

Argentina is characterized by political instability. The military dominated politics from the 1930s to 1984, but was discredited by a combination of its severe human rights violations during the dictatorship of 1976-1982 and its loss of the Malvinas/Falklands War against the United Kingdom in 1982. Argentine workers, middle class, and social movements are willing to create severe civil unrest and force democratically-elected presidents from office when economic crises provoke unemployment and high inflation, as occurred in 1989 and 2001-2002. The orderly transfer of power is thus dependent on whether Argentines are willing to wait until the next election, which helps to explain the risky and expansionary tendencies of Argentine public policy since 2001.

CFK has a rival, the popular mayor of the city of Buenos Aires (reelected with 60 percent of the vote), Mauricio Macri, founder of the center-right Propuesta Republicana party (PRO). He took a strong position against her popular renationalization of YPF, calling for his party to vote against

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<sup>39</sup> "Preparing the ground for Maximo Kirchner to occupy the front stage," *MercoPress*, April 20, 2012; Ramy Wurgaft, "La Cámpora extiende sus tentáculos," *El Mundo.es*, June 19, 2012; Gabriel Ziblat, "Boudou le entregó a La Cámpora dos salas de audiencias del Senado," *Perfil*, May 5, 2012.

<sup>40</sup> Claudio Savoia, "Aerolíneas Argentinas: la gestión de La Cámpora muestra ineficacia y descontrol," *Clarín*, June 24, 2012, [http://www.clarin.com/zona/gestion-Campora-muestra-ineficacia-descontrol\\_0\\_724727629.html](http://www.clarin.com/zona/gestion-Campora-muestra-ineficacia-descontrol_0_724727629.html).

it.<sup>41</sup> The Union Civica Radical (UCR) is traditionally the second strongest party, but it is divided perhaps even more than the Peronists (a UCR member was CFK's vice president during her first term) and is a distant second in the Chamber of Deputies with 38 out of 257 seats. Since CFK is in her first year of a four-year term and the Peronists control Congress, it is not likely that Macri or UCR can have an impact on policy in the short term, unless a crisis leads to the overthrow of the Peronist control of the presidency and Congress.

Although Peronism has long dominated the labor movement, its heterogeneity means that a Peronist government cannot take labor support for granted and that the labor movement itself suffers from schisms. The authoritarianism of CFK's leadership and the rising inflation are provoking concerns among important labor leaders and unions about government policy. The most important national labor confederation, Confederación General de Trabajadores (CGT), is currently led by Hugo Moyano who rose in Peronist youth politics and the Truckers Union, becoming CGT leader as Néstor Kirchner began his presidency. His good relations with the Kirchners evaporated when CFK included few CGT candidates on her party list for the 2011 election; in December 2011 Moyano resigned from his vice presidency in the Peronist party after the newly reelected CFK said her government would not tolerate strikes designed to "extort" the government. Moyano threatened strikes over wage and tax policy, denounced the government's raiding of health insurance company assets, and announced that the CGT will develop its own inflation figures. The CGT split into three groups, with a pro-government faction led by Antonio Caló, leader of the Metal Workers Union (UOM), and an independent one led by Luis Barrionuevo of the hotel and restaurant workers' union. In June 2012 the Truck Drivers Union led by Moyano's son struck, and the labor ministry mediated between the parties; settlements called for a 25 percent wage increase.<sup>42</sup>

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<sup>41</sup> "Não cumprir com a palavra gera dano enorme," *O Globo*, April 22, 2012.

<sup>42</sup> Randall Ware, "Moyano Resigns from Peronist Party," *The Argentine Independent*, December 15, 2011, <http://www.argentinaindependent.com/currentaffairs/newsfromargentina/moyano-resigns-from-peronist-party/>; Anna Hill, "Moyano Calls Off Lorry Strike," *The Argentine Independent*, March 18, 2011, <http://www.argentinaindependent.com/currentaffairs/newsfromargentina/moyano-calls-off-lorry-strike/>; Kelsey Jost-Creegan, "Moyano Holds CGT Elections Despite Mounting Controversy," *The Argentine Independent*, July 12, 2012, <http://www.argentinaindependent.com/currentaffairs/moyano-holds-cgt-elections-despite-mounting-controversy/>; Kate Beioley, "Moyano To Create New National Statistics Office," *The Argentine Independent*, July 16, 2012, <http://www.argentinaindependent.com/currentaffairs/moyano-to-create-new-national-statistics-office/>.



On June 27, 2012, the CGT led a large demonstration (up to 150,000 people) in Buenos Aires against government tax increases and caps on benefit payments to families and for school aid. Moyano's ability to tap into discontent is evidenced by the fact that Barrientos' independent faction joined the protest, as did the small leftist opposition party, Frente Izquierda.<sup>43</sup> The split between the main faction of the CGT and the government suggests a rise in labor unrest as the CFK government maneuvers to deal with a slowing economy, high inflation, and large government subsidies. A massive middle class demonstration and a general strike in the fall of 2012 illustrated CFK's lack of influence over the middle class social movements and the CGT. We can, therefore, expect increasing political instability in the short term as the CFK administration confronts current economic challenges.

### *Stakeholders*

The stakeholders in energy policy span Argentine society, including consumers, industry, investors and labor in the sector, and provincial governors; indirect stakeholders are business and labor that depend on the economic health of the sector. Since the economic crisis of 2001, consumers have the greatest impact on energy policy because they not only generate the majority of votes during elections, but they have also taken to the streets to protest against government policies in between elections. In 2009, after the government began letting electricity tariffs rise in 2008, the threat of social unrest was significant enough to freeze this policy.<sup>44</sup>

Industry is organized into various chambers. But during the Kirchner administrations, industrialists have had little impact as a group because politics revolves around the symbols of the nation and "the people." Initially, industrialists were protected against high energy prices in the early recovery period because Kirchner needed to increase employment; but once employment recovered and the level of subsidies threatened the federal budget, the government began to raise gas prices to the industrial sector. When electricity and gas shortages developed, industry was forced to make the adjustments—by closing for the day—that would keep cheap supplies flowing to "the people."

