

ON THE BELARUSIAN ENERGY DILEMMA: ECONOMIC, ENVIRONMENTAL AND
GEOPOLITICAL CONSIDERATIONS OF THE NUCLEAR POWER OPTION

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Abstract

The Belarusian government recently announced plans to construct the country's first nuclear reactor near the village of Astraviec in the picturesque forest and lake region of northwestern Belarus.¹ The ambitious announcement comes at a time of ever-increasing energy prices, regional Russian petro-imperialism and a souring of relations between Minsk and Moscow. Unsurprisingly, the proposed Belarusian Nuclear Power Plant (BNPP) project has generated stiff domestic resistance from a citizenry that continues to bear immense public health burdens emanating from the Chernobyl disaster, and which is wary of a potential repeat.

The project has also generated doubts as to its purported capacity to reduce the country's heavy dependence on imported energy resources, particularly natural gas from Russia, as well as to compete with the rates of other gas and oil-fired domestic power plants, calling into question the viability of its *raison d'être*. Moreover, with the first reactor not expected to come online until at least 2016 and the second to follow in 2018, a decade or more is needed before an accurate assessment of this response to Belarus's energy challenges can be made. Nevertheless the project is economically unfeasible in light of Belarus's current economic travails, its provisions for environmental protection are vague, and it is unlikely to result in the heightened independence from external energy providers which its proponents have postulated as legitimizing impetuses behind its construction.

Bearing the sub-optimal, contradictory and illogical nature of the decision of opting for nuclear power in mind, alternative explanations for pursuing such a flawed energy policy must exist, since policy approaches appearing unfounded to outsiders are often grounded in subtle and sound governmental strategy. In the case of contemporary Belarus, I argue that one of these

¹ Astraviec is located fifteen miles from the Lithuanian border – a region unaffected by radioactive fallout from the Chernobyl disaster.

explanations is Lukashenka's insistence on his newfound role as the defender of Belarusian sovereignty – sovereignty which he was ready and willing to surrender in the name of political expediency when Russian-Belarusian political integration via the Union State was a more distinct possibility. Moreover, it must be noted that in authoritarian regimes the flow of information can often be distorted and the truth confounded so as to please the president or other individual ultimately responsible for making key decisions, a factor which likely has influenced Lukashenka's resolute stance on adopting and producing nuclear power domestically.

At present such a stance is premature and should be abandoned. Belarus stands little to gain – both in the short and long terms – by integrating nuclear power into its energy portfolio. Adopting measures to reduce its energy intensity, capitalizing on its endowment of natural resources and expanding its energy networks with external actors will yield greater results for the country both now and in the distant future to come.

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Chapter I. Introduction

Belarus faces enormous challenges over the stability and affordability of its energy supply and security. Since gaining independence with the Soviet collapse, the economic costs of dependence on Russian energy sources has been masked due to massive subsidies which have allowed Belarus to incur a fraction of the costs which other nation-states pay, especially those in the European Union (EU). While advantageous in the short run, this has forestalled development of domestic energy sources and the building of energy networks abroad. Exacerbating the issue is the fact that state officials have poured a disproportionate amount of money generated through subsidization into the development of consumer-based endeavors such as sports stadiums and cultural projects instead of utilizing funds for improving and modernizing production industries in preparation for lean times when such heavy subsidization is lacking. As a result, not only does Belarus remain shackled to Russia for energy, but it is in lockstep with Moscow's economic fluctuations as well.

One of the only bargaining chips Belarus can employ in its dependent defense is to raise tariff duties since twenty percent of Russian gas flows through Belarusian territory and on to EU markets. Now however, Russia is entirely bypassing Belarus as a result of the Nord Stream project which will directly link Russia with EU gas terminals in Germany, eliminating any exigent Russian trepidation over transit tariff hikes.²

Moreover, all reactors at the Ignalina nuclear plant in Lithuania were officially decommissioned as of December 31, 2009 in accordance with Protocol 4 of Lithuania's EU accession agreement.³ This eliminates one of Belarus's few non-Russian energy sources, further

² Nord Stream, http://www.nord-stream.com/ru.html?no_cache=1

³ European Commission, "Accession of the Czech Republic, Estonia, Cyprus, Latvia, Lithuania, Hungary, Malta, Poland, Slovenia and Slovakia to the European Union: Protocol No. 4 on the Ignalina Nuclear Power Plant in Lithuania," <http://eur-lex.europa.eu/en/treaties/dat/12003T/htm/L2003236EN.093100.htm>

jeopardizing its precarious position. Thus the combination of subsidy reductions, a potential freefall in revenue from transit tariffs and the Ignalina shutdown will tighten Belarus's energy supply, marginalize its ability to resist Russian domination and reduce its concomitant ability to absorb the economic costs of obtaining replacement energy from non-Russian sources.

Such dependence has also prevented the establishment of a normalized relationship with the EU while solidifying Russia's economic and geopolitical chokehold. Thus, policy responses in Belarus's energy sector to the three aforementioned dilemmas will likely decide the geopolitical trajectory of Belarus's external relations, placing exponential emphasis on the importance of diversifying not only the sources of its energy imports but its diplomatic and trading partners as well.

In order to properly situate the debate over the construction of the first nuclear power plant in Belarus, I discuss at some length below several background themes critical to comprehending both the contested rationale for the proposed plant and the domestic and international political logic appearing to drive it. I begin by discussing the character of the Lukashenka regime and then proceed to address Belarus's current economic and political landscape. I also examine contemporary Russian-Belarusian and EU-Belarusian relationships by way of setting up the body of the paper during which an investigation into the nuclear power project is presented.

Chapter II: The Lukashenka Regime: An Overview

It is difficult to isolate and analyze any major issue concerning Belarus without at least situating the regime of its authoritarian president, Alyaksandr Lukashenka, especially a national issue as potentially far-reaching as nuclear power development. Notwithstanding his being shunned by the Euro-Atlantic political establishment, his ability to avoid wholesale acquiescence to European calls for socio-political reforms for nearly two decades while concurrently and rigidly resisting immense pressure from Moscow is impressive. Since his rather unexpected victory in the 1994 Belarusian presidential elections, he has successfully entrenched his particular variant of post-communist authoritarianism which Eke and Kuzio have dubbed “authoritarian populism” and, like other long-standing authoritarian and semi-authoritarian leaders, his rhetorical and diplomatic mannerisms have eschewed outward, brazen defiance in favor of an inward, perceptive confidence bordering on arrogance.⁴ Until now he has deftly maneuvered around the obstacles which Euro-Atlantic institutions and nation-states have imposed, including diplomatic travel restrictions and the freezing of financial assets, some accompanied by insulting epithets reflecting Western political frustration over his stubborn persistence in power and surprising popularity.

Political Situation

Lukashenka’s resilience has appeared diplomatically and externally impregnable and his regime’s structure seemingly immune to disruption. His control over the mass media, including press, radio and television outlets, is near absolute, with the one minor exception being allowing the distribution of two opposition newspapers, *Narodnaya Volya* and *Nasha Niva* – a reluctant executive concession in response to demands for an independent press. Additionally, widespread

⁴ Steven M. Eke and Taras Kuzio, “Sultanism in Eastern Europe: The Socio-Political Roots of Authoritarian Populism in Belarus,” *Europe-Asia Studies* 52, 3 (2000): 523.

fraud in parliamentary and presidential elections has further ensured Lukashenka's continued ideological dominance over every aspect of Belarusian politics and civil society, stifling would-be challengers before they can gain any exposure or subsequent traction among the citizenry. Assurances of social benefits and wage and pension increases have helped him maintain a high level of support among the middle-aged and elderly demographics and his newfound protectionist mentality (and in fact his campaign's slogan, "*For Belarus*") vis-à-vis defending Belarusian sovereignty from external forces has proven highly popular. It strikes a modern nationalist chord without directly appealing to the classical Belarusian nationalist discourse (in which opposition groups largely find their common denominator) or alienating the large pro-Russian electorate within Belarus.⁵

As a result of his political stranglehold, Lukashenka's declaration that "in our country, there will be no pink or orange, nor even banana revolution in Belarus," may in fact be validated, at least in the near term.⁶ Indeed, with the exception of relatively small, sporadic demonstrations, Belarus has been comparatively peaceful and quite stable under Lukashenka's heavy-handed governance, especially by comparison with Georgia, Kyrgyzstan and Ukraine – countries in post-communist Eurasia which were successful in engineering revolutions in response to overtly farcical elections that reflected widespread governmental corruption. Contrastingly, it has not endured bloody political upheavals as in Kyrgyzstan or waged a war with Russia as Georgia has. Moreover, it has not experienced the heated divisiveness which has become commonplace in Ukrainian politics and which has exacerbated ethnic allegiances threatening to widen the country's nationally-based schisms.

⁵ Although most often abbreviated for practical purposes, the full slogan reads, "For a strong and progressive Belarus," often adorning everything from billboards to the external facades of governmental buildings.

⁶ Andres Schipani-Aduriz and Alyaksandr Kudrytski, "Banana Revolutions and Banana Skins," <http://www.tol.org/client/article/14432-banana-revolutions-and-banana-skins.html>

Ironically, while Lukashenka's adroit walk on the economic tightrope between geopolitical powers is impressive, much of his contemporary vitality emanates from the vapid weakness of Belarus's domestic opposition groups – entities created to ultimately defeat authoritarianism in Minsk and reorienting the country toward European integration. Given the regime's longevity and concomitant dominance over political institutions, mass media outlets and national security organs, a wholly united opposition maintaining support for a single challenger and possessing and propagating a common ideological stance is crucial if the hope of a regime change is to become a realistic possibility – temporary cohesion among the opposition was the hallmark of color revolutions in other post-Soviet states. Such cohesion would facilitate expanded financial backing from domestic and international institutions and governments currently at odds with Minsk, and likely aid in making election observation more rigorous and transparent.

Yet, Belarusian opposition groups have historically been heavily fragmented and currently find themselves in almost complete disarray, having become increasingly fractious since the last presidential election in 2006 due to disagreements involving the country's future geopolitical orientation and the tenets on which to base a reformist platform. Excitement amongst the opposition was exceedingly high in the run-up to the March 2006 presidential election but its lack of unity precluded a competitive, head-to-head showdown with the incumbent. In the end, three opposition candidates participated in the election, including Western-supported Alyaksandr Milinkevich, Syarhey Haydukevich of the Liberal Democratic Party and Alyaksandr Kazulin of the Belarusian Social Democratic Party.⁷ Of the three, only

⁷ David R. Marples, "Belarus Gears Up For Election," Open Democracy, <http://www.opendemocracy.net/david-marples/belarus-gears-up-for-election>

Milinkevich put up much of a statistical fight, officially receiving six percent of the vote and sixteen percent based on independent polls conducted throughout the campaign.⁸

Amid cooling relations with Moscow over energy supply and payment, Belarus's unwillingness to recognize the breakaway regions of Abkhazia and South Ossetia, its delay in joining the Customs Union with Russia and Kazakhstan and with an external debt crisis looming on the horizon, the 2011 presidential election presents a realistic opportunity for a fully-backed opposition candidate to publically attack Lukashenka's credibility at running the country. Yet, the dizzying array of presidential hopefuls only provides Lukashenka with more firepower as he attempts to assail the opposition's fragility and disunity before the Belarusian electorate. Thus, it appears as if the opposition's rudderless, desultory structure is likely to gift wrap another four years in office for the incumbent, something which would result in an unprecedented fourth term since taking office.⁹

Belarus's Economic Situation in the Context of Its Relations with Russia

While subsidized energy is one positive aspect of its historically close alignment with Russia, given its lack of comparative economic clout, Belarus has never enjoyed an equal playing field with Russia at the negotiating table, notwithstanding attempts by Belarusian officials to paint Belarus-Russian relations with an equal brush, claiming that Russia needs

⁸ Marples, David R, "Lukashenka Admits Rigging 2006 Presidential Election," The Jamestown Foundation, http://www.jamestown.org/single/?no_cache=1&tx_ttnews%5Btt_news%5D=35483&tx_ttnews%5BbackPid%5D=7&cHash=ee4c88b75c

Lukashenka has admitted that the results of the 2006 presidential election were rigged. Ending up with an official total of 82.6%, he reportedly received nearly 93% initially but demanded that the figure be manipulated to appear more realistic to monitors and the general public.

⁹ Some of the more likely opposition candidates and their respective affiliations include Alyaksandr Kazulin, (Belarusian Social Democratic Party), Alyaksandr Milinkevich (Movement for Freedom), Andrei Sannikou, (European Belarus), Ryhor Kastusyou (Conservative Christian Party- Belarusian Popular Front), Yaraslau Ramanchuk (United Civic Party) and Yuri Hlushakou (Belarusian Green Party). Many of these frontrunner opposition candidates will be hard-pressed to overcome the first election obstacle of collecting the required 100,000 signatures to essentially legitimate their respective candidacies, let alone achieve victory over the incumbent. who may or may not overcome the first election obstacle of collecting the required 100,000 signatures.

Belarus as much as Belarus needs Russia. Gradual recognition of this power imbalance and an even slower acknowledgement of the need to establish and fortify relations with the West has been severely damaging to its economic prospects and international reputation, something which Lukashenka has heretofore deftly dismissed with the justifying assurance of a supportive Russia to back him up.

