

# The global energy transition confronts East vs West realpolitik



WHY ENERGY SECURITY MATTERS

Jack Mintz  
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## Executive Summary

**T**he attainment of greater energy efficiencies, with consequential reductions in carbon emissions, is unquestionably a reasonable goal. Equally important are questions as to how those goals may be achieved – and their consequences. Western political and financial leaders have emphasized policies that curtail supplies of vital fossil fuels. With our singular focus on environmental issues, we have lost sight of the important contribution that energy makes to economic resilience and regional security.

Efforts to curtail North America's use of vital fossil fuels through decarbonization and divestment have upended capital markets, including sovereign wealth funds. No one has yet addressed the enormous financing requirements that will be needed to accomplish a comprehensive transition away from those fuels. Discouraging investment in fossil fuels has already led to market instabilities, power interruptions, and continued price escalations. It will also reward producers outside of North America with enormous windfalls as is presently occurring. Putin's Russia, for example, has greatly strengthened its self-sufficiency in hydrocarbons and become a significant global exporter of them.

Actions to limit or abolish carbon emissions assume that energy transitions are straightforward, even inevitable, and that alternative energy solutions can provide practical, adequate, sustained, and secure energy supplies. But that is not the case. It is becoming abundantly clear that such policies, as practised in Germany to achieve climate-driven objectives for net zero carbon emissions, has delivered European energy security into the hands of Russia. In its quest to reduce fossil fuel production and use in the past decade, Europe has made itself reliant on Russian energy, the security consequences of which are currently playing out following Russia's invasion of Ukraine.

The push for a rapid transition to alternative energy sources raises several strategic considerations. One of them relates to the US Department of Defense. It is one of the single largest consumers of fossil fuels globally and uses more than 90 percent of the US government's total fuel consumption. The US Defense Department is not unique; modern military forces generally con-

sume fossil fuels at unprecedented rates. As a result, fossil fuel consumption is central to the effectiveness of the world's military establishments and to national security.

It has become apparent that energy transition policies in Canada and the US are ultimately working to undermine economic, energy, and national security in North America. Waves of heightened regulatory policies have emboldened widespread divestment in oil and gas production and transportation, resulting in supply shortages that boost prices for natural gas and electricity. Contradictory policies are leading to unresolvable conflicts. While North America and Europe do not have a strategic interest in reducing global energy supplies because the effect would be to increase energy prices for consumers – as is occurring – governments, particularly Canada, have nonetheless pursued policies to re-direct and curb national energy production from hydrocarbons.

Hence, energy transition policies in North America may increasingly be viewed as working to undermine continental energy and national security, as has clearly occurred throughout Europe. At a critical time when North American energy could be backfilling against sanctioned Russian oil and gas, Canada has limited additional supply available for export – a circumstance further hampered by an inadequate infrastructure that limits options for potential exports.

North America and particularly the European Union are experiencing the consequences of misguided energy policies that have undermined efforts to sustain energy security throughout the West. Recent geopolitical events have resulted in a wholesale, material re-evaluation of Western energy policies with consequential new directions to restructure energy infrastructure and trade not just in Europe but in North America.

## Sommaire

Il ne fait aucun doute que l'atteinte d'une plus grande efficacité énergétique est un objectif raisonnable, compte tenu de ses conséquences en matière de réductions des émissions de carbone. Tout aussi importante est la question de savoir comment atteindre cet objectif – et quelles en seront les impacts. Les dirigeants politiques et financiers occidentaux se sont concentrés sur des politiques qui ont diminué les approvisionnements en combustibles fossiles vitaux. En mettant l'accent exclusivement sur les questions environnementales, ils ont mis de côté l'importante contribution de l'énergie à la résilience économique et à la sécurité régionale.

Les efforts de décarbonation et de désinvestissement déployés en Amérique du Nord pour réduire l'usage des combustibles fossiles vitaux ont bouleversé les marchés des capitaux, y compris les fonds souverains. Personne n'a encore eu à satisfaire aux énormes besoins de financement que nécessitera la transition vers le remplacement complet des combustibles fossiles. La désincentivation aux investissements dans ce secteur a déjà entraîné des retombées sous la forme d'instabilités du marché, de coupures de courant et de flambées continues des prix. Elle gratifiera également d'une énorme prime les producteurs hors de l'Amérique du Nord, une tendance déjà amorcée. La