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<sup>43</sup> Kelsey Jost-Creegan, "Moyano Heads Large-scale Demonstrations in Buenos Aires," *The Argentine Independent*, June 27, 2012, <http://www.argentinaindependent.com/currentaffairs/moyano-heads-large-scale-demonstrations-in-buenos-aires/>.

<sup>44</sup> Economic Consulting Agents, *Argentina-Brazil*, 11.

Some industrialists use their personal connections to benefit from energy policy. In the most egregious case, in 2007 Repsol was pressured to sell 15 percent of Repsol/YPF to the Peterson Group of the Eskenazi family, who were closely allied with Néstor Kirchner; in May 2011 the Peterson Group bought another 10 percent of the company.<sup>45</sup> The US\$3.5 billion financing provided by Repsol and banks were to be paid out of earnings from those shares, which, combined with low prices, explains Repsol/YPF's focus on dividends rather than investments.<sup>46</sup> Though the government did not nationalize the Eskenazi shares, the dramatic decline in YPF's value after the nationalization led them to default and transfer shares to Brazilian bank Itau (3.6 percent), Repsol (6 percent), and Mexico's Carlos Slim (8.4 percent), among others.<sup>47</sup>

A number of Argentine companies are important players in oil and gas E&P. Tecpetrol, a company of the Argentine conglomerate Techint Group, has in the past been accused of underinvesting and had a concession revoked by the provincial government of Neuquén. Tecpetrol is a partner in the gas pipeline company Transportadora de Gas de Mercosur, which recently won a \$1.4 billion judgement against YPF for suspending gas exports to Brazil in 2008.<sup>48</sup> Bridas Corporation (half owned by the Bulgheroni family and half by the Chinese national oil company CNOOC) owns 40 percent of Pan American Energy (the second largest producer of hydrocarbons in the country), with the other 60 percent owned by British Petroleum. Pluspetrol, controlled by the Rey and Poli families, is the fourth largest producer of oil and gas in the country. As the Eskenazi and Techint cases indicate, they can be allies of the government one day and have a falling out the next day.

Provincial governors are stakeholders in Argentine oil and gas policy as they control the allocation of resource blocks outside of federal lands. Provincial governors are under pressure due to lost revenue and supply shortages generated by federal energy policy and the political

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<sup>45</sup> "El Grupo Petersen ejerció la opción y aumentó 10 percent su participación en YPF," *Infobae.com*, May 4, 2011, <http://www.infobae.com/notas/579573-El-Grupo-Petersen-ejercio-la-opcion-y-aumento-10-su-participacion-en-YPF.html>.

<sup>46</sup> Jude Webber, "YPF move puts Eskenazi clan in debt bind," *Financial Times*, April 19, 2012.

<sup>47</sup> Eduardo Thomson, "Itau Joins Slim in Argentine Oil Business After YPF Loan Default," *Bloomberg News*, June 20, 2012; "Repsol regains 6 percent warranty-stake in YPF and now owns 12.43 percent of the company," *MercoPress*, June 1, 2012; Crayton Harrison, "Slim Family Still Considering Options for Its YPF Stake," *Bloomberg News*, June 19, 2012; Rodrigo Orihuela and Crayton Harrison, "YPF Soars as Billionaire Slim Gets 8.4 percent Stake From Eskenazis," *Bloomberg*, June 15, 2012.

<sup>48</sup> "Fallo en contra de YPF: deberá pagar US\$ 1.400 millones," *Clarín*, May 27, 2013.

mood asserting national sovereignty. Though the federal government promises to help meet budget shortfalls, the provinces and the capital city of Buenos Aires are suffering from increasingly tight budgets as federal subsidies and tax redistribution mechanisms are generating less revenue.<sup>49</sup> Since a number of provinces have their own oil and gas companies and control access to subsoil resources in non-federal lands in their jurisdiction, governors face pressure from citizens and the federal government to follow the national line regarding oil and gas policy. To meet their economic and nationalist needs, provincial governors decreed termination of contracts with a number of firms, including Repsol YPF, Petrobras, and private Argentine companies.<sup>50</sup>

### *Energy as a Social Good*

Argentines think about energy in very nationalistic terms—YPF was the first national oil company (NOC) in the world, created in 1922, and it took the hyperinflation crisis of the 1980s and the huge financial liabilities of YPF to create a context in which the Menem government could privatize the company. Oil and gas are not only the property of the nation, but they are also considered “a basic resource for economic growth and the development of the country,” as the CFK leadership in the House declared during the votes on renationalizing YPF.<sup>51</sup> The Senate supported nationalization 63-3, with four abstentions; the House supported it 207-32 with 18 abstaining.<sup>52</sup> Although the nationalization left 49 percent of YPF shares in non-Argentine government hands, because the act declares that it is in the public interest for the country to achieve self-sufficiency, it sets a context for more state control.

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<sup>49</sup> For a discussion of the federal-provincial distribution of tax receipts, see Kelsey Jost-Creegan, “Funding Federalism: the Argentine Co-Participation System,” *The Argentine Independent*, August 1, 2012; also Brit Weaver, “Lights Back On in Buenos Aires,” *The Argentine Independent*, July 27, 2012, edesur<http://www.argentinaindependent.com/currentaffairs/lights-back-on-in-buenos-aires/>; “Córdoba demandó al Gobierno por una deuda millonaria,” *Todo Noticias*, July 30, 2012, <http://tn.com.ar/politica/000264266/cordoba-demando-al-gobierno-nacional-por-una-millonaria-deuda-previsional>.

<sup>50</sup> “Chubut, Santa Cruz provinces terminate YPF oil contracts in four wells,” *Buenos Aires Herald*, March 14, 2012.

<sup>51</sup> Ken Parks, “Argentina's Congress Approves YPF Takeover Bill,” *Wall Street Journal*, May 4, 2012.

<sup>52</sup> “Argentina Congress approves takeover of YPF,” *BBC News*, May 3, 2012; “Argentina's Senate votes for repatriation of Spain's YPF,” *The Telegraph*, April 26, 2012.