Yet, unequivocal support from Moscow is no longer a foregone conclusion, especially as the 2011 presidential election draws near. Major issues have replaced minor disagreements, such as hesitation over the proposed Customs Union, the so-called “Milk Wars” of 2009 (the halting of milk imports from Belarus in response to its non-recognition of Abkhazia and Ossetia), and the ever-present gas disputes which constitute a major, sharp thorn from Russia’s strongest post-socialist ally. Seemingly seasonal energy quarrels threaten the relationship’s previously unencumbered fluidity and undermine efforts to adopt a common currency, not to mention strain its close military and defense partnership. Such growing distance was once considered unthinkable, but the two parties have muzzled former talk of an actual Union State, resulting in a slightly more relaxed relationship with the EU and a diplomatic victory for Minsk as it continues its game of playing off its neighbors to maximize economic leverage.

Internally, due to the disjointed nature of the political opposition whose unresolved ideological and organizational disputes ironically and unintentionally fortify the current political establishment, the regime’s authoritative position is secure. No wholesale collapse or revolution akin to others along the former Soviet periphery is foreseeable in the short term. The stark challenge is whether Belarus can continue to deftly exploit its relations with one nation-state at the expense of others, maneuvering around EU demands for political and economic liberalization long enough to procure international financial assistance, all without further damaging its

preferential ties with Russia. Endogenous and exogenous economic pressure are mounting and without opening up the country to lucrative foreign investments, privatizing Belarusian enterprises and securing continued energy subsidies from Moscow, the unfolding of a fiscal situation similar to the recent debt crises in southern Europe, and even complete insolvency, remains a distinct possibility.

Yet Belarus has historically enjoyed relative economic stability as GDP growth has been brisk and living standards decent in the post-socialist sphere. In 1999 for instance, its per capita GDP of \$6,485 trailed that of Russia by a mere \$330, partially the result of Russia's 1998 financial default.¹⁰ During Soviet rule, the Belarusian Soviet Socialist Republic (BSSR) enjoyed a comparatively high standard of living among its socialist compatriots, owing to heavy investments in the machinery, technical and transportation sectors which provided steady employment and infrastructural modernization. However with the Soviet demise, not only did the massive flow of investment from Moscow slow to a trickle, "top-notch" Belarusian products could not compete in European markets, rendering a fiscally crippled Russia as its primary importer. Thus, Russian investment veiled the BSSR's economic indicators there and then, and Russian subsidies and transit tariffs veil independent Belarus's economic indicators here and now, rendering the so-called economic miracle a mere mirage and lending but little credibility to Lukashenka's market-socialist command model.

Accordingly, Belarus's current economic issues largely emanate from its reliance on Russia for natural gas and oil, the quintessential motivation behind the BNPP. Belarus's economic survival is pegged to what has in reality become tangible Russian altruism in the form of heavily subsidized energy supplies, especially natural gas, illustrated by the fact that as of

¹⁰ Patricia Brukoff, "The Belarusian Economy: Is It Sustainable?" in *Independent Belarus: Domestic Determinants, Regional Dynamics, and Implications for the West*, ed. by Margaret M. Balmaceda, James I. Clem and Lisbeth L. Tarlow (Cambridge, MA: Harvard University Press, 2002), 111.

2004 gas made up over sixty percent of the country's Total Primary Energy Supply (TPES). Moreover, over ninety-five percent of Belarus's electricity production is from natural gas,¹¹ further magnifying the criticality of energy subsidies and the desperate need to meet the country's energy requirements through domestic sources, which as of 2005 did not even reach seventeen percent.¹²

Spats between Minsk and Moscow invariably involve energy, whether they pertain to supply security, processing and refining regulations or rate negotiations and duties. Belarus wields minimal negotiating power and has increasingly turned to rhetoric laced with pleas for fairness in an apparent attempt to pull at the familial heartstrings of the Belarusian-Russian economic and historical brotherhood. It has essentially turned to a form of begging in an attempt to retain a sort of special status in the eyes of Russia's petro plutarchy and keep the favorable subsidy scenario intact, and for good reason: in the case of energy subsidy cessation Belarus's economic situation will immediately and severely deteriorate, rendering fiscal solvency impossible.

Even though some improvement over the poor, recession-based performance of 2009 is creating a more robust economic growth scenario for 2010, current economic conditions are nevertheless unstable. The country has become increasingly reliant on international financing mechanisms from Russia and the International Monetary Fund (IMF) to avoid economic turmoil, external help that cannot continue indefinitely. It recently concluded a \$3.44 billion stabilization program arrangement with the IMF and the possibility exists for a follow-up arrangement, although this would necessitate expanded Belarusian economic liberalization and enterprise privatization, something which Belarus is reluctant to commit to but which will generate

¹¹ Margarita M. Balmaceda, *Belarus: Oil, Gas, Transit Pipelines and Russian Foreign Energy Policy*, ed. Kevin Rosner (London: GMB Publishing, 2006), 7.

¹² *Ibid.*, 16

desperately needed cash reserves and limit its external debt, now hovering above fifty percent of GDP.¹³ Further exacerbating its debt contagion was a \$2 billion stabilization loan from Russia in 2008, the last \$500 million tranche of which Russia has refused to pay, echoing the relationship's instability.

The most telling harbinger of Belarus's economic realities has been the gas crisis of June 2010 over the non-payment of gas deliveries. Instead of paying \$169 per thousand cubic meters of gas during the first quarter of 2010 or the agreed amount of \$184 per thousand cubic meters during the second quarter, both of which are substantially below the international market price, Belarus has insisted on a rate of \$150, the extrapolated difference of which corresponded to the debt of \$192 million owed to Gazprom. On June 16 Gazprom insisted that the debt be settled or the gas supply would be cut, beginning with a fifteen percent reduction and rising as high as eighty-five percent until the payment was settled.¹⁴ Minsk countered by demanding payment of \$217 million for unpaid transit duties, and proceeded to close pipelines running through its territory and on to European markets.¹⁵ As of this writing both countries have paid their respective debts and a tentative truce has been struck. Nevertheless, a rate of \$250 per thousand cubic meters likely awaits the Belarusian authorities for the first quarter of 2011 and the continued souring of relations will likely eliminate any continued goodwill toward Belarus. In short, from now on it would appear that in contrast to the past, Russia's prices may just be non-negotiable as Russian leaders' agitation with Lukashenka rises. Even worse for Minsk was the fact that it simply did not have readily available funds – the payment was made only after securing a loan from Azerbaijan.

¹³ Marples, "Belarus Gears Up For Election"

¹⁴ RIA Novosti, "Belarus Warns Europe of Possible Gas Transit Disruptions," <http://en.rian.ru/world/20100621/159519845.html>

¹⁵ Ibid.

Belarusian authorities began selling off stakes of the pipeline operator Beltransgaz to Gazprom, the Russian state gas monopoly, in June 2007 for a reported \$2.5 billion.¹⁶ Now, in a desperate attempt to procure continued subsidization of gas and oil imports, Lukashenka is ready to cede complete control over Belarusian pipelines as well as the Mozyr oil refining plant, a move clearly reflecting a regime with minimal options at its disposal. The hard truth for the Belarusian authorities is that they have never paid the full international price for natural gas from Russia and are already receiving a substantial thirty percent “discount” in 2010 compared to what countries in the EU are paying – and it still cannot meet its financial obligations.¹⁷ By way of example in Yushchenko’s Ukraine, Russia charged a rate four times higher than that of Belarus due presumably to Ukraine’s pro-Western political orientation.¹⁸

A controversial situation is unfolding over oil imports as well. Contractually, in 2009 a sixty-five percent discount was applied to the roughly 21 billion tons of oil which Belarus imported; however, Russia has proposed to alter this arrangement, calling for any imports above 6-9 billion tons (a volume considered sufficient to satisfy domestic requirements) to be subject to full duties.¹⁹ Lukashenka has vociferously criticized this proposal even though duties are only imposed for excess oil which Belarus imports at discounted prices then subsequently re-exports at European prices. The re-exporting of an average of 14.5 billion tons of crude at Mozyr and Naftan nets nearly \$2 billion in hard-currency annually, representing a stunning profit margin.²⁰

¹⁶ Gazprom. “Gazprom and the Republic of Belarus Sign Purchase and Sale Agreement for Beltransgaz Shares,” <http://www.gazprom.com/press/news/2007/may/article63814/>

¹⁷ RIA Novosti, “Russia Pledges 30-40% Discount on Gas for Belarus in 2010,” <http://en.rian.ru/russia/20091123/156957373.html>

¹⁸ Balmaceda, 25.

¹⁹ The Economist Intelligence Unit, “Belarus Economy: Russia Turns the Screw,” http://www.eiu.com/index.asp?layout=VWArticleVW3&article_id=1125179697®ion_id=&country_id=150000015&refm=vwCtry&page_title=Latest+analysis&rf=0

²⁰ Alex Anishyuk, “Transneft Warns of Belarus Oil Cuts,” <http://www.data.minsk.by/belarusnews/012010/172.html>

This enterprise and the concomitant cash it generates has helped facilitate Lukashenka's social promises of timely pension payments and steady yet unsustainable wage increases for state workers. These social programs have boosted the president's popularity and protected him at the ballot box, and the inability to continue fulfilling these promises would be severely damaging. Belarus has countered with promises to increase the oil transport fee, but in order to entirely offset duty increases, the current charge of \$3.90 per ton on nearly a million barrels per day would have to rise exponentially to as high as \$40 per ton, something the Russians in their position of power will simply refuse to do.

A lack of consensus regarding the payment of oil export duties and an increase in transit fees slowed Belarus's ratification of the Customs Union (CU) with Russia and Kazakhstan, but it has since ratified the Customs Code document.²¹ The EU has been critical of the CU, declaring it likely to inhibit both Russia and Belarus's accession plans to the WTO, a development that could have resulted in a marked Western reorientation for Belarus's economy if it had ultimately refused to concede to Russian demands over the oil duties and not joined. The CU became effective earlier this month, establishing common tariffs for foreign trade with non-member countries while eliminating customs borders to accelerate economic transactions among the three member states, but stopping short of currency commonalities or serving as a free trade area until January 1, 2012 when the introduction of a single economic space is expected to come into effect.

Consistent pleas for Russia to eliminate duty taxes on oil would be justified from the perspective of the new union if Kazakhstan was receiving oil for domestic needs duty-free but this is not the case. Bearing in mind Belarus's wholly dependent position vis-à-vis energy supply, that it gets natural gas at an almost absurdly low price and any duty-free oil at all in this

²¹ RIA Novosti, "Belarus to Join Customs Union July 1," <http://en.rian.ru/world/20100604/159302271.html>

equation is very, very fortunate. Thus, the temerity of demanding more 'equitable' conditions could have been met with a harsh response from Moscow, including outright exclusion from the CU and optimal energy developments in the future.

Chapter III: EU-Belarus Relations

For virtually his entire tenure at the helm of the Belarusian state, ensuring cozy relations with the Russian Federation has been Lukashenka's primary foreign policy *modus operandi*, and his means of political survival amid the relative chaos largely defining the post-Soviet space. In a calculated fashion he embarked on a pro-Russia agenda early on, not hesitating to declare his regretful nostalgia over the collapse of the USSR, similar to the sentiments of Vladimir Putin.

Having secured allegiance with Russia, icy indifference defined its relations with the EU, with only brief thaws interspersed since Lukashenka seized the reins of leadership in 1994. Envisaging expanded political might, Lukashenka lobbied hard for the creation of a Union State with Russia, a bold yet unsurprising endeavor that has thus far failed to fully materialize except in further alienating Minsk from Brussels' entreaties for reform in the areas of human rights and diplomatic and economic transparency.

The Union State was to be defined initially by close economic, monetary and security cooperation and potentially conclude with full political integration, presupposing the loss of Belarusian sovereignty and essentially incorporating the country as Russia's ninetieth province. Lukashenka harbored no resentment at being Moscow's dutiful lemming as long as the role carried the concomitant perks of favorable bilateral trade conditions, continued support for his rubber stamped reelection campaigns and, of course, ongoing energy subsidies.²²

Understandably, such an inveterate pro-Kremlin geopolitical orientation carried the opportunity cost of closer European integration since the short-term economic gains that cheap energy ensured apparently outweighed the uncertainty of long-term, Western economic and socio-political alignment. Poland, the Baltic States and others eagerly turned their respective backs to the crumbling Soviet experiment and the freedom-usurping misery which its ideology

²² David R. Marples, "Is the Russia-Belarus Union Obsolete?" *Problems of Post-Communism* 55, no. 1 (2008): 25.

produced. However, Belarus's lack of an influential independence movement such as the Polish *Solidarity* or the *Sajudis* movement in Lithuania rendered it geopolitically disoriented and disorganized, a condition which Russia – in dire need to strengthen its orbital sphere in the wake of tempestuous secessions from the USSR – seized upon, and to which Minsk, limping into the July 1994 presidential election fresh off a turbulent, three-year stint at democracy under Stanislav Shuskevich – was eager to embrace.

Until recently, EU-Belarus relations have been cold due to Lukashenka's heavy-handedness and the associated lack of independent media freedom, harassment of opposition activists and NGO's, ill treatment of political prisoners and state interference in virtually all areas of civil society and business – in short, due to his breaching of the norms and values which the EU espouses and actively exports. Nevertheless, brief thawing periods have occurred; for example, in early 2009 when the Council of the European Union lifted visa sanctions previously leveled against key Belarusian officials, due to slight concessions on the part of Minsk. However, such concessions are not overly sincere or permanent and are often followed by an unleashing of excessive executive authority after the country gets what it was after.²³ Often the regime will make concessions in one area while repressing in another in a sort of schizophrenic obdurateness, lest the opposition entertain any notions of authority being relinquished. This tactic has severely crimped Western diplomatic efforts and frustrated bilateral objectives.