## Analysis of Political and Historical Trends Shaping Natural Gas Development

### *State Control*

Resource nationalism is on the rise in Argentina. Before the federal government nationalized YPF in April 2012, provincial governments had been threatening companies exploiting provincially-granted leases to increase activity; Neuquén's governor rescinded agreements with both Repsol/YPF and Brazil's NOC Petrobras for alleged underinvestment in their fields.<sup>53</sup> Resource nationalism discouraged investment when it appeared that the country was running out of reserves, but the shale gas potential forces companies to reconsider. Quick returns from shale are possible because the depletion rate of shale gas fields is so high—but only after basic infrastructure in the region has been developed and if the price is remunerable. Argentina lacks equipment and technology, and is furthermore sending ambiguous signals with its pricing programs (see below), tax incentives that are granted and retroactively repealed, and periodic restrictions on repatriating profits in dollars. The pace of shale gas development globally will also affect by the availability of rigs, the market price of LNG, and the opportunities for shale gas developments elsewhere.

As an NOC, YPF may find itself expected to deliver higher wages, greater employment, and subsidies in the name of “the public interest.” Already the NOC was subjected to a wildcat strike by 3,200 employees and forced to negotiate with them over wage increases of 25-35 percent.<sup>54</sup> Combined with the captive market generated by the government decree requiring state agencies to purchase only from YPF, the government's reticence to let the market set prices, and the willingness of both federal and provincial governments to rescind contracts with oil and gas companies, the likelihood of YPF placing itself in the ranks of efficient NOCs (led by Statoil) is low. YPF is thus not likely to contribute anything other than legitimacy to a foreign partner.

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<sup>53</sup> Taos Turner, “Argentina's battle for YPF grows internationally,” *MarketWatch*, April 9, 2012, <http://www.marketwatch.com/story/argentinas-battle-for-ypf-grows-internationally-2012-04-09>.

<sup>54</sup> Kelsey Jost-Creegan, “YPF Workers Block Refinery in Luján de Cuyo,” *The Argentine Independent*, July 24, 2012.

### *Gas Governance*

Subsoil resources in Argentina belong to the nation. The allocation of licenses to exploit those resources is granted by the federal government for offshore fields and federally owned properties on shore; since November 2006 provincial governments control the licenses for onshore oil and gas in their jurisdictions. The licensing revision increased activity since provincial governments were anxious to generate associated royalties and taxes. Neuquén created its own government-owned firm, Gas y Petróleo del Neuquén,<sup>55</sup> while Santa Cruz seized hydrocarbon fields from Repsol/YPF for alleged underinvestment (ignoring the disincentives for investment), then transferred them to the new YPF after nationalization. Chubut province also seized wells in March 2012 from Repsol/YPF.<sup>56</sup>

### *Regional Politics*

Argentina has good relations with foreign countries, with the exception of the United Kingdom because of the Malvinas/Falklands sovereignty dispute. Its neighbors in South America understand the domestic constraints facing Argentine governments because they face some of the same issues themselves and do not punish Argentina for reneging on contracts.

Though there are regional organizations promoting energy integration, Argentina has chosen to develop agreements bilaterally. Argentina unilaterally abrogated its gas and electricity export treaties with Chile, Brazil, and Uruguay, so the choice to structure the trade bilaterally rather than through a multilateral process lowered the cost to Argentina of this unilateral behavior. Export prices are not affected by geopolitical decisions.

### *International Obligations*

Argentina is a party to the major investment guarantee treaties: the New York Convention on the Recognition and Enforcement of Foreign Arbitral Awards and the Convention on the Settlement of Investment Disputes between States and Nationals of other States (ICSID). It also has bilateral treaties regarding the promotion and protection of foreign investments with France, Spain, Italy,

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<sup>55</sup> Isabel Amadeo, "Estudio Beccar Varela," in *The International Comparative Legal Guide to Gas Regulations 2012* (London: Global Legal Group, 2012), 27, <http://www.ebv.com.ar/images/publicaciones/gaschapter5.pdf>; Wood Mackenzie, "Argentina: Unconventional dawn on the horizon," *Upstream Insight*, May 2011, 5.

<sup>56</sup> "Chubut, Santa Cruz provinces terminate YPF oil contracts in four wells," *Buenos Aires Herald*, March 14, 2012.

the United States, Canada, Switzerland, and Chile. When the government began violating contracts after the economic crisis of 2001, a number of companies made use of these conventions and treaties. Although some companies won their cases, Argentina has not paid any of these awards as of 2012.<sup>57</sup> Nor have Spain or Repsol found comfort in these treaties after the nationalization of YPF. In short, international obligations appear to take a backseat to domestic considerations quite easily.

Now that Venezuela has become a full member of Mercosur, it has sought to create an oil and gas alliance with Argentina and Brazil. First discussions revolve around investment and technology transfer issues.<sup>58</sup> The differences between the international oil and gas markets and the difference between the degree and type of control Chavez and CFK have over their national political economies suggest that Argentina cannot successfully adopt levels of resource nationalism similar to those of deceased President Hugo Chávez and his heirs.

### *Environmental Concerns*

Argentina has an Environmental and Social Development Ministry that houses the Department of the Environment and Sustainable Development, which develops regulations and standards on the topic, handles environmental studies, and provides environmental certification. Environmental licensing for the energy sector is the purview of the Departments of Mines and Energy, Mining, and Transportation.<sup>59</sup> The decision-making process, however, is problematic because scientific evaluation of the risks is weak, the public is largely uninformed about the scientific state of the debates, and the political process for making the trade-offs is considered illegitimate by significant sectors of society.

Rules governing environmental risks (e.g., toxic wastewater disposal) and opportunity costs (Argentine shale basins tend to lack water)<sup>60</sup> will have a fundamental impact on the future of

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<sup>57</sup> Amadeo, “Estudio Beccar Varela,” 30-31.

<sup>58</sup> “YPF and PDVSA advance in the energy strategic alliance; next meeting in Caracas,” *MercoPress*, August 4, 2012.

<sup>59</sup> Economic Consultants Advisors, *Argentina-Brazil*, 18.

<sup>60</sup> “Argentina’s Natural Gas Discoveries,” *Latin Intelligence*, December 28, 2011, <http://www.latintelligence.com/tag/evo-morales/>.



shale gas. Though slow to react to the issue of shale gas exploration,<sup>61</sup> the success of Greenpeace Argentina in using physical obstructions to block soya farming expansion in the Chaco region,<sup>62</sup> the decision of Buenos Aires to ban plastic bags,<sup>63</sup> and a judge's suspension of a mining concession until an inventory of local glaciers was completed<sup>64</sup> suggest that environmental concerns will slow shale gas development in Argentina.

### *Government Policy and Regulation*

Currency transactions are closely regulated, both to promote the use of Argentine pesos within the country and to diminish capital flight as worries about the economy escalate.<sup>65</sup> Executive Order 1722/2011, issued in October 2011, requires exporters to convert all foreign currency to pesos in Argentina; though oil and gas exports are minimal,<sup>66</sup> development of shale gas would be negatively affected if these currency controls persist. Faced with a growing fiscal drain and dollars being smuggled out of the country or simply hoarded, in May 2013 the government sought to incentivize citizens to turn in undeclared cash through a tax amnesty program which did not require payment of back taxes or identification of the source of the funds. Part of the incentive program, a government bonds program called Argentine Savings Bonds for Economic Development (Bono Argentino de Ahorro para el Desarrollo Económico, also known as BAADES) offers 4 percent interest for bonds maturing in 2016 and is open to all investors; thus far only 26 million (US dollar equivalent) of BAADE bonds have been sold. Though the Argentine government had hoped that the tax amnesty incentive would attract \$4 billion of the estimated \$160 billion that Argentines hold outside the local financial system, according to the country's chief tax collector, Ricardo Echegaray, between June and September only \$379 million entered the country through the program. Of that amount, only 10 percent went to BAADES,

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<sup>61</sup> Cf. an op-ed by an unnamed lawyer in Neuquén, "Peligros y verdades del gas no convencional," *rionegro.com.ar*, February 16, 2011; "Fracking: La última obsesión energética," *eco-sitio*, March 18, 2012, <http://www.eco-sitio.com.ar/node/8179>.

<sup>62</sup> Nic Pollock, "Bulldozers Evicted From Gran Chaco's 'Impenetrable' Forest," *The Argentine Independent*, July 23, 2012.

<sup>63</sup> Allendria Brunjes, "Buenos Aires Moves to Dispose of Plastic Bags," July 23, 2012.

<sup>64</sup> Jen Michalski, "Chilecito Court Suspends La Rioja Mining Agreement," *The Argentine Independent*, July 19, 2012.

<sup>65</sup> See Eliana Raszewski, "Argentine President Tightens Foreign Exchange Controls: Timeline," *Bloomberg News*, March 20, 2013.

<sup>66</sup> Amadeo, "Estudio Beccar Varela," 27.

with 90 percent invested in real estate. The Argentine government responded by extending the amnesty through December 31, 2013.<sup>67</sup>

In another effort to increase investment in unconventional hydrocarbons, in July 2013 CFK issued a controversial decree permitting energy companies that invest over \$1 billion in five years to export 20 percent of their production abroad at world prices and be exempt from requirements to repatriate profits and pay export taxes; the remaining production will be sold in the domestic market at world prices.<sup>68</sup> The day after the incentives were announced Chevron signed to make an initial \$1.24 billion investment with YPF in the Vaca Muerte fields,<sup>69</sup> and subsequently Wintershall entered a joint venture with Gas y Petroleo de Neuquén to explore and produce in a field taken back from a previous investor by the Neuquén provincial government for lack of investment.<sup>70</sup> Dow Chemical Company agreed two days later to invest \$120 million in a joint pilot project with YPF in the El Orejano block of Vaca Muerte.<sup>71</sup>

In February 2012 the government began regulating imports, including machinery, which raised costs for companies since they now had to pay storage costs for up to 90 days. Decree 1277 of July 2012 increased regulation of the energy sector. Reference prices for costs components and reference sale prices for hydrocarbons and fuels are to be published periodically. Companies must submit annual investment plans to a special commission by September 30, and the commission will demand modifications as necessary to bring them into line with national energy goals of self-sufficiency and sustainability set by the commission itself. Companies that fail to comply with the decree and regulations can be fined and their contracts canceled.<sup>72</sup> Laws and regulations would justify increasing state control if foreign direct investment does not deliver under the terms set by the government.

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<sup>67</sup> Nicolás Furfaro, “El gobierno lanzó un blanqueo de capitales para conseguir dólares,” *Clarín*, May 8, 2013; “Argentine oil company finds way to invest in Vaca Muerta and elude legal action from Repsol,” *MercoPress*, October 3, 2013; “Bridas to invest \$500 million in Argentine bonds for shale development,” *Platts*, October 3, 2013.

<sup>68</sup> “Para cerrar con Chevron, el Gobierno crea nuevos beneficios a la inversión petrolera,” *Clarín*, July 15, 2013; “Flogging a Dead Cow,” *The Economist*, July 27, 2013.

<sup>69</sup> “Pese a las protestas, YPF firmó el acuerdo con Chevron,” *Clarín*, July 17, 2013.

<sup>70</sup> Peter Dinkloh, “Wintershall Signs Oil Deal in Argentina's Vaca Muerta Field,” *Reuters*, September 23, 2013.

<sup>71</sup> “YPF, Dow Argentina Sign Shale-Gas Deal,” *Reuters*, September 25, 2013.

<sup>72</sup> Nic Pollock, “Presidential Decree 1277: ‘Hydrocarbon Sovereignty,’” *The Argentine Independent*, July 30, 2012.