Complicating matters, the EU has ballooned to twenty-seven members and is beset by an avalanche of problems. Monetary crises, unprecedented bureaucratic complexity and growing demands commensurate with administering such a vast international entity nearly bursting at the seams of its collective, adaptive capacity limit its ability to deal with issues outside of its

²³ Belarusian Institute for Strategic Studies and the Office for a Democratic Belarus, "New Framework toward Normalisation of Relations Between the European Union and Belarus," http://www.democraticbelarus.eu/files/docs/Plan_of_Actions_on_Belarus_16%20February_Final.pdf

immediate domain. Debt crises in Greece, Portugal, Spain and others threaten to undermine EU cohesiveness and stimulate a true economic recovery premised not on the fallacy of bureaucratic expansionism but on private sector development, forcing the EU to examine itself and its institutions from a more inner-directed standpoint.

Nevertheless, the norm exporting effort of the EU continues, especially along its eastern periphery where the need for creating geopolitical insulation against an unpredictable Russia and viable threats from the Middle East is palpable. These efforts are formalized under the aegis of the European Neighborhood Policy (ENP) and, especially critical for Belarus, the Eastern Partnership (EP) to which it was surprisingly invited in May 2009 in Prague.²⁴ With the extension of financial and technical assistance premised upon the implementation of such reforms through the ENPI and other mechanisms, the critical axiom of the ENP is to “reward those states that help themselves,” something which Belarus – at least in the eyes of the Europeans – has not been keen on doing until yet another round of difficulties with Russia arises.²⁵

In its *Country Strategy Paper for 2007-2013* on Belarus, the EU repeatedly declares its policy of conditionality in extending the full benefits of the ENP, especially in the energy and private sectors – two sectors in which Belarus is in desperate need of the investment which such financing schemes could alleviate. In the case that reforms are introduced, assistance programs will be expanded and “significantly more funds [will] be granted to Belarus” in policy areas

²⁴ Although inclusion in the EP represents significant diplomatic progress, it should be noted that with what would otherwise be considered a momentous step, the Belarusian president did not even make the trip.

²⁵ Fraser Cameron, *An Introduction to European Foreign Policy* (New York, NY: Routledge, 2007), 110.

beyond the current two priority areas of ‘social and economic development,’ and ‘democratic development and good governance.’²⁶

That such financial incentives come with the attached cost of reform is obviously expected but Belarus has been unwilling to pay that price, resulting in the absence of the necessary PCA agreement and subsequent action plan, not to mention an associate agreement or contractual, bilateral agreement, all of which Moldova, Ukraine and other states enjoy. Realizing that Minsk’s two-faced, non-committal maneuvering had thwarted the forces of Western democratization for fifteen years and that its efforts had failed, the EU has been forced to revamp its approach from seeking regime *change* through “coercive diplomacy” and “hard conditionality” to one of regime *evolution* through “open diplomacy and “soft conditionality,” with Belarus’s inclusion in the EP serving as evidence.²⁷ Certainly, Minsk will respond more favorably to inclusion than isolation, to rapprochement over negligence. And the plight of Belarus’s domestic energy situation, together with its economic woes, provides a timely impetus for cooperation. Just as energy dictates the nature of its relationship with Russia, so too will it dictate EU-Belarus relations and the tempo at which they are cultivated. Yet the well-worn tactic of “two-sided geo-policy” wherein Belarus cautiously plays off Russia and the EU in an attempt to satiate its most pressing demands without straining its relations with the other is not a permanently feasible position to maintain.²⁸

²⁶ European Commission, “European Neighborhood and Partnership Instrument: Belarus. Country Strategy Paper, 2007-2013 and National Indicative Programme, 2007-2010,” http://ec.europa.eu/world/enp/pdf/country/enpi_csp_nip_belarus_en.pdf

The allocation of funds through the ENPI constitutes 20 million Euros for the 2007-2010 period, with 70% allocated for the purpose of ‘Social and Economic Development and 30% dedicated towards ‘Democratic Development and Good Governance.’

²⁷ Balmaceda, Margaret M., Sabine Fischer (ed.), Grzegorz Gromadzki, Andrei Liakhovich et. al., *Back From the Cold? The EU and Belarus in 2009* (Chaillot Paper No. 119). European Union Institute for Security Studies, November 2009.

²⁸ Pavel Usov, “Illusion of Two-Sided Geo-Policy in Belarus,” *Bell* 1-2, no. 1 (2009): 1.

Energy policy, then, is the core component of the Belarusian international posture. Energy efficiency and security is one of the flagship initiatives of the EP as the European Commission has outlined, and the EU's energy security is likely *the* driving force behind its engagement with Belarus. With three EU members on Belarus's borders and twenty percent of its gas and over sixty percent of its oil flowing through Belarusian territory, the EU knows that Belarus is vital to its energy interests, if for nothing beyond sheer geography. Yet, its special "four points" program attests to the necessity of maintaining energy alliances with Russia, and it is aware that while gas supplies to its member-states can be disrupted in the wake of a gas dispute, Belarus can be circumvented by diverting supplies to Ukraine (which would not be the least dismayed with the additional transit tariff revenue) or eventually through the Nord Stream pipelines directly linking Russia with German terminals.²⁹ Furthermore, it must know the delicate nature of the triangular energy relationship since, like Belarus, the EU is woefully dependent on Russian supplies and pushing for a joint, common market among EP members could create tension with its own supply relationship with Russia.

In these introductory sections I have sought to provide an overview of the character of the Lukashenka regime as well as an analysis of its attempts to serve as a diplomatic, economic and geopolitical bridge between East and West through examining its regional relations with the EU and Russia, centered on concerns over energy. With this background established, I now address the main thrust of my analysis, namely Belarus's endeavor to introduce nuclear power to its domestically-produced energy portfolio, beginning first with a historical survey of nuclear power in the region – a history marked by the ominous shadow of the Chernobyl disaster.

²⁹ During the most recent gas dispute in June 2010, the only EU member to experience a significant drop in gas supply was Latvia, which reported gas volume decrease of 30%.

Chapter IV: Belarus and Nuclear Power: Rumbblings of a Rebirth

The construction of the first civilian nuclear power station in 1954 at Obninsk, a nuclear research facility outside Moscow began a veritable boom period during which the Soviet Union aggressively promoted the commissioning of a host of reactors throughout the Armenian, Lithuanian, Russian and Ukrainian SSR's.³⁰ At the time of the Chernobyl disaster in 1986, over 45,000 megawatts of aggregate nuclear capacity were in the planning or construction phases, signaling sincere Soviet commitment to continued civilian applications of nuclear power.³¹

The Belorussian SSR was largely bypassed during this burst of nuclear advancement and construction. After all, it was surrounded on three sides by nuclear reactors in Russia, Lithuania and Ukraine, reducing the apparent need for one in the BSSR. Yet, the republic was not completely ignored in the energy sphere, as one nuclear reactor twenty miles east of Minsk was in the planning stages in the mid-1980's only to have plans scrapped in 1988 as a consequence of the Chernobyl accident, matching the fate of a multitude of other Soviet nuclear plants at various stages of design or construction.³²

Belarus did not possess nuclear fuel, waste or storage facilities when the Soviet Union began its swift and tumultuous collapse, a stark comparison to neighboring Ukraine which inherited a wealth of nuclear energy resources that aided its energy sector in its post-Soviet transition. Even now, Belarus only possesses two small underground gas storage facilities, at Brest and Osipovichi, with an aggregate volume of .66 billion cubic meters (a third facility at Mozyr is under construction). This volume constitutes less than a one month supply, exposing

³⁰ David R. Marples, *Nuclear Energy and Security in the Former Soviet Union* (Boulder, CO: Westview Press, 1997), 22.

³¹ *Ibid.*, 23

³² *Ibid.*, 35

Belarus to disruption.³³ In any case, when Belarus declared political independence in August 1991, its experience with nuclear power was limited and it possessed no physical or technological foundation on which to accelerate the development of a viable nuclear industry.

With the exception of meetings on the subject with both Russian and Western officials in 1994 and preliminary decisions on possible sites for a nuclear reactor several years later, no serious progression toward nuclear power generation within an independent Belarus's energy portfolio transpired.³⁴ Furthermore, Belarusian authorities resolved to adhere to a ten-year moratorium in 2002, proclaiming that the country would instead purchase the electricity from Russia.³⁵ Thus, with the memory of Chernobyl still fresh and a new moratorium in place, it appeared likely that the fate of domestic nuclear energy production in Belarus was sealed.

However, diplomatic resolve gave way to economic reality. With escalating energy costs and an entrenched dependence on Russia for nearly all of its imported energy resources, the Belarusian president repealed the moratorium, calling for the construction of a domestic nuclear reactor in his "*Conception of Energy Security and Increased Energy Dependence in Belarus, 2006-2010*," a national roadmap for procuring greater stability and diversification of energy supply.³⁶ It was the sanctioning of this five-year plan, necessitated by inevitable rises in international natural gas prices, which has projected the BNPP into the Belarusian socio-economic and geopolitical discourse which, by virtue of its ideological underpinnings, projects the project's possible ramifications onto a wider regional dimension.

³³ Katja Yafimova, "Belarus: The Domestic Gas Market and Relations with Russia," in *Russian and CIS Gas Markets and Their Impact on Europe*, ed. Simon Pirani (New York: Oxford University Press, 2009), 143-144.

³⁴ David R. Marples, "The Energy Dilemma of Belarus: The Nuclear Power Option," *Eurasian Geography and Economics* 49, no. 2 (2008): 219.

³⁵ *Ibid.*, 219

³⁶ *Ibid.*, 219

Barring an economic meltdown, massive civil unrest or other domestic upheaval, the project is scheduled to proceed swiftly, ensured and accelerated with the backing of the authoritarian dictatorship. Compared to other power options and in the context of domestic efforts to reduce energy consumption and diversify supply, the underlying concern is whether the BNPP is the best course of action when considering its potential ecological, geopolitical and socio-economic ramifications, and to what extent it stands to alleviate the country's long-term dependence on foreign energy sources.

At first glance, the existence of a nuclear reactor in northwestern Belarus may not appear to constitute an issue of international geostrategic importance. Yet, civilian nuclear capabilities at the disposal of a stubborn and crafty leader who has developed strong ties with other authoritarian leaders in the international community such as Venezuela's Hugo Chavez and Iran's Mahmoud Ahmadinejad is troubling.³⁷ Furthermore, when examined from a regional perspective, the BNPP has the potential to redefine the economic configurations and interrelationships of the Baltic States insofar as the export and import of electricity is concerned, potentially revitalizing fairly dormant working relationships between these states and Belarus.

The project's very design is geopolitically charged. Illustratively, Belarus initially entertained participation and reactor designs from numerous foreign entities, including Toshiba and Westinghouse, before granting the contract to AtomStroyExport, a Russian firm based in St. Petersburg. Since then however, the vacillation has intensified due primarily to financial

³⁷ Most recently, Lukashenka and Chavez closed a controversial deal through which Belarus would supply Venezuela with radar and other military equipment, while Belarus would receive oil, badly needed from a country other than Russia.

considerations, as both China and France have recently pursued contract negotiations with Minsk, drawing intense ire from Russia.³⁸

Given Belarus's increasingly persistent rhetoric that Russia is attempting to usurp its sovereignty through economic coercion, selection of the design type constitutes a potential microcosm of a macro geopolitical struggle between Russia and the West for Minsk's allegiance, something that historically was an afterthought but which is gaining in significance vis-à-vis energy supply and security. A non-Russian design would present an opportunity for the EU to assert its normative influence on Belarusian socio-political institutions by dangling financial carrots available through the mechanisms of the ENP and EP. At the very least it could stimulate negotiations for the development of an ENP-based action plan and bilateral relations with the EU, elements which Belarus has never enjoyed.

Notwithstanding these fundamental issues, they are nevertheless tangential to the socio-economic impacts which completion of the project could exert on domestic issues. Economically, the project will deepen the Belarusian administration's enormous debt and expand its loan commitments to Russia, even though the BNPP will result in significant reductions in yearly expenditures for Russian gas. Ecologically, although it could marginally reduce Belarus's greenhouse gas emissions thanks to nuclear power's light carbon footprint, a major malfunction could devastate the largest remaining primeval forest in Europe and decimate the local ecotourist industry. And even in the case of stringent enforcement of all codes, laws and regulations set forth by the IAEA (to which Belarusian officials claim to assert allegiance), water sources used in the plant for energy production processes and cooling could foreseeably warm these sources, negatively impacting fish stocks and the potability of local drinking water.

³⁸ Russia has refused to work with the Chinese on any joint venture within Belarus out of the fear of potentially having to reveal technical secrets.

Psychologically it could strengthen the so-called “nuclear renaissance” in the region or serve to escalate and concretize the public’s justifiable aversion to it due to Chernobyl. No matter the case, the BNPP has the potential to heavily impact and reorient the country’s socio-economic and socio-political trajectories.

According to the Belarusian Foreign Ministry, motivations for constructing the BNPP include reducing the overall cost of domestic energy production, creating energy export opportunities throughout Eastern Europe, limited local energy resources, diversifying energy supply options and decreasing imported supplies of both natural gas and oil.³⁹ While all of these constitute legitimate reasons for implementing energy reform, especially amid strains over natural gas subsidies and the decommissioning of the Ignalina NPP in Lithuania in December of 2009, the viability of introducing nuclear power into the exigent energy portfolio is premature and ultimately unnecessary, something to which both logic and the emerging literature both attest. With a badly outdated and inefficient energy infrastructure, not to mention the stratospheric price tag of implementing nuclear power for a country which cannot even pay its gas bills without foreign intervention, Belarus has no business considering such a scenario.