### *Decision-making Structures*

Argentine legislation on subsoil rights permits federal and provincial governments to essentially make unilateral decisions regarding the exploitation, production, and distribution of gas. Local communities, including indigenous groups, have not been formally incorporated into the decision-making process upstream or downstream. As a result, the only way in which they can influence production and distribution is through civic or court action; we can expect an increase in these actions as shale gas development proceeds.

### **Economic and Legal Factors**

#### *Projections of Economic Growth*

Argentina's default on its international debt in 2002 shut it out of non-governmental international credit markets, and private investors sued in international courts for breach of contract. The government reached agreements with 93 percent of government bondholders in 2005 and 2010 to accept new government bonds that would pay less than 30 cents on the dollar. But 7 percent of the defaulted bonds were acquired by companies that are suing in U.S. courts for full repayment. The cases are now at the U.S. Supreme Court, and Argentina claims it will not accept a judgement offering a better deal. The Argentine legislature reaffirmed that position in September 2013, passing legislation that offers the holdouts the same terms as those they refused in 2010.<sup>73</sup> The situation is serious enough that at the beginning of September, Standard & Poor's Rating Service expressed concern about a "selective default," with a one-in-three chance of "a legal battle with creditors that could prevent the Argentine government from paying bondholders or force it to undertake a distressed debt exchange."<sup>74</sup>

The economy faces other serious challenges. A major stimulus package produced a real rate of 7.7 percent GDP growth from 2004-2010,<sup>75</sup> the fastest in Latin America, far outpacing what

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<sup>73</sup> Hugh Bronstein, "Argentina's Congress gives go-ahead to open-ended debt swap," *Reuters*, September 11, 2013.

<sup>74</sup> Ken Parks, "Argentina Stocks, Bonds Extend Gains; Peso Firms on Black Market," *Wall Street Journal*, September 10, 2013.

<sup>75</sup> The true rate was undoubtedly less since the government notoriously underreports inflation; nevertheless, growth was impressive.

could be attributed to the export boom in commodities.<sup>76</sup> 2011's rate was even higher at 8.9 percent, but dropped precipitously to 1.9 percent in 2012. Though growth rates are projected by the government to recover to 5.1 percent, for 2013 the Credit Suisse Group AG forecast 3.1 percent growth, and the IMF forecast 2.8 percent.<sup>77</sup>

As the economy deteriorates, government policy is erratic and unilateral. The government manipulates inflation (private sources peg this percentage in the mid-20s, but the government claims less than half that) and growth figures and fines anyone who publishes figures that contradict official ones; the IMF has threatened to censure the country for reporting false figures.<sup>78</sup> Congress is discussing legal requirements for transactions to be done in pesos. Import controls have reached a point where hospitals and fire departments complain of a shortage of critical equipment. In August 2013 the black market rate for dollars was more than 60 percent higher than the official rate;<sup>79</sup> a year earlier the difference between the two rates had only been a third, people were arrested for selling unofficial dollars, and tax collectors were provided with specially trained dogs that could sniff the ink in US dollars.<sup>80</sup> By the fall of 2012 Argentines were increasingly fleeing the financial sector, hoarding their cash in anticipation of another economic crisis,<sup>81</sup> and finding ways to get their money out of the country.<sup>82</sup>

### *Pricing Policies*

After the economic collapse of 2001 the government froze energy prices in Argentine pesos, and the currency devalued by 70 percent. Despite economic recovery, prices proved to be “sticky,” to the detriment of domestic gas producers as well as transmission and distribution companies. For

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<sup>76</sup> Mark Weisbrot, “Argentina and the Magic Soybean: The Commodity Export Boom That Wasn’t,” *The Guardian*, May 4, 2012.

<sup>77</sup> Eliana Raszewski, “3 Billion Reasons Why Believing Argentine GDP Is Optional,” *Bloomberg News*, September 23, 2013.

<sup>78</sup> Sandrine Rastello and Eliana Raszewski, “IMF to Put Argentina on Path to Censure Over Inflation Data,” *Bloomberg*, September 18, 2012.

<sup>79</sup> “Argentina Stocks, Bonds Extend Gains; Peso Firms on Black Market,” *Wall Street Journal*, September 10, 2013.

<sup>80</sup> Nic Pollock, “New Indec Figures Lead to Predictions of Stagflation,” *The Argentine Independent*, July 23, 2012; “Argentine grains futures market in shock: government wants operations in Pesos,” *MercoPress*, July 28, 2012; Business News America, *Energy in Argentina*, August 2012, 3.

<sup>81</sup> Katia Porzecanski, “Pesos Go Underground as Dollar Ban Backfires: Argentina Credit,” *Blumberg*, October 26, 2012.

<sup>82</sup> Ken Parks, “Argentina’s Shrinking Currency Reserves Point to Further Controls,” *Wall Street Journal*, September 24, 2013.

example, household gas rates are approximately US\$0.75 per million BTUs (MBTU) and the well-head price is US\$2.75, but imported gas from Bolivia is about US\$10.75 per MBTU, and imported LNG is US\$17 per MBTU.

Industrial and commercial electricity tariffs began to slowly rise, with greater increases in 2008 and 2009; but the threat of social unrest in 2009 led the federal government to reverse the increase. Some provincial governments also began raising electricity prices even for residential consumers.<sup>83</sup>

In November 2011, after reelection and facing a deteriorating economic situation, the CFK government began reducing energy subsidies for a few sectors (banks; casinos and gambling companies; airports; ports; mobile telephone firms; mines and hydrocarbon extraction companies; fuel firms; natural gas processors; and biofuel, oil, and agrochemical companies) and a quarter of a million high-income residential consumers. Energy subsidies originally budgeted at US\$16.8 billion for 2012 (equal to 4 percent of GDP) were reduced by only 6.1 percent.<sup>84</sup>

CAMMESA initially subsidized losses, but as these rose, domestic companies suffered. Gas distributor Metrogas had been temporarily taken over by the government in early 2012 in the wake of the company's initiation of insolvency proceedings,<sup>85</sup> and YPF subsequently purchased BG's majority shares in May 2013 to establish control of the company with 70 percent of shares.<sup>86</sup> The government made timid efforts to encourage E&P by creating the Gas Plus program in 2008, which roughly doubled the national average price for gas produced from either new wells or wells that had not been producing since 2004. Incentives proved too little to significantly alter the economics of production;<sup>87</sup> in September 2012 a new hydrocarbons commission reviewed it and in early 2013 tripled the price for new production to \$7.50 per million BTU.<sup>88</sup>

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<sup>83</sup> Economic Consulting Agents, *Argentina-Brazil*, 11.

<sup>84</sup> US Energy Information Administration, *Argentina 2012*, 4, 13-14; Abigail Wilkinson, "Argentina's subsidy cuts a small step to deregulation - Michael Lynch," *Business News Americas*, November 18, 2011.

<sup>85</sup> "Enargas once again extends control over Metrogas – Argentina," *Business News Americas*, February 9, 2012.

<sup>86</sup> "Argentina's YPF acquires control of Metrogas," *GlobalPost*, May 7, 2013.

<sup>87</sup> Wood Mackenzie, "Argentina: Unconventional dawn on the horizon," *Upstream Insight*, May 2011.

<sup>88</sup> Justin Jacobs, "Argentina's hydrocarbon commission to take on Gas Plus," *Petroleum Economist*, September 6, 2012.

*Investment Climate*

The renationalization of YPF kept 49 percent of its shares in non-government hands; France's Total is the leading natural gas producer, with BP (Great Britain), CNOOC (China), Petrobras (Brazil), and Apache Energy (US) rounding out the major foreign players. There are also three significant Argentine private companies involved in natural gas E&P: Pluspetrol, Tecpetrol, and Bidas.<sup>89</sup>

The CFK government utilizes both carrots and sticks to attract foreign capital. To promote power generation, the 2006 Energía Plus (Energy Plus) program required that large users could only purchase more power than in 2005 from companies that were building new plants, expanding their combined cycle plants, refurbishing existing units or incorporating new machinery.<sup>90</sup> YPF is casting a wide net for partners that have expertise in different types of oil and gas fields, experience with unconventional production, technological services, and willing financial partners, including venture capital funds.<sup>91</sup>

The main challenge is the credibility of government policy. In 2011 the government offered oil and mining companies tax breaks amounting to US\$461 million, but in early 2012 the government withdrew them and ordered the companies to repatriate export revenue from the prior year and convert it to Argentine pesos. When Repsol/YPF balked, the government banned the company's exports until it paid US\$8 million in export tax debt. The company claimed that these government actions resulted in eight potential partners in its Argentine shale operations terminating their interest.<sup>92</sup>

The renationalization of YPF is argued to be non-threatening to other private oil and gas companies operating in Argentina because of its unique history as a NOC. Nevertheless, the declaration that self-sufficiency is a "public interest" gives the government wide latitude in the sector; as Juan José Aranguren, president of Shell Argentina, put it: "The concept of public interest is vague, but it provides a legal umbrella for any decision that the executive branch might make that they did not have before, and which could slow down the decisions made by the

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<sup>89</sup> US Energy Information Administration, *Argentina 2012*.

<sup>90</sup> Business News Americas, *Energy in Argentina*.

<sup>91</sup> Ibid.

<sup>92</sup> "Argentine Government Steps Up Pressure, Bans YPF Exports," *Latin American Advisor - Energy*, InterAmerican Dialogue, 2012, 2.



companies.” Victor Bronstein, president of the Association for the Study of Peak Oil and Gas (ASPO) in Argentina, expressed concern that the NOC could be favored by the provinces when it came time to renew their concessions.<sup>93</sup> Certainly, disloyal competition is a real threat, as evidenced by a July 2012 decree that all federal government agencies purchase their fuel and lubricants from YPF,<sup>94</sup> and reports that Energía Argentina SA (ENARSA), the state energy company created in 2004 to compensate for the lack of a NOC, has been consulting with YPF over offshore blocks.<sup>95</sup>

Potential investors in YPF face the danger of legal action by Repsol and YPF shareholder Texas Yale Capital, which in May filed a class action lawsuit in a New York court against Argentina over the expropriation. Repsol has warned that it will pursue legal action against companies investing in YPF.<sup>96</sup> The uncertainty created by Repsol’s threat led Bridas to back away from a December 2012 \$1.5 billion investment with YPF in Vaca Muerte.<sup>97</sup>

The negative investment climate includes a ubiquity of strikes and work slowdowns. For long-term projects this labor situation may be less pressing, but since shale gas requires consistent and expensive drilling, work stoppages can significantly affect the profitability of a project. Argentina’s industrial policy requires domestic sourcing, but Argentine companies cannot produce the requisite quantity of specialized equipment. Even Chinese oil companies are concerned about Argentina’s labor picture, since they have no experience with independent labor unions—in July 2012 CNOOC’s partially owned company in Argentina, Pan American Energy (CNOOC owns 20 percent through its 50 percent holding in Bridas), experienced a two-week strike at the country’s biggest oil field, Cerro Dragon.<sup>98</sup>

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<sup>93</sup> Business News Americas, *EIS August 2012*, 10.

<sup>94</sup> Grace Protopapas, “President Orders Companies to Buy YPF Fuel,” *The Argentine Independent*, July 20, 2012.

<sup>95</sup> Abigail Wilkinson, “Enarsa, YPF mull offshore exploration,” *Business News Americas*, July 30, 2012.

<sup>96</sup> Business News Americas, *EIS August 2012*, 9.

<sup>97</sup> “Argentine oil company finds way to invest in Vaca Muerta and elude legal action from Repsol,” *MercoPress*, October 3, 2013.

<sup>98</sup> “UPDATE 1-Strikers leave Argentina’s biggest oil field,” *Reuters*, July 6, 2012.

The aforementioned currency controls, import restrictions, and mandated investments also diminish the investment climate for foreigners in particular. In short, the investment climate is currently quite negative.