Even though nuclear power is increasingly popular in developing countries such as China and India, and with new projects springing up in Finland, Lithuania and Russia, Belarus has little in the way of existing infrastructure, storage and waste facilities or technical expertise to carry out the plant’s construction and maintenance, necessitating heavy foreign involvement. In a time of global financial turmoil and uncertainty, now is not the time to merely hope that initial estimates pan out and the plant proves its viability in reducing foreign resource dependency. For no other reason than prevailing economic conditions and Belarus’s currently shaky fiscal and

³⁹ Ministerstva Inostrannikh Del Respubliki Belarusi, “Stroitel’stvo AEC v Belarusi,” <http://mfa.gov.by/ru/multilateral/approaches/energy/>

monetary disposition, nuclear power should not even be the last option; rather, it should be expunged from all domestic production scenarios. Less costly initiatives such as modernizing traditional power plants, introducing energy saving programs and exploiting Belarus's biomass, solar and wind power capabilities deserve special emphasis, since much of the infrastructure is in place and the initial capital investment would pale compared to the costs of nuclear power, not to mention the fact that such initiatives are specifically tagged for special funding for the EU's periphery through the EP.

This paper will provide a broad investigation of the BNPP's practicality and a course of action oriented toward nuclear power generation in Belarus generally, drawing on the input of scholars and government officials alike who are intimately involved with the project's ongoing deliberations. Furthermore, it will briefly address some of the fundamental motivations for and implications of Belarus as a nuclear state and situate them in their ecological, socio-economic and geopolitical contexts. Moreover, it postulates that nuclear power – although an essentially carbon-free energy source and an established, realistic option for a number of countries worldwide – will not adequately solve any of Belarus's pressing energy challenges and should only be pursued long after more immediately pressing domestic energy considerations are met.

Consequently, due to exorbitant initial costs necessitating international loans, deepened contractual obligations with Russia at a time of increasing tension between the two countries, and stiff endogenous and exogenous resistance to the project, mostly on ecological grounds, a more logical course would be to curb the nuclear effort in favor of modernizing production facilities, reducing domestic energy intensity and expanding international energy import options to more fully rely on European networks. Such approaches portend the two-fold effect of

maintaining and improving international diplomatic relations without national budget implosion, all while shoring up the country's energy security.

As could reasonably be expected, the embryonic literature on nuclear power development in Belarus – from the twilight of the Soviet period to the present – reflects a distinct demarcation between advocates and detractors – and the opposition is vociferous as the government's insistence. Issues as hotly contested as nuclear power plants, especially when their proposed location is, to use an aphorism of the anti-nuclear community, in their own "backyard," are often accompanied by almost comical inconsistencies, and rhetoric from both sides vis-à-vis the BNPP is no exception. For instance, while official government organs declare the plant to be a sensible solution and the country's only option to alleviate its dependency, independent analysts note that wide investment in nuclear energy in the Belarusian context is wholly unfeasible, adding that Belarus simply cannot afford to allocate staggering sums toward a controversial project with quite unpredictable returns, both economically and politically.⁴⁰

Such schisms are increasingly common: anyone associated with representing the government's position, be they high-level ministers, scientists at federally-funded institutions such as the National Academy of Sciences or otherwise, nearly unilaterally and unequivocally hail the project as the solution to Belarus's energy shortcomings. However, independent actors not entangled in Minsk's statist machinery convey substantially greater pessimism and skepticism, raising serious concern as to the BNPP's feasibility at a time when global financial markets as well as Belarus's production industries are still reeling from the global recession. By way of example, in answer to inquiries involving the type of reactor to be used at Astraviec, Dmitry Alekseev, the project's main engineer, reflected the project's geopolitical overtones and

⁴⁰ K. Hirschhausen and E. Romyantseva, "Ekonomicheskiye Aspekty Razvitiya Atomnoi Energetiki v Belarusi" (paper presented at the international conference "Energetika Belarusi: Puti Razvitiya," Minsk, Belarus, November 2, 2005).

the government's spirit of one-upmanship when, in answering a question on the reactor's safety components, proudly declared, "If Japan has a fourth-generation reactor, then ours is a fifth-generation [reactor]. Japan does not possess such safety systems as we do."⁴¹ Furthermore, speaking on the plant's safety level he indicated that no comparison exists in the West, and that the BNPP will be unlike anything being built in the West.⁴²

These statements are as absurd as they are comical. One only need examine the project's sketchy environmental impact assessment (EIA) to recognize that perhaps one of the reasons why such a reactor is not being constructed in the West is because of its lack of wide use in practical applications, and that the safety systems are, contrarily, not up to par with Western regulations and standards.⁴³

The well-worn tactic of polarizing the populace with "us vs. them" comparisons may have worked when Soviet citizens were carefully groomed ideologically, but the availability of independent information now enables the average citizen to detect the masquerade and arrive at his or her own conclusions. If the quintessential motivator behind the plant's construction is greater energy leverage and being less beholden to Russia as Lukashenka has repeatedly insisted, than opining on the plant's supposed superiority to Western models is perverse. After all, Belarus is grappling with Russian dominance and such rhetoric, especially concerning the crucial element of safety and the population's sorrowful experience with the lack thereof due to Chernobyl, is merely postulated in the hope of swaying a deeply skeptical Belarusian citizenry, not to mention those of neighboring Lithuania and Latvia who have come out in open resistance against the project.

⁴¹ Directsiya Stroitel'stvo Atomnoi Elektrostansii. "Atomnaia Elektrostantsiya v Voprosakh i Otvetakh," http://dsae.by/ru/voprosy_otvety

⁴² Ibid

⁴³ At present, only two reactors similar to those proposed for the BNPP are currently in operation, in China.

Chapter V: Major Arguments of the Pro- and Anti-Nuclear Lobbies

Below I investigate the BNPP's practicality through the lens of this widening schism, elucidating the primary arguments for and against it as propagated by sources on both sides, beginning with the pro-nuclear lobby: The following are several common, general themes which the pro-nuclear (primarily governmental) lobby is advancing in its respective analytical approaches to the subject:

- Regardless of reactor type or origin – VVER, RBMK (both Russian), Chinese or French, the BNPP will unequivocally boost Belarus's domestic production capabilities and lower its demand for external energy imports. In short, it is argued that it will significantly heighten the country's level of energy independence, ultimately reducing costs. Additionally, it will open up opportunities for excess energy export, especially considering Ignalina's recent decommissioning;⁴⁴
- The presence of a nuclear plant will benefit the local rural economy by providing employment directly at the plant and in the service industry which the plant's construction and ongoing operations will necessitate;
- The BNPP is technologically-advanced and therefore does not pose a significant threat to the area's ecology. In the event of a nuclear accident, contamination and radiation poisoning will be minimal;
- Domestic nuclear power will help ensure that Belarus meets its commitments per its ratification of the 1997 Kyoto Protocol by significantly reducing its share of industrial greenhouse gas emissions; and
- The cost of energy production via nuclear power is competitive with more conventional, fossil fuel-based forms of energy, including that produced through existing oil and gas-fired power plants. Its price competitiveness thus renders it an obvious option to buttress domestic energy independence while simultaneously reducing GHG's, benefits which existing domestic options cannot claim.

⁴⁴ The VVER and RBMK are Russian acronyms representing pressurized water reactor and light water graphite reactor, respectively.
World Nuclear Association, "Nuclear Power Reactors," <http://www.world-nuclear.org/info/inf32.html>

Like those supporting nuclear power development, the opposition has also promulgated their research findings and prevailing sentiments in an effort to derail what they consider a propaganda-laden campaign to force through nuclear power development onto an ill-informed and malleable public. Key arguments include the following:

- Belarusians have not yet overcome concerns related to the ‘Chernobyl syndrome’ and are understandably reluctant to revisit or reconsider the possibility of nuclear power generation in their own “backyard;”
- Notwithstanding the rosy cost figures which authorities postulate, the cost of nuclear power is excessive and does not compare favorably with coal, gas or oil;
- Rather than reducing it, the BNPP will actually increase dependence on foreign sources of energy, especially Russia, since the purported decreases in demand for Russian gas will be overcompensated by the influx of Russian personnel to construct, maintain and oversee the plant and its functions. Additionally, if Belarus was to ever default on its loan of \$9 billion, which it signed with Russia in early 2009, Russia would claim plant ownership, strengthening Russia’s stake in Belarus’s energy industries;
- The BNPP threatens the area’s surrounding ecology, which is likely to be negatively disrupted by the mere presence of the plant, and virtually destroyed in the case of a radioactive accident; and
- All other options must be exhausted before the BNPP should be considered. These include efforts to modernize existing power generation facilities, implementing energy-saving initiatives and expanding Belarus’s reliance on domestic biomass, solar and wind energy resources.

Below I analyze three fundamental dimensions in determining the short-term and long-term wisdom of the BNPP, including 1) geopolitical considerations of Belarusian energy dependence; 2) environmental impact assessment and public opinion, and 3) cost considerations and implications of the Ignalina NPP decommissioning.

Chapter VI: Geopolitical Considerations of Belarusian Energy Dependence

Belarus is not the exception when considering its overwhelming dependency. Several Eastern European nations, including the Baltic States, get virtually all of their energy from Russia, equaling or even exceeding Belarus's level of dependency, rendering their energy situation precarious as well. Additionally, as of 2008 the EU as a whole derived thirty-three percent of its oil imports and forty percent of its natural gas imports from Russia, a glaring issue which each recurring Russo-Ukrainian and Russo-Belarusian gas dispute magnifies. Furthermore, in the wake of the June 2010 gas price dispute between Russia and Belarus, and as has occurred in the past, the EU was left to question Russia's ongoing reliability in delivering contractual volumes of gas, forcing Moscow to reassure the Union that such price negotiations would not interdict supplies. Rather than ultimately weakening Russia's position as primary supplier, however, it provides more compelling evidence behind the need to accelerate construction of the Nord Stream pipeline which would help Russia avoid future inter-regional embarrassment. Additionally, Ukraine jumped at the prospect of more transit tax revenue during the brief crisis, informing Russia that it was both willing and capable to handle increased volumes of natural gas through its pipelines.⁴⁵

The energy plights of its neighbors notwithstanding, Belarus does have a glaring deficit of natural gas and oil deposits. And, reliance on Russia, especially given the overly favorable conditions which it has offered, has not thus far been detrimental to Belarus – quite the opposite. But fears over Russian petro-based imperialism and increasingly unyielding rhetoric in relation to its favorable and almost “compassionate” energy deals with Minsk points to the need to begin

⁴⁵ PennEnergy, “Extra Gas Via Ukraine if Russia-Belarus Dispute Escalates,” http://www.pennenergy.com/index/power/display/1239115886/articles/powergenworldwide/Business/financial/2010/06/extra-gas_via_ukraine.html

consistently working to reduce dependency and diversify both the location as well as the type of foreign-based supply sources.

Concerning the impact of bringing the BNPP online, Alexander Mihailevich, a research fellow at the Institute of Energy of Belarus's National Academy of Sciences, postulates that energy independence and diversification simply cannot occur without nuclear power, noting that it would eliminate over 4 million tons of energy imports from Russia annually.⁴⁶ Moreover, due to decreased running capacities and the energy inputs needed to fuel them, it would reduce the overall cost of producing domestic energy from traditional sources by 15-20% and replace roughly 3.5 billion cubic meters of Russian natural gas annually throughout the operating life of the BNPP.⁴⁷ Since imported energy resources amounts to eighty-five percent of total demand, this would represent a significant percentage decrease in external reliance, especially in terms of gas imports, currently constituting ninety-three percent of Belarus's total gas imports.⁴⁸

Renewable energy forms such as biomass, hydro, solar and wind – resources of which Belarus has ample and fairly consistent supplies of – could substantially reduce the country's glaring energy deficit while simultaneously developing entirely new industrial sectors, not to mention the jobs which such industries would inevitably generate. Attempting to refute this notion, and speaking in a similar vein as Alyaksandr Mihailevich, is Mikhail Khurs. Writing as a research fellow at the Institute of Sociology at that same National Academy of Sciences, Khurs opines that even if all renewable and other “non-conventional” sources were fully employed and

⁴⁶ Aleksandr Mihailevich, “Sostoyaniye i Perspektivi Razvitiya Energetiki Respubliki Belarus,” *Energetika* 55 no. 4 (2009): 193.

⁴⁷ A.P. Yakushev, “Yadernaia Energetika Belarusi” (paper presented at the international conference “Energetika Belarusi: Puti Razvitiya,” Minsk, Belarus, November 2, 2005).

⁴⁸ Sovyet Ministrov Respubliki Belarus, “Ob utverzhdenii Gosudarstvennoi programmi ‘Nauchnoye soprovozhdeniye razvitiya atomnoi energetike v Respublike Belarus's na 2009-2010 godi i na period do 2020 goda,” August 28, 2009 no. 1116, http://www.pravo.by/webnpa/text.asp?RN=c20901116#3ar_YTB_1

incorporated into the national energy grid, they would still only cover thirty percent of the nation's energy requirements.⁴⁹

While such a figure would significantly dent the country's foreign dependency and signal a drastic shift in its energy and environmental policies, it would not be sufficient to satiate the country's energy thirst, leaving it still overly vulnerable to international gas and oil price fluctuations. Contrastingly, commissioning the two 1,200-megawatt reactors at Astraviec could result in nuclear power producing twenty percent of the country's required capacity, conceivably cutting reliance on Russian natural gas by nearly twenty-five percent.⁵⁰

That the amount of gas required for import would inevitably decrease given the existence of a nuclear plant is not necessarily a revelation. The authors postulating these arguments fail to elucidate the fact that dependence could very easily intensify when considering more tangential yet equally essential elements such as maintenance, procedural and technical expertise and supervision as well as the carrying out of safety precautions. All could be administered by a consortium of international entities in light of Belarus's inexperience with nuclear power, and since the Russian firm AtomStroyExport will be the project's main contractor after winning the project's contract in January of 2009, heavy Russian influence in all elements should be expected.⁵¹

Moreover, although during the Soviet period Belarus was one of the technical and industrial beneficiaries of Soviet investment, given its complete absence of any nuclear experience or concomitant expertise, Russian managers, scientists and technicians will likely

⁴⁹ Mikhail Khurs, "The Energy Security of Belarus as the Basic Condition of the Implementation of the Goals of its Socio-Economic Development," *Lithuanian Foreign Policy Review* (2009): 133.