### *Opportunity Costs and Rent Distribution*

Domestic residential consumers have been favored over industry, commerce, and foreign consumers. Domestic use has priority, both legally and politically, since 2004.<sup>99</sup> Without a wholesale economic collapse that discredits high levels of state intervention as occurred in the 1980s, it is difficult to see Argentine support for a government that permits the market to allocate supply.

### *Market Structure*

Distribution within the domestic gas market is competitive, with 9 private gas distribution companies.<sup>100</sup> Open access provisions for pipelines and the requirement that pipeline companies expand capacity to accommodate new supplies (see below) mean that barriers to entry at the distribution level are low. Argentine decisions to seek external supplies for its subsidized domestic market may also create competition for shale gas producers; governments since 2008 have preferred to pay Bolivians and LNG exporters prices significantly higher than those offered domestic producers.

Mineral rights are conveyed to private companies through permits for exploration and concessions for exploitation. Exploration permits come with a fee, require investments be carried out, and carry with them the right to obtain a concession. Concessions have 35-year terms (renewable for up to 10 years), convey ownership of the gas extracted, and provide a right to transport the gas. Since the reservoir remains national property, concessionaires pay royalties—generally 12 percent of the value of the extracted gas, though that can vary. Holders of permits and concessions can lose them if they violate the terms of agreement. There is “usually” a

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<sup>99</sup> EIS, 5.

<sup>100</sup> Amadeo, “Estudio Beccar Varela,” 29.

bidding process for permits and concessions, and participants enroll in a federal register to participate.<sup>101</sup>

Upstream has been competitive; Total is the largest gas producer, followed by Repsol/YPF with 23 percent.<sup>102</sup> Neuquén's state-owned company Gas y Petróleo del Neuquén is provided a 10 percent stake in any new concession in that province.<sup>103</sup> With the nationalization of YPF, this competitive environment could change quickly. As has already occurred, provincial and federal governments can rescind concessions by claiming a concessionaire has "underinvested." A number of concessions will expire in the next decade,<sup>104</sup> and ENARSA has control over all new permits and concessions for offshore blocks<sup>105</sup>—the NOC can be formally or informally favored in the new allocations.

Because subsoil deposits belong to the nation, and gas exploration is a legally enshrined "public interest," landowners cannot prohibit access to the gas. If the landowner objects to the exploration, a court order will provide access to the property, with compensation.<sup>106</sup> This means that access to resources should be less of a legal problem, but could be a political one if environmentalists and indigenous communities protest.

### *Infrastructure Ownership*

Pipelines are licensed under an open access system without discrimination between public or private firms. Excess capacity is allocated through a bidding process, with ENARGAS resolving any disputes. Transmission companies can be obliged to expand their transportation systems if there is a public need and the costs of the expansion can be covered by the tariffs—though that stipulation has not been followed.<sup>107</sup>

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<sup>101</sup> Amadeo, "Estudio Beccar Varela," 29.

<sup>102</sup> Business News Americas, *EIS August 2012*, 18.

<sup>103</sup> Wood Mackenzie, "Argentina: Unconventional dawn on the horizon," *Upstream Insight*, May 2011, 8.

<sup>104</sup> Ibid, 5.

<sup>105</sup> ENARSA, "ENERGIA ARGENTINA SOCIEDAD ANONIMA ( Ley 25.943 )," <http://www.enarsa.com.ar/index.php/en/queesenarsa/72-leyenarsa>.

<sup>106</sup> Amadeo, "Estudio Beccar Varela," 26.

<sup>107</sup> Ibid, 28-29.

### *Land Rights*

ENARGAS authorizes the construction and expansion of pipelines and can grant surface easements when negotiations between transporters/distributors and landowners stall.<sup>108</sup> Easement issues have not been problematic, even as pipeline construction expanded significantly over the past two decades. But as poor communities experience pipeline construction that takes gas elsewhere,<sup>109</sup> and indigenous communities discover that gas lies under their lands, easements will become public policy issues. One Mapuche community interrupted Apache operations to protest the lack of prior consultation and fears about water contamination and desertification. In a locally organized referendum, an Argentine town voted 85 percent against a mega mine project between a Chinese company and the Neuquén state-owned mining company. The Argentine government has not institutionalized the manner through which local concerns factor into exploration and production.<sup>110</sup>

Argentina has not had international controversies with its Latin American neighbors over the multiple cross-border pipelines that have been constructed. Argentina and the UK dispute the Malvinas/Falklands Islands, and the exploration of waters by UK firms—now with a US partner—has become an international issue.

### **Scenario Analysis**

Five alternative scenarios could characterize the politics of Argentina over the short to medium term. The Argentine economy is unlikely to recover high levels of growth given the issues noted in the prior section, so the most likely economic scenarios through the medium term are either a continuation of lower growth and high inflation (“stagflation”) or an economic crisis. Though CFK is restricted to two consecutive terms in office, there was speculation that she might seek a

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<sup>108</sup> Amadeo, “Estudio Beccar Varela,” 28-29.

<sup>109</sup> Marcela Valente, “ARGENTINA-BOLIVIA: Gas Pipeline to Boost Development, Revenues – But Not for Everyone,” *InterPress Service*, April 5, 2011, <http://globalgeopolitics.net/wordpress/2011/04/05/argentina-bolivia-gas-pipeline-to-boost-development-revenues-but-not-for-everyone/>.

<sup>110</sup> Alex Glynn, “Neuquén Town Votes ‘No’ to Mega-Mining,” *The Argentine Independent*, June 5, 2012, <http://www.argentinaindependent.com/currentaffairs/newsfromargentina/neuquen-town-votes-percentE2 percent80 percent98no percentE2 percent80 percent99-to-mega-mining/>; Michael Tanenbaum, “Unconventional Plays: Shale Gas in Argentina,” *The Argentine Independent*, June 20, 2012, <http://www.argentinaindependent.com/currentaffairs/unconventional-plays-shale-gas-in-argentina/>.

constitutional amendment to eliminate that limit. However, CFK's candidates performed poorly in the August 2013 primaries, and we can anticipate that she will not garner sufficient votes in the October 27, 2013 legislative elections to alter the constitution.