⁵⁰ Marples, *Energy Dilemma of Belarus*, 221

⁵¹ Power Engineering International, "Russian Company to Build Belarusian Nuclear Plant," <http://www.powergenworldwide.com/index/display/articledisplay/351230/articles/power-engineering/projects-contracts/russian-company-to-build-belarusian-nuclear-power-plant.html>

occupy most of the vital leadership posts in the newly-created nuclear industry. In today's globalized economy, a scenario wherein countries fund major industrial projects in foreign countries is not unorthodox; it is simply foreign investment. It has become fundamental to successful competition in today's global economic atmosphere of interconnected marketplaces, which no longer entails the mere movement of capital and goods but the human and labor capital required to provide the services which such interconnectedness promotes. Furthermore, Belarus desperately needs such foreign investment, possesses a shaky and unreliable energy grid and is paying its bills largely through loans. Pursuing this project under such circumstances and adding an additional \$9 billion to its existing mountain of debt in a time of economic duress may not be so much a business or monetary decision as it is one of national sovereignty, since the inability to pay is a realistic possibility and could result in Russia assuming ownership of the plant.⁵²

Belarus's Domestic Energy Scenario

During the last several years the Belarusian government has undertaken serious steps to reform the energy sector, all with the aim of reducing its overwhelming dependency. In acknowledging its need for comprehensive energy reform, the government has stated that due to "insufficient indigenous energy resources," the "dominating role of... natural gas" and "fuel imports mainly from one country," that the "energy security of the country has been considerably weakened."⁵³ Consequently, it admits, "more extensive use of local energy resources will neutralize to a certain extent, the above mentioned factors."⁵⁴

As a result, the Ministry of Energy initiated the "*State Comprehensive Program of Energy System Upgrading*" (the Program hereafter) or Decree no. 399, to modernize the

⁵² Russia and Belarus signed the loan agreement in February of 2009.

⁵³ Belarusian Ministry of Energy, "State Comprehensive Program of Energy System Upgrading," <http://president.gov.by/en/press20032.html>

⁵⁴ Ibid.

Belarusian energy system, achieve realistic gains in energy conservation and initiate broader usage of the country's indigenous fuel and energy resources for the period 2006-2010.⁵⁵ Among an array of infrastructural upgrades including efforts to modernize existing power plants, the Program does target areas of weakness – areas presently justifying the BNPP's construction. For instance, a number of inefficient, combined heat and power (CHP) plants throughout the country are being modernized for increased efficiency, including three in Minsk and others in Mahilow, Novopolotsk, Grodno and others. Moreover, the revamping of electric and thermal power networks has been announced and is expected to result in a 12.3% reduction in energy losses, according to government estimates.⁵⁶

While the pro-nuclear lobby has cited Belarus's lack of indigenous sources of natural gas as a major motivation behind the BNPP, this does not mean that it is completely devoid of other energy sources. The country has a wealth of biomass and hydropower resources which have not yet been fully taken advantage of. Fortunately, the multi-dimensional nature of the Program has made provision for exploiting these: it calls for the construction of a number of biomass-powered, small-CHP units in Bobruisk, Pinsk, Vitebsk, Zhodino and other locales as well as the building of small hydroelectric stations at Braslav, Dnepro, Grodno and others.⁵⁷ These endeavors, which merely represent but three components of the Program (which Program's total estimated cost is \$5.1 billion) are expected to reduce the country's GDP energy intensity by a quarter and decrease the energy industry's fuel requirements precipitously. Yet more importantly, if all the claimed reforms are actually carried out, it will demonstrate that a hasty and costly approach to introducing nuclear power in the country's energy portfolio is premature

⁵⁵ Ibid.

⁵⁶ Ibid.

⁵⁷ Ibid.

considering that Belarus does possess the needed expertise to capitalize on more easily available and more cost-effective energy options.

Chapter VII: Kyoto, Environmental Impact Assessment and Public Opinion

The BNPP and Kyoto

One of nuclear power's indisputably greatest assets is its lack of carbon intensity. At a time when both concern and confusion reign over global perceptions of climate change and increasingly stringent international regulations and governance over the emission of so-called greenhouse gases, nuclear power has found a serendipitous ally in the crusade of global environmentalism. However, what it gains in its characteristic low carbon intensity is drowned out in cacophonous controversies involving the issues of storing spent fuel rods and other nuclear waste, as well as its notorious history of contamination and uncertain reliability.

In his extensive quantitative analysis of Belarus's energy dilemma, A.P. Yakushev calculates that with reductions in natural gas achieved through the use of nuclear power, Belarus stands to eliminate 7-10 million tons of greenhouse gases per year, allowing it to more easily achieve its Kyoto targets.⁵⁸ Historically permeated with a steady dose of recalcitrance and an indifference to the status of Moscow marionette, it would hardly seem that meeting Kyoto targets – a Western-borne concept – has been on the minds of Belarusian authorities since discussions involving domestic nuclear power began gaining traction several years ago. However if irritation over Moscow's dominance, Lukashenka's lack of top-dog status in and frustration with the vapid Union State proceedings, his vociferous defense of Belarus's sovereignty and the country's very economic solvency all combine to effectively limit the president's political latitude, he just may steer his country on an alternative course, one which its inclusion in the EP may facilitate. If such turns out to be the case, having exhibited respect for and dedication to meeting Kyoto targets would smooth out the effects of many of the inconvenient environmental regulations which closer European integration would necessitate.

⁵⁸ Yakushev, 84

In such a scenario, the EU's growing acceptance of nuclear power as a "renewable" or "sustainable" energy source meriting official support and promulgation is slowly growing. True, the European Commission required the closure of nuclear plants in Bulgaria, Lithuania and Slovakia, but these were leftovers from the Soviet period with designs closely resembling the infamous RBMK-1000 reactor that malfunctioned at Chernobyl in 1986. As such, the EU's environmental conditionality should be viewed as strict pertaining to the *type* of reactor, but not the civilian use of nuclear power itself. Accordingly, Belarusian estimates reveal an extremely advantageous scenario vis-à-vis nuclear power's potential for emissions reductions and the prospect of European integration: construction of the BNPP will supposedly lower the country's GHG emissions by over two times Yakushev's estimate, amounting to a figure between 16 and 24 million tons.⁵⁹

Such a figure is truly impressive at face value but essentially meaningless if one's economic pillars are imploding and significant reductions can be achieved through incremental yet no less stringent efforts to expand efficiency from fossil fuel-based sources and the development of a viable and diversified renewable energy portfolio. Emissions may be partially under control (and one nuclear plant would not guarantee that), but if an economy is purely built on the ideological and infrastructural rubble of the command economy's Soviet past, any attempts at Western integration have but little chance of attaining fruition.

Severe discrepancies in purported emissions reductions present an egregiously weak spot in the armor of the pro-nuclear (pro-government) analytical discourse. Not only do the figures not resemble anything close to being synchronous with those of quasi-independent researchers, but the Lukashenka regime has not exactly cast itself as dutifully concerned over GHG emissions and the theorized climatic consequences of industrial pollution. Belarus acceded to the Kyoto

⁵⁹ Ministerstva Inostrannikh Del Respubliki Belarusi, "Stroitel'stvo AEC v Belarusi"

Protocol in August 2005, six months after it entered into international force.⁶⁰ However, the move was economically calculated rather than environmentally motivated due primarily to the following factors:

First, the agreement stipulates that countries shall keep their combined emissions levels below 1990 levels. Belarus's economic activity in 1990 was much more robust than it is now owing to consistent Soviet financing, and grim economic performance in the early to mid-1990's furthered its post-Soviet economic slide. Factoring in this slow and painful economic recovery, as of 2004 its level of GHG emissions was 1.5 times less than the target which the Kyoto agreement stipulated, requiring that Belarus do absolutely nothing in order to meet and even exceed the Protocol's binding expectations.⁶¹

Second, Belarus does not have to massively cut emissions like others bound by Kyoto's regulations. Rather, it is in the enviable position of being able to sell its excess, unused emission "rights" to current violators who have exceeded their respective limits as outlined in the Kyoto documents. Owing to the depth of troublesome economic waters through which Belarus waded in the Soviet Union's aftermath, by merely acceding to the Protocol Belarus not only demonstrates a degree of diplomacy and inclusion within the framework of landmark international agreements, but revenue from the sale of carbon credits could potentially top \$1 billion.⁶²

As to how the Kyoto Protocol relates to construction of the BNPP, it is simply about profit. Arguing that the BNPP is needed in order to achieve Belarus's Kyoto targets – when they have already been met by default – is a calculated case of misleading the Belarusian electorate

⁶⁰ Belarus News and Analysis, "Why Belarus Joins Kyoto Protocol Now?" <http://www.data.minsk.by/belarusnews/082005/66.html>

⁶¹ Ibid.

⁶² IPM Research Center: German Economic Team in Belarus, "Belarus and the Kyoto Protocol: Opportunities and Challenges," <http://research.by/>

who for the most part has but little understanding of the Kyoto Protocol in general or what emissions reduction targets and trading systems entail in particular. Incorporating the state's aforementioned and comprehensive, 2006-2010 energy upgrading plan that emphasizes power plant modernization and a growing commitment to generating energy derived from non-fossil-fuel sources domestically available, is more environmentally and fiscally feasible. Moreover, it will not encumber revenue generation resulting from the selling of emission rights, thus eliminating the validity of the Kyoto-based, pro-nuclear argument.

Environmental Impact Assessment and Public Opinion

In 1997 when a campaign was launched promoting the resettlement of those which the Chernobyl disaster affected most, barely a decade after the catastrophe, the government raised the possibility of constructing a nuclear power plant, claiming that it was the only method whereby such cost-effective power could be generated.⁶³ At this time, a mere three years into Lukashenka's presidency and before his grip on Belarusian society had become absolute, the notion was met with stiff public resistance, forcing the authorities to alter their course, opting instead for the importing of nuclear energy-based power from abroad. Furthermore, they claimed that any future decision on domestic nuclear power would be decided through a public referendum.⁶⁴ One year later, in 1998, in order to project the sentiment that the government was laboring diligently to strike an appropriate equilibrium between cultivating domestic power options while respecting the people's will, it proclaimed that instead of actual plant construction, the country would emphasize nuclear research. A moratorium on nuclear facility construction was later imposed, which the authorities ended in 2008.⁶⁵

⁶³ Anya Loukianyova, "Belarus Takes a Second Look at Nuclear Energy," Bulletin of the Atomic Scientists, <http://www.thebulletin.org/web-edition/features/belarus-takes-a-second-look-nuclear-energy>

⁶⁴ Ibid.

⁶⁵ Loukianyova, Belarus Takes a Second Look at Nuclear Energy

Very little has occurred since the moratorium was declared to assuage Belarusian angst concerning nuclear power. The presence of cesium, iodide, strontium and other radionuclides over twenty-three percent of the country's farms, fields and forests, the prevalence of congenital health maladies in younger generations and the clarity of memory do not all fizzle in but two decades or wither away easily, no matter how inconvenient they are to the government's energy visions for the country. Evidentiary findings of this are revealed in a number of sociological surveys, including that which assessed Belarusian attitudes towards nuclear power during the period 2006-2008, presented in chapter six.

It is interesting to note however that as of December 2008, the number of individuals indifferent to the project has increased significantly, while the disapproving crowd has decreased steadily. Isolating the specific impetuses behind this general yet discernible change through regression and other statistical methods are beyond the scope of this analysis. Contributing factors could realistically be the countrywide information campaign, including trade show-style events on nuclear power in the Belarusian context, the government's nearly incessant rhetoric touting nuclear power's capability to garner elevated energy security as well as frequent reminders about international involvement in and approval of the process in the form of the International Atomic Energy Agency (IAEA) in an attempt to ensure the project's legitimacy, since the inclusion of a well-known foreign entity can positively influence what otherwise would be considered untenable in the eyes of the electorate.

Whatever the case may be however this brief trend, reflecting the opinions of 8,000 Belarusians and conducted by a reputable and independent NGO located in Minsk, does not represent even a partial repeal of the Chernobyl-induced radiophobia that still exerts considerable psychological influence upon this nation of nearly 10 million.

Yet, aiming to assess the Belarusian public's views pertaining specifically to the issue of nuclear safety, 13,500 adults responded to an invitation to call in and voice their respective opinions during the talk show "Vybor" ("Choice"), which was broadcast on Belarusian national television on May 17, 2010.⁶⁶ A sweeping majority (eighty-seven percent) conveyed their apprehension regarding the safety of nuclear power operations, while thirteen percent opined that nuclear power could be pursued without compromising safety in the Belarusian context.⁶⁷

Contrary to pre-planned surveys and opinion polls wherein interviewees may not fully explicate their true feelings out of the fear of reproach or criticism, especially in an authoritarian state, these results are particularly revealing. All responses were entirely voluntary, and the possibility of one's responses (which, if they responded "yes," would be at odds with the government's stance) being traced were minimal – prime conditions opposition to be voiced.

In order for the first block of the BNPP to be in service by the anticipated commissioning date of 2016, the authorities in Minsk have the tall task of convincing neighboring countries of the plant's safety and aggressively seeking public input, requirements set forth in the Espoo and Aarhus Conventions of 1991 and 1998, respectively. In the preliminary stages of major project development, the "*Espoo Convention on Environmental Impact Assessment in a Trans-Boundary Context*" obligates countries to consult with, educate and notify other states regarding the ways in which such a project could potentially be adversely impactful.⁶⁸ Moreover, the "*Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Affairs*" charges public officials with the responsibility of

⁶⁶ Bellona, "Okola 87% belorusov ne veryat v bezopasnost' sovremennikh AES," http://www.bellona.ru/news/news_2010/ont-vybor

⁶⁷ Ibid

⁶⁸ United Nations Economic Commission for Europe, "Konventsiya ob Otsenkye Vozdeistviya na Okruzhayushuyu Sredu v Transgranichnom Kontekstye," <http://www.unece.org/env/eia/documents/legaltexts/conventionextrussian.pdf>

demonstrating accountability and exercising openness and transparency in their efforts to inform the citizenry on matters concerning the local or regional environment.⁶⁹

Lining the Belarusian border with expansive solar panels or wind turbines would be unlikely to stir public controversy. Even public response to the installation of a coal-fired plant on the border may be relatively calm. However such hypothetical public discourse could never compare with the resistant firestorm that has confronted Belarusian officials as they have outlined details of the BNPP to international audiences. And understandably so: they have attempted to placate international concerns in Austria, Lithuania, Ukraine and other locales pertaining to a country making its first foray into nuclear power by utilizing what amounts to a Russian-designed reactor prototype in the VVER-1200, a design which has never been extensively tested. Exacerbating Lithuanian angst is the reality that it will be placed fourteen miles from the Lithuanian border and a mere thirty-one miles from its capital, Vilnius.

The BNPP's project team consisting of Rosatom, the Belarusian Ministry of Energy and other sub-ministries established specifically for this purpose including the Directorate for Nuclear Power Plant Construction (preparatory surveying, designing and construction), the Department of Nuclear and Radiation Safety (state supervision over nuclear safety regulations and protocol) and Belnpienergoprom (general design coordination and supervision over estimate documentation of the NPP's construction) must ensure the region's environmental integrity as it relates to both regular plant operations as well as provisions for preventing colossal damage in the event of an explosion or major leak. But it is one thing to hold public information sessions and question and answer sessions in the comfort of one's own country with the backing of the state security apparatus to check rein potentially excessive behavior, including protesting

⁶⁹ United Nations Economic Commission for Europe, "Konventsia o Dostupe k Informatsii, Uchastii Obshestvennosti v Protsesye Prinyatiya Reshenii i Dostupe k Pravosudiyu po Voprosam, Kasayushchimsya Okruzhayushchei Sredi," <http://www.unece.org/env/pp/documents/cep43r.pdf>

outbursts, media coverage or merely inconvenient inquiries. However it is quite another to step into the public domain of countries possessing far more familiarity with nuclear power's advantages and disadvantages, and in forums with few constraints to freedom of speech and expression with no fear of authoritative reprisal.

The BNPP's environmental impact statement is currently under revision as a result of Belarusian attempts to fulfill Espoo and Aarhus Convention obligations by holding public meetings designed to enlighten the public of neighboring nations vis-à-vis the project's particulars. I have selected public meetings in Vienna, Austria, Vilnius, Lithuania and in Astraviec itself for situating such resistance and doubts concerning Belarus's ability to be the guarantor of nuclear power safety.

Vienna, Austria – May 2010

Austria may seem like an unorthodox location for Belarus to have to justify its nuclear power intentions and seek both governmental and societal backing. Yet Austria, itself nuclear-free but surrounded by nuclear plants, did in fact endure a spike of radiation-induced cancer cases in the aftermath of the Chernobyl accident due to radioactive fallout over the country, principally cesium-137, constituting three percent of the total fallout from Chernobyl.⁷⁰ Thus, in addition to exercising their right to unencumbered clarification of the safety provisions at the BNPP through the Espoo mechanism, sad experience also motivates Austrian officials and citizens.

As could therefore be expected, the major hang-ups voiced at the hearing involved the attendee's dissatisfaction with efforts to ensure the safety of the plant. Gerhard Loidl, representing the environmental service of the Bundesland of Upper Austria provided an official

⁷⁰ Andrei Ozharovsky, "Austria Joins the Club of Angry Nations Outraged by Belarusian Nuke Project," http://www.bellona.org/articles/articles_2010/Austria_belarus_npp

reaction to the lack of waste management, fuel rod storage and other provisions which were not explicated, echoing the unanimously and vehemently negative stance of all present in declaring, “The environmental impact has not been fully analyzed... The project is not ready. We ask that its implementation be halted.”⁷¹

Such sentiment could hardly be considered astonishing, especially in the face of an inexperienced Belarusian delegation doing its best to defend itself against the volley of legitimately disconcerting doubts which the Austrians conveyed. One Austrian audience member argued, “All these data... all the figures for beyond-design-basis accidents, these are all pure conjectures! This is fantasy, it’s all made up! One cannot believe these estimates made by nuclear propagandists...”⁷²

To make things more tense Helmut Hirsch, representing the Austrian Institute of Ecology provided a particularly stinging rebuke upon hearing that no scenarios had been developed in the case that the containment building is marginalized. Said he, “If the containment building is destroyed, [radioactive] discharges will be 100, 1,000 times larger than what you’re asserting...” “Your analyses are neither complete nor accurate. We recommend you not to rely on theoretical estimates while excluding [accident scenarios] from your consideration.”⁷³

In the face of such withering criticism not often leveled (or permitted to be leveled) against official state representatives at home, Anatoly Bondar, chief engineer with the Department of Nuclear Plant Construction, finally admitted that the VVER-1200 design option was selected simply out of inexperience.⁷⁴

⁷¹ Ibid.

⁷² Ibid.

⁷³ Ibid.

⁷⁴ Ibid.

Particularly apparent and troubling was the lack of regard for the mandates of the Espoo Convention concerning information transparency and the necessity of gathering and respective public input. Alyaksandr Andreeyev of the Belarusian Ministry of Natural Resources and Environmental Protection indicated that the nuclear issue in Belarus has been settled since the 1970's and that "the public's petitions and complaints will have no consequences."⁷⁵

Furthermore, he continued by saying that "[NGO's] are not the majority, and we know everyone who will be against [the project]...The government is entitled to making a decision that it deems necessary and not taking into account the opinions of a handful of individuals."⁷⁶ Such cynicism and arrogance certainly demonstrates the vapid and nominal nature of Belarus's accession to such conventions, heaping doubt on the effect which the growing anti-nuclear lobby may be allowed to exert on the proposed BNPP. Further troubling however is the fact that not only is Minsk revealing its blatant disregard for the right of its citizens to be versed in such a monumental and potentially impactful "national" project, even in international forums, but it is simultaneously revealing a dangerous precedent of indifference toward the concerns of neighboring nation-states as well who will not shrug off such brazen defiance of international agreements.

In addition to the public hearing which officials, scientists, and industry professionals attended, the nuclear component of the Austrian Federal Ministry of Agriculture, Forestry, Environment, and Water Management submitted a 30-page assessment and evaluation of Belarus's Environmental Impact Assessment (EIA), saturated with what it considers severe deficiencies relating to safety concerns and provisions. It calls upon the Belarusian government

⁷⁵ Ibid.

⁷⁶ Ibid.

to answer a slew of questions, the answers to which the EIA does not adequately provide.

According to this ministerial report, areas of heightened concern include the following:

- Contents of the EIA are general and only the most basic terminology regarding reactor design and operational parameters is given;
- No concrete or detailed description of the corium localization device (core catcher) exists in the EIA report, and steam explosion hazards are not addressed;
- There is no procedural or systematic analyses regarding design-basis accidents (DBA's) or beyond-design-basis accidents (BDBA's);
- The EIA lacks information pertaining to interim, spent fuel rod storage or the ultimate disposal of radioactive waste in Belarus;
- A comprehensive industrial analysis addressing the selection of the reactor type is missing in the report. That the major equipment and safety systems of the Generation III water-pressurized reactor are in operation in China and eight are in the planning stages for Bulgaria, India and Russia means relatively little. The fact remains that the reactor has virtually no practical operational history. Additionally, it should address why the VVER-1200 type was selected since it possesses a high power density potentially leading to accelerated core heating in the event of coolant loss, resulting in expedited reactor failure;
- Statistics relating to large release frequencies (LRF's) and core damage frequencies (CDF's) are substantially lower in the EIA than in independent sources;
- The report provides vague descriptions of the reactor building's capacity to withstand severe natural phenomena (floods, tornadoes, earthquakes, etc.). Additionally, it claims that the building can withstand an airplane crash, but details are sketchy: an accidental Cessna crash is far different from an intentional terrorist attack in a jet airliner;
- The EIA provides emergency evacuation details for a radius of only 800 meters. In the case of a BDBA, the contamination and radiation associated with such a worst-case scenario is likely to result in the need for a substantially larger evacuation zone;
- Wall thicknesses of the double protective containment layer are not specified. One must rely on specifications from the VVER-1200's predecessor, the VVER-1000, which may or may not be completely accurate; and
- No detailed information pertaining to the active and passive safety systems' performance

or reliability is presented.

*Source: Construction of a NPP in Belarus, Expert Statement on the Preliminary EIA Report*⁷⁷

Vilnius, Lithuania – March 2, 2010

Notwithstanding the frustration which the Austrians displayed over a general lack of detail and transparency presented in the EIA by the Belarusian nuclear team, Lithuanians have been even more outspoken and vociferous in their opposition to the BNPP, fervor which their immediate geographic proximity at least partially explains. What Belarus does domestically is its own business, but as the Espoo Convention reminds us, the placing of a nuclear power plant mere miles from an international border undoubtedly presents a disconcerting scenario for neighboring nations. And as the next section will discuss, Lithuania is no stranger to nuclear power, with the Ignalina NPP supplying more than seventy percent of the country's energy needs prior to its decommissioning as part of Lithuania's EU accession agreements.⁷⁸ Additionally, a replacement plant, the Visaginas NPP, is in the works. As such it is unfair to say that Lithuania suffers from a preconceived, biased distrust of nuclear power and that it is defining the public's angered response to the Belarusian NPP.

During Belarus's public hearing in Vilnius at which they were to argue the project's validity and inability to pose risks to the nation, its people, and environment, the Belarusian delegation once again failed to convince the large group of the necessity for or the safety of the BNPP as illustrated in the EIA, drawing fierce backlashes from skeptics to which they had been unaccustomed. Illustratively, in response to the assertion that Lithuania is in no way threatened, Rasa Navickiene, deputy chairman of the Development Committee of the Vilnius City Council

⁷⁷ Umweltbundesamt: Austrian Federal Ministry of Agriculture, Forestry, Environment and Water Management, "Construction of a NPP in Belarus: Expert Statement on the Preliminary EIA Report," <http://www.umweltbundesamt.at/fileadmin/site/publikationen/REP0250.pdf>

⁷⁸ Zeyno Baran, "Lithuanian Energy Security: Challenges and Choices," Hudson Institute, p. 17 <http://www.hudson.org/files/publications/LithuanianEnergySecurityDecember06.pdf>

thundered that an accident would likely spell doom for the country and an act of genocide against the Lithuanian people. Furthermore, she stormed, “Why are we being told that there are no dangers at all? Is this how Lithuanians are supposed to be treated, like we’re so uneducated, we don’t know anything and can’t understand? I’ll do everything within my power to see that Lithuania does not approve such an [environmental impact] report!”⁷⁹

Upon closer inspection, her retort may be as logical as it is emotional: the Lithuanian Ministry of the Environment requested documents from the Belarusian government, and the forwarded materials reveal that even Belarusian project developers’ data show radionuclide contamination easily reaching the Lithuanian capital.⁸⁰ Moreover, analyses performed by independent Lithuanian scientists conclude a far bleaker scenario, noting that based on their estimates, the Belarusian figures of but 1 curie per square kilometer of iodine-131 and 0.1 curies per square kilometer of cesium-137 could be underestimated by hundreds or even thousands of times.⁸¹ Even if a middle figure were to turn out accurate, eastern Lithuania would likely be ecologically devastated similar to southeastern Belarus in the aftermath of a Chernobyl-style disaster, rendering farms fallow and forests lifeless. And this merely includes contamination through the air: if the reactor core were to come in contact with groundwater, which level is high in the region, the disastrous externalities would be much worse.

Frustration over the way in which the meeting itself was conducted was high, with the Lithuanians feeling as if it was convened as a mere formality to fulfill international regulatory requirements. One individual, Gintaras Songaila, a member of the Lithuanian parliament, even called it and the way in which the material was presented a “theater of the absurd” and “worse

⁷⁹ Andrei Ozharovsky and Maria Kaminskaia, trans., “Lithuania Indignant Over Neighboring Belarus’s Nuclear Project Safety Claims,” http://www.bellona.org/articles/articles_2010/Lithuania_hearings

⁸⁰ Ibid.