Which scenario is operative depends on how Argentines respond in the streets and at the ballot box to the two economic scenarios. Unlike Fernando Henrique Cardoso and Luiz Inácio Lula da Silva in Brazil and the Concertación in Chile, Argentine leaders are less constrained by competitive politics in congress and restrictions on presidential decree powers. Thus CFK's successor will not be pushed to the middle if Peronismo continues to be the dominant force in Argentine politics. The structure of Argentine politics, therefore, makes it extremely unlikely that a Peronist leader would not move to an extreme of the political spectrum, whether left or right. Any change in domestic politics is unlikely to affect the willingness of neighboring markets to accept any surplus Argentine gas, since it would be less expensive than LNG or Bolivian gas; those sources also mitigate the risks of once again purchasing from Argentina.

The most likely economic scenario is stagflation, which will not produce the level of shock that would destroy the Peronist hegemony over Argentine politics. In this context, politics—and thus public policy—could develop in one of two directions.

- *Radicalization of the left wing of the Peronists under CFK's team.* This is the likeliest scenario in the absence of an economic collapse. The president has not looked for a compromise with the opposition in the past year, preferring to use her control of Congress and the law to denounce and punish opponents. Labor will increasingly strike, not against the gas companies in particular, but in protest of their declining living standards; the gas sector will be affected both through labor unrest in the industry and in the associated services. Environmentalists and indigenous groups will use the courts to slow development of shale gas and mining projects. Federally provided incentives (tax and royalty rates, wellhead prices, etc.) to develop the country's shale potential will likely follow the erratic path of the past decade, with incentives offered and rescinded. If the Kirchner team continues to control politics through CFK's second term and potential third term, development will be limited and slow over the next decade.

- *Discrediting of the left wing of the Peronists and the return of a pro-market team reminiscent of the Menem administrations, either in the 2015 elections or if CFK falls to riots in the streets.* Under Menem in the 1980s, privatization of major state-owned companies—including YPF—proceeded quickly. Given the corruption associated with the period and the subsequent economic collapse, a pro-market government today would likely proceed more cautiously. Taxes and royalties would be lowered, domestic content legislation minimized or even eliminated, and the avenues for indigenous and environmentalists to contest the awarding of E&P licenses severely constrained. Emphasis would be on generating revenue via volume subject to tax rather than through percentage of government take. The challenge for a government of this persuasion will be controlling the labor unions and passing environmental legislation that limits the courts' ability to stop projects once approved by the executive branch. A government following policies reminiscent of Menem's presidency would signify that Peronism has shifted rightward once again, thus suggesting that the new president would have the ability to restrain labor and environmentalists. The combination of incentives for investors and government control over politics would stimulate the development of shale gas. But given the instability of Peronist politics, investors will be attracted mainly to prospects with short-term returns rather than full-scale development.

Scenarios that occur under economic collapse will produce more significant policy swings than under a stagflation situation and thus have a greater impact on the development of shale gas.

- *CFK Radicalization:* Under this scenario, government control over the economy will increase. CFK's successors will be inspired by the success of Nestor Kirchner in rejuvenating the Argentine economy with heterodox policies after the collapse of 2001. They will confront the private sector and pursue economic expansion despite the criticism of mainstream economists. Investors will make minimum efforts in developing shale assets, investing in order to hold assets for future development. This pattern of investments will generate greater use of 2011-2012 laws and decrees to force more investment by gas companies or to reallocate their assets to firms that offer to invest more or to YPF. The economic crisis and slow development of shale will produce more labor

unrest in the oil and gas sector, even against YPF, as workers adopt an increasingly strident resource nationalism perspective to interpret the crisis. The nationalist rhetoric will stimulate environmental protest against the “destruction” of the national environment by “foreign interests.” Development of shale gas will be episodic and slow.

- *Menemist Revival:* In an economic collapse there is likely to be a reinterpretation of why the policies of the 1990s under Menem were followed by economic slowdown and collapse. Pro-market forces will benefit even if they don't identify with the Menem government. This pro-market government would embark on economic restructuring and repeal/reform of the legislation of 2011-2012 to attract investors; because of the economic crisis this government would move faster to favor the private sector than would a similar government in a stagflation context. Taxes and royalties would be lowered, domestic content legislation minimized or even eliminated, and the avenues for indigenous and environmentalists to contest the awarding of E&P licenses severely constrained. Emphasis would be on generating revenue via volume subject to tax rather than through percentage of government take. But since the new government would still hail from the Peronist party, investors will fear the future and demand large returns in the short term. Shale gas development would likely develop fastest under this scenario, but without setting the bases for long term development.
- *Argentina without Peronism:* Social upheaval against politicians evocative of the 2001 period in which the rallying cry in the streets was “out with them all” (que se vayan todos) breaks the Peronist hegemony over Argentine politics. The economic crisis would most likely favor a center-left coalition of political forces. There would be efforts to emulate Brazilian development strategy under Fernando Henrique Cardoso (1995-2002) and Luiz Inácio Lula da Silva up to 2008. The market would be given more latitude, but a tax structure to finance public goods would also be developed and independent regulators established to provide credibility to investors and transparency to the Argentine public. This is the best long-term scenario for developing the country's shale resources, though it would be second best to the Menemist Revival in terms of the speed of that development in the short to medium term. Given Argentina's history, such a political system and the governments that come to office will build credibility slowly. Incentives offered for shale development will not be as generous as under a Menemist government.



In conclusion, the lack of credibility of any government policy in Argentina, no matter the government, suggests that investors will focus on operations that can produce the highest returns in the shortest time frame. The signing of an agreement is no guarantee that it will be developed to its potential; Argentine federal and provincial governments have developed tools to seize investments that do not perform to expectations and have used them against private companies as well as against other nations' NOCs. Development of shale gas under CFK and her heirs will be slow and limited to fields that have easy and high yields; under a Menemist, development would be faster but still limited to easy and high yielding field; and only in an Argentina without Peronism could one see a long-term strategy to develop the nation's shale gas resources.