⁸¹ Ibid.

than terrible.”⁸² In a surprising but altogether not unexpected move, attendees stepped beyond mere oral formalities and drew up an official record of the minutes of the meeting to ensure that participants’ opposing sentiments could not be misrepresented or misinterpreted. Additionally, showing democracy at work in front of a panel of shocked delegates who had just had “their” meeting essentially hijacked before their eyes, a working group of nearly twenty individuals was organized to craft a letter critical of the proceedings and describing participants’ viewpoints. The letter was subsequently sent to the European Parliament, as well as the Seimas, the Lithuanian parliament, and the Lithuanian government, sending the undeniable signal that citizens will not allow such a project to proceed without stiff resistance.⁸³

Lithuanians share virtually all of the concerns expressed in Vienna over the EIA report, including the containment building’s apparent incapacity to withstand a potential terrorist attack, the lack of an established procedure for handling and storing spent fuel and a dearth of detailed technical descriptions of the reactor with accompanying justification as to its selection.⁸⁴ In short, the report is short on details and long on generalities, much of it simply regurgitated from AtomStroyExport’s advertising materials. However, the following issues are unique to Lithuania’s hesitancy to fully support the BNPP:

- Against Espoo mandates, reasons why the Astraviec site was ultimately chosen to the exclusion of other sites are not provided;
- Estimates provided by the Lithuanian Physics Institute indicate that in the case of a beyond-design-basis accident (worst-case scenario) Vilnius would have to be evacuated. This is not remotely analyzed in the EIA save for the statement that “No contamination with long-

⁸² Ibid.

⁸³ Ibid.

⁸⁴ Bellona, “Lithuania, Says Official, Decisive ‘No’ to Belarusian Nuclear Power Plant,” http://www.bellona.org/articles/articles_2010/lithuania_no_to%20Belarus_nukes

lived radionuclides will affect the territory of the Lithuanian Republic as a result of any [beyond-design-basis accident] at the Belarusian NPP.”⁸⁵

- Water from the Neris, a river whose source is in Belarus, will be used to cool the reactors and subsequent discharge of the resulting wastewater could exhibit both a toxic as well as warming impact on the Neris as it subsequently flows through the major cities of both Vilnius and Kaunas.⁸⁶

This particular hearing on the EIA is but a microcosm of wider sentiment in the country evidenced by a number of public anti-BNPP demonstrations, including a mass demonstration that transpired on April 26, 2010, the 24th anniversary of the explosion at Chernobyl.⁸⁷ And although Lithuania is obviously concerned with the BNPP and its concomitant EIA for the aforementioned reasons, it is plausible to believe that had a different location been selected in the central or eastern part of the country closer to Russia – a prolific nuclear power proponent – the current cacophony of anti-nuclear sentiment from the Lithuanians would not be nearly as resounding. Moreover, and quite ironically, the Lithuanian side must present its case before a Belarusian audience in light of plans to build the Visaginas NPP as a replacement for Ignalina, and the icy response on the BNPP may result in a similar one by the Belarusians.

Astraviec, October 9, 2009

So what of public hearings closer to home, in Belarus, where the BNPP will actually be constructed? Besides the holding of nuclear energy expositions and exhibitions in the capital for the last couple of years to drum up public interest in and support for the project, the most well-known and controversial public gathering transpired on October 9, 2009 in Astraviec itself, an event marred by a number of troubling events calling into question government neutrality vis-à-

⁸⁵ Ibid.

⁸⁶ Ibid.

⁸⁷ Andrei Ozharovsky, “Vilniuse vistupili protiv tryokh AES i za budushchee bez atoma,” http://www.bellona.ru/articles_ru/articles_2010/Vilnius-den-ch

vis the public's right to information. By all logistical and substantive accounts the public hearing in Lithuania was volatile, what with translation hiccups distorting meanings and perceptions and the delegation losing control of the meeting. The meeting in Astraviec to discuss the EIA was equally notorious. Belarusian non-governmental groups submitted a list of grievances, not so much regarding the content of the EIA but initially about the conditions and manner in which the meeting was held. In an official document they described the meeting in Astraviec as “insult[ing] human rights, undermin[ing] the faith of Belarusian civil society in justice and law, and has the goal of deceiving the authorities and citizens of other countries about supposedly fulfilling the conditions of Belarusian legislations, including the Aarhus and other international conventions.”⁸⁸ In their outline of the hearing they emphasized the following startling shortcomings:

- Leading up to the October 9th meeting a thirty-one-page, “official” environmental impact assessment was available on government web sites, including www.minenergo.gov.by and www.dsae.by, and attendees prepared accordingly. However a different report roughly 3,000 pages in length was presented at the meeting and attendees were restricted in accessing it;
- NGO representatives and members were disallowed access to the theater in which the meeting was held by under-cover police officers even though they had registered in advance in accordance with official guidelines;
- More than half of the participants officially scheduled to speak were not given the opportunity and the official, published meeting proceedings were not followed; and
- Andrei Ozharovsky, an environmentalist scheduled to take part in the proceedings, was arrested for “hooliganism,” and nearly 100 copies of materials critical of the BNPP which he intended to present were confiscated.

⁸⁸Obshchestvennoye obyedineniye “Ekodom,” Belorusskaia Partia “Zelyoniye,” i mezhdunarodnaia ekologicheskaiia grupa “Ekozashita,” “Pozitsiya obshchestvennosti otnositel’no khoda obshchestvennovo obsuzhdeniya planov po stroitel’stvu AES v Belarusi,” <http://atomby.net/file/position191109after091009.pdf>

As for Belarusian grievances pertaining to project safety, they mirror those propagated in Austria and Lithuania but go a step further in their efforts to elucidate the flaws of the EIA report by comparing the prospective plant's EIA with those of similar, pressurized water reactors (PWR's) to provide a more accurate and realistic basis for comparison. For instance, regarding the dimensions of the contamination zone, the EIA reports of both the Fennovoima (Finland) and Visaginas (Lithuania) plants give a cesium-137 contamination rate of roughly ten times that listed in the Belarusian EIA in the case of a more minor accident.⁸⁹

Worse still an actual accident – the 1979 incident at Three-Mile Island wherein neither the reactor nor the integrity of the coolant core were ultimately marginalized – resulted in the release of radionuclides amounting to 320 times that listed as the worst-case scenario in the Belarusian EIA.⁹⁰ With due diligence, arriving at such figures in an EIA would not seem to be overly difficult, especially when the reactors are of the same type and it seems very plausible that Belarusian officials have either radically misjudged their analyses, omitted critical and necessary variables or are endeavoring to intentionally deceive the public.

As for how this could affect contamination patterns, once again a foreign example provides a far different figure. The Finnish EIA for the Fennovoima plant mentions a possible radius of up to 1,000 kilometers, a stark contrast from the Astraviec' aforementioned and comparatively insufficient zone of 800 meters for which emergency measures are described.⁹¹

Other ecological elements which the BNPP is likely to impact detrimentally, and to which the EIA allocates minimal space includes the region's cultural heritage sites (houses and

⁸⁹ Belarusian Green Party, Ecodefense, Scientists for a Nuclear-Free Belarus and Ecohome, "Censorious Remarks on the 'Statement on Possible Environmental Impacts of the Belarusian NPP,'" p. 4
[http://www.global2000.at/module/media/data/global2000.at_de/content/atom_pdf/Censorious_remarks_to_Statement_on_possible_environmental_impact_of_BelarusianNPP.pdf](http://www.global2000.at/module/media/data/global2000.at_de/content/atom_pdf/Censorious_remarks_to_Statement_on_possible_environmental_impact_of_BelarusianNPP.pdf_me/Censorious_remarks_to_Statement_on_possible_environmental_impact_of_BelarusianNPP.pdf)

⁹⁰ Ibid., 4

⁹¹ Ibid., 6

churches of note), and especially its flora and fauna.⁹² The region is surrounded with nature preserves featuring pristine rivers and pine forests, one of the primary contradictions behind the selection of this particular site. Moreover it is a paradise for lynx and bear, storks and eagles, and bull trout and summer salmon, among others.⁹³ Many of the species included in Belarus's "Krasnaia Kniga," an index of plants and animals threatened with extinction and officially protected by the government, are found in the area around the proposed plant and could be adversely affected.⁹⁴ For example, the cooling of the two reactors will require nearly 3700 square meters of river water daily, resulting in a subsequent drop in the river level.⁹⁵ Consequently this will invariably alter the river's temperature close to the plant. With such biodiversity and virtually undisturbed ecological conditions, logic suggests an option other than a nuclear power plant, the construction and operation of which will entail transforming Astraviec from a small provincial town of 8,000 into a sizeable provincial center of over 30,000 inhabitants.

The Chernobyl Psychological Conundrum

Having borne the initial and continual brunt of one of the worst man-made disasters in recent memory less than twenty-five years ago, it is understandable why many Belarusians cringe at the thought of nuclear power. Although reactors essentially surround the country already, willingly choosing to construct one within its own borders after the suffering which the Chernobyl disaster caused could be considered tantamount to national desecration, a feeling that public opinion polls appear to confirm.

⁹² An initial 200-page report submitted which Belarusian scientists submitted to the official agency responsible for preparing the final EIA, *Belniplerienergoprom*, but no references or data from this report has been included in the official EIA. Censorious Remarks, 16

⁹³ Censorious Remarks, 15

⁹⁴ Krasnaia Kniga Respubliki Belarus's, <http://redbook.minpriroda.by/>

⁹⁵ Censorious Remarks, 16

In his analysis on psychological aspects of nuclear power in Belarus, Mihailevich reports the results of the first opinion poll conducted in an independent Belarus on nuclear energy, nearly ten years after the Chernobyl disaster. Responding to how they felt about the possibility of a nuclear plant being located “near” their place of residence, 22.14% of participants responded favorably to the inquiry, while 48.96% were adamantly opposed to such a proposition. The rest of the respondents also were firmly on the negative side, answering that it would be “disconcerting.”⁹⁶ Strangely, the definition of “near” was not provided to respondents, and the survey was not conducted in the Grodno region where the plant is to be located, an element which could have further substantiated these results.

In the same research analysis, those surveyed were asked to indicate which energy source they preferred the country pursue most in its efforts to become more energy independent, only 17.2% of average citizens polled selected nuclear power. However, sixty-one percent of experts selected nuclear, and the difference of 43.8% constituted the largest discrepancy between average citizens and experts of any energy source in the survey. This reveals wide gaps in the availability of information as well as the fact that those that suffered (and continue to suffer) from Chernobyl were still psychologically scarred, while the so-called experts – Soviet-trained members of the nomenclature – were still influenced by heavy Soviet insistence and dependence on the expansion of nuclear power.

Reflecting more current opinions, the Independent Institute of Socioeconomic and Political Studies (IISEPS) conducted a poll in November 2006 that revealed only 32.5% of respondents supported a domestic nuclear power plant, while 47.7% opposed the idea.⁹⁷ This reflects not only a general negative opinion *vis-à-vis* nuclear power but the fact that no amount of

⁹⁶ Mihailevich, 196

⁹⁷ Marples, *Energy Dilemma of Belarus*, 222

government or scientific hype will replace the necessity of time for Belarusians to begin the long psychological thaw over this issue. Even if this were not the case and the populace was more neutral, the administration in Minsk still has not made critical decisions regarding the disposal of radioactive waste or placating inquiries into its questionable conducting of the plant's EIA – crucial elements about which the populace must be educated and reassured. Even then, with the long-standing anxiety over nuclear power, a significant jump in public opinion favoring a domestic nuclear plant is unlikely and will take more than what the dictatorial propaganda incorporated to smooth over the rough-edged, inconvenient obstacles can muster.

And thus, Belarusians would overwhelmingly seem to support the stance of Igor Fedushin, a nuclear scientist and Director of the Institute of Humanitarian and Ecological Sciences in Minsk, who stated that to even posit the question about building a nuclear plant in Belarus is not an economic, political or social question. It is simply an amoral one.⁹⁸

⁹⁸ Igor Fedyushin, “Nuzhna li AES Belarusi?” <http://liberty-belarus.info/>

Chapter VII Figures and Tables

“The governing body of the country has made a final decision for a nuclear power station to be built in Belarus.
What is your attitude to this decision?”

| Date | Disapprove | Approve | Indifferent | DNA/NA |
|----------|------------|---------|-------------|--------|
| Jun. '06 | 52.2 | 30.0 | 13.4 | 4.4 |
| Nov. '06 | 47.8 | 36.3 | 9.9 | 6.0 |
| Mar. '08 | 42.1 | 37.4 | 11.7 | 8.8 |
| Jun. '08 | 42.0 | 37.8 | 13.9 | 8.1 |
| Dec. '08 | 38.2 | 39.5 | 16.3 | 6.0 |

Table 1. Results of periodic public opinion polls regarding the construction of a nuclear power plant in Belarus.
Source: IISEPS



Figure 1. A graphic showing the results of over 13,000 respondents to the question, ‘Do you believe in the safety of modern nuclear power plants? The inquiry and subsequent results were broadcast on the Belarusian television program “Vybor” (“Choice”).

Source: Bellona



Figure 2. A graphic showing the dispersion of radionuclides immediately after the Chernobyl accident in April 1986. The pink and red areas experienced the highest level of fallout, including Austria, Belarus, Russia and Ukraine.

Source: Bellona

Chapter VIII: Cost Considerations, Implications of the Ignalina NPP Decommissioning and Prospects for Regional Energy Cooperation

Cost Considerations

The issue of cost is also at the center of this debate and for good reason. Russia's massive subsidy package for Belarus in exchange for political allegiance has obscured the true impact of exorbitantly high energy costs, shielding the country's industries from reality. Illustratively, in 2008 Belarus was paying between a mere \$120 and \$130 per cubic meter of gas from Russia (and Minsk *still* haggled over the price) while Central European and Baltic States without a 'special arrangement' with Moscow paid substantially higher rates. Thus it is perplexing as to why Belarus – the country paying the least for Russian gas – is pursuing the nuclear power option.

Nevertheless, Hirschausen and Rummyantseva compare the cost of nuclear power in relation to that of coal and gas and, contrary to government estimates, find that it is substantially more expensive than both of these more traditional sources. In their analysis, based on research conducted at the Massachusetts Institute of Technology, the basic cost of nuclear power per kilowatt hour is 6.7 cents (USA) compared to 4.2 and 4.1 per kilowatt hour for coal and gas, respectively.⁹⁹ However, this does not necessarily account for the initial capital outlay of physical plant resources or the plant's estimated lifespan. They argue that in those economies characterized by market economies and a high degree of energy independence, nuclear power is simply not competitive with oil or gas, one reason why most nuclear projects today are located in countries not possessing these characteristics.

In an exhaustive and exemplary analysis on the cost of nuclear power generation, the Belarusian scientists I.N. Smolyar and V.M. Ermashkevich conclude that one must examine all

⁹⁹ Hirschausen and Rummyantseva, 89

elements in order to truly arrive at a representative cost per-kilowatt figure. Thus, including massive initial capital investments in establishing the needed infrastructural and technical resources and accounting for the plant's estimated operational lifespan, not to mention insurance, waste burial and other costs, they estimate that the plant could likely cost as much as 18.54 cents (USA) per kilowatt of energy produced.¹⁰⁰ By way of comparison, at this rate they estimate that when all combined costs are considered, the BNPP could easily cost 3.5 times more than a traditional coal-fired plant.¹⁰¹

Both of these independent, quantitative-based analyses, while several years old, are in my opinion more reliable than official estimates which make the nuclear option appear more competitive than it may in fact be. But again, the dividing line in research findings closely follows the degree to which an individual is connected with official state bodies, research institutes and organizations, and what is needed before such an impactful project proceeds is complete analytical transparency from both sides.

Ignalina Decommissioning and Prospects for Regional Energy Cooperation

Similar to Belarus, Lithuania is completely dependent on Russian gas and, as of August 2008, was already paying \$515 per 1,000 cubic meters of gas – a staggering cost over four times what Belarus was paying during the same period.¹⁰² Like Belarus, Lithuania possesses minimal storage capabilities, and due to its lack of integration within the European network of gas pipelines cannot procure emergency shipments from countries other than Russia. Thus Lithuania's Ignalina Nuclear Power Plant (INPP) – inherited with the dissolution of the USSR – has been indispensable for the country, providing over seventy percent of its energy requirements

¹⁰⁰ I.N. Smolyar and V.N. Ermashkevich, *Atomnaya energetika: argument za i protiv* (Minsk: Natsional'naya akademiya nauk Belarusi Institut ekonomiki, 2000), 28.

¹⁰¹ *Ibid.*, 22

¹⁰² Tomas Janeliunas, "Lithuanian Energy Strategy and its Implications on Regional Cooperation," p. 198, <http://www.janeliunas.lt/files/energy.pdf>

during the entirety of Lithuania's independent existence.¹⁰³ Preparations for Ignalina's construction commenced in 1974, a period in which state-sponsored atomic euphoria inculcated the citizenry with an unprecedented level of mass public participation in science and research.¹⁰⁴ Recently however it has become a sticking point in Lithuania's EU accession negotiations since such reactors (graphite-moderated RBMK-1500's) possessed a number of design flaws similar to those at Chernobyl (graphite-moderated RBMK-1000's), namely in their control rod designs and the utilization of positive void coefficients. These elements limited the effectiveness of the system's safety features, increasing the possibility of radioactive meltdowns.¹⁰⁵

Consequently, according to Article One of Protocol 4 of Lithuania's Accession Treaty, Lithuania "...commit[ed] to the closure of Unit 1 of the Ignalina Nuclear Power Plant before 2005 and of Unit 2 of th[e] plant by 31 December 2009 at the latest and to the subsequent decommissioning of th[e] units" (Protocol 4).¹⁰⁶ The EU's decision to enforce the plant's closure as a condition of accession was premised on its commitment to preventing nuclear accidents. Although such notorious design pitfalls have been largely rectified on existing RBMK reactors, including retrofitting the control rods, reducing the positivity of the void coefficient, and improving the functionality of emergency safety systems, among others, these are not present at Ignalina.¹⁰⁷

Acknowledging that replacing a plant responsible for generating nearly all of Lithuania's energy needs presented a monumental challenge, the prime ministers of the Baltic States met in Trakai, Lithuania on February 27, 2006 to sign a communiqué inviting countries and their

¹⁰³ Baran, 24

¹⁰⁴ Paul R. Josephson, "Atomic-Powered Communism: Nuclear Culture in the Postwar USSR," *Slavic Review* 55, no. 2 (1996): 297.

¹⁰⁵ World Nuclear Association, "RBMK Reactors," <http://www.world-nuclear.org/info/inf31.htm>

¹⁰⁶ Protocol No. 4 on the Ignalina NPP in Lithuania.

¹⁰⁷ *Ibid.*

respective state-owned energy companies throughout the Baltic region to invest in the initial design and subsequent construction of a replacement to be built at Visaginas, not far from the present Ignalina site.¹⁰⁸ Poland was subsequently invited to join the consortium, further defraying Lithuania's cost burden and facilitating the export of electricity through an interconnected power bridge through Poland to the rest of Europe. Its addition makes sound geopolitical and economic sense considering the cost of the VNPP, estimated at over 5 billion USD, and adding a fifth partner in Belarus would further reduce the required investment capital from each participant and alleviate the massive financial and diplomatic burden which the BNPP will inevitably entail.¹⁰⁹

The National Energy Strategy of 2007 envisages completion of the VNPP by 2015, but organizational and investment hiccups have pushed this back to 2017 and possibly longer.¹¹⁰ Assuming the project is eventually completed, however, Lithuania will be able to export the excess electricity which the 3400-megawatt plant will produce to the "mainland" EU if the country can link up with the Western and North European energy grids. Furthermore, since Belarus and Lithuania are already connected, a natural export destination of electricity would be Minsk and the provincial capitals of the Belarusian provinces, rendering the BNPP project – especially given its proposed location on the border – completely unnecessary.

The Baltic Energy Strategy of 1999 prioritized the interconnection of the power systems of Lithuania with Poland (LitPol Link) and Estonia with Finland (ESTLINK), the latter via underwater cable. The ESTLINK was completed in 2007 yet the LitPol connection – the most critical to Lithuania's and Belarus's integration into the EU's energy market and the Union of Coordination of Transmission of Electricity (UCTE) network, will only fully be realized after

¹⁰⁸ Ignalina NPP and the Prospects of Nuclear Energy in Lithuania, "Joint Communiqué of the Prime Ministers' Council of the Baltic Council of Ministers, "<http://www.euro.lt/en/lithuanias-membership-in-the-eu/ignalina-npp/>

¹⁰⁹ Baran, 22

¹¹⁰ Janeliunas, 202

completion of the replacement plant in Visaginas.¹¹¹ Only when this system of interconnected power bridges is fully integrated can Belarus take advantage of the economic opportunities which the Ignalina closure and VNPP project have begun to generate.

Similarly, the first two strategic objectives of Lithuania's National Energy Strategy of 2007 stipulate the need to "...comprehensive[ly] integrat[e]...Lithuania's energy systems, especially the electricity and gas supply sectors, into EU systems and the EU energy market;" and "to diversify the sources of primary energy by reviving nuclear energy..."¹¹² Such a declaration is needed in Belarus's own national energy strategies as it pertains to linking up with EU energy markets. If it continues to insist on nuclear power generation to buttress its energy supply, then Belarus should forego the BNPP, channel its efforts in assisting Lithuania and the Baltic consortium in constructing the VNPP, thereby helping it come online with EU energy networks. Participation would substantially increase Belarusian-European political integration as well and bring the country out of the stubborn obscurity which has tarnished its international image, limited its inclusion in cross-border projects and stymied its economic progress as a result.

¹¹¹ Ibid., 214-215

¹¹² Ibid., 203

Chapter IX: Alternatives to the BNPP; Lukashenka as the Defender of Belarusian Sovereignty

Representing the analytical think tank *Wider Europe* on issues specific to Belarus, the analysis of Vyacheslav Pozdnyak nearly epitomizes my own stance on the Belarusian nuclear issue. Instead of firmly establishing himself on either side of the fence, Pozdnyak proposes a middle way that includes provisions for nuclear power if the appropriate preparations are made, and only after the following reforms and considerations are undertaken:

- First, he proposes to delay the BNPP project until the world-wide financial crises passes, after international markets have stabilized and loan procurements and payback options may become more favorable;
- Second, he argues that domestic effort should concentrate on maximizing utility from existing production facilities and incorporate, where feasible, indigenous and renewable energy sources. Additionally, the government should give its energy-efficiency programs more time to achieve results in order to more accurately assess the practicality of the BNPP;
- Third, he calls for strengthening Belarus's international ties vis-à-vis energy diplomacy, trade and cooperation within the confines of the EU's Eastern Neighborhood Policy; and
- Fourth, he indicates the need for elevating domestic energy security through expanded regional cooperation and examine the appropriateness of assisting in the construction of regional nuclear plants in Lithuania (Visaginas) and Russia (Kaliningrad). This would provide direct experience for Belarusian scientists and managers, improve the energy import scenario and link Belarus with EU power networks.¹¹³

The approach Pozdnyak outlines is infinitely more practical than for Belarus to jump hastily forward into the nuclear power act when it lacks the prerequisite financial and technical resources. Furthermore, as demonstrated in this analysis, the BNPP project does not command majority support from the populace and has drawn vehement protests from groups in the Baltic

¹¹³ Vyacheslav Pozdnyak, "Stroitel'stvo AES – sistemnaya problema natsional'noi bezopasnosti Respubliki Belarusi," www.w-europe.org

States who recognize that a nuclear station fifty kilometers from Vilnius could be potentially peaceful, detrimental or, at the very worst, catastrophic.¹¹⁴ If the Lukashenka administration were to at least temporarily halt construction on the BNPP in order to seek an open-minded and genuine dialog with officials within the Baltic consortium, reevaluate and revamp the BNPP's EIA and discuss the country's energy-efficiency and modernizing initiatives with the EU under the auspices of the new Eastern Partnership agreement, the administration would position itself much more favorably geopolitically, ecologically and socio-economically both in the present and for the introduction of nuclear power via the BNPP, if such a course is eventually pursued.

Based on the foregoing analysis, and especially in light of the VNPP project which would be completed at roughly the same time as the BNPP, a Belarusian nuclear plant is nonsensical and presents a sub-optimal choice economically, ecologically and geopolitically for Belarusian national interests. Thus, why is it still being realistically considered? The literature on the topic is overwhelmingly negative, with the stances of virtually all but government officials ranging from mild surprise and perplexity to outright condemnation of the project. The truth of the matter is that Lukashenka is insistent on bringing the project to fruition, even amid all of its uncertainties and contradictions, and no one is definite as to why. Nevertheless, his reluctance to abandon the project could be realistically attributed to a combination of the following two factors:

- *Authoritarian resilience.* Small authoritarian states in the post-Soviet realm and elsewhere have become surprisingly resilient, and Lukashenka's Belarus is an excellent example. They tire of being influenced by external actors who claim to know what is best for them and their economic and political progress. The belief that such a regime needs to prove its independent mettle, that it can handle internal issues and projects without external input, is often prevalent, and largely characterizes Minsk's frustration with both Russia and the West; and

¹¹⁴ Protests against the Belarusian and other nuclear plants in Lithuania and Russia have been staged in various areas in the region in recent months, including Vilnius.

- *Belarusian sovereignty.* Prior to the Putin presidency, Lukashenka was pro-Union State and believed he could realistically challenge Boris Yeltsin for the office of presidency if such a political entity was forged. Since Putin came to power in May of 2000, however, movement toward a political union has slowed dramatically. Realizing that his maximal power base would extend only as far as Belarus's international borders, Lukashenka has repeatedly stressed Belarusian sovereignty and asserted his role as the defender of the Belarusian nation, characterizing external pressures as brazen attacks on Belarus's sovereignty.

Thus, although as a policy option the pursuit of nuclear power is riddled with contradictory holes, to him it goes beyond policy and is as part of his larger claims to political power. As a result, he does not wish to be seen capitulating to the influence of outside actors, thereby appearing weak and potentially losing his only bastion of remaining authority. This is the major motivation behind the '*For Belarus*' campaign, a nationally-based slogan designed to rally support for defending Belarus which, by implication, defends him from being deposed.

Chapter X: Concluding Remarks

Is the Belarusian Nuclear Power Plant at Astraviec the wisest course for Belarus to reduce its heavy energy dependency on Russia, or even a sound policy decision? After analyzing and contextualizing the economic, environmental and geopolitical considerations relating to the project, the conclusion is a resounding “no.” Justification for the BNPP is meager and rushed, as the almost comical meetings in Austria and Lithuania over the plant’s environmental impact assessment, as well as the repressive meeting in Astraviec, demonstrated. Given the world’s financial vacillation, Belarus’s high level of external debt and an outdated energy infrastructure, the country has a plethora of other issues demanding its attention, and constructing a domestic nuclear power plant has no place near the top of the government’s agenda. Instead, Minsk should aggressively implement energy reforms, including modernizing existing traditional power plants, expanding grid integration with the Baltic consortium and promoting energy-saving programs. While the BNPP may ultimately reduce Belarus’s reliance on Russian natural gas from Russia, it would simply divert – not eliminate – this reliance as a result of Russian financing and maintenance.

Finally, if the Belarusian president really wishes to be the designated defender of Belarusian sovereignty, abandoning the project, inviting foreign input and implementing structural political reforms would be a good way to fulfill such a mandate. Countries that are bankrupt from fiscal irresponsibility emanating from the pursuit of irrational and unrealistic endeavors and which are stagnant and resistant to change eventually are left with nothing to defend anyway. Contrary to Minsk’s prevailing mentality vis-à-vis the BNPP and Belarus’s energy outlook, abandoning this project is not capitulation to the ideologies of others; rather, waving the white flag will actually yield victory.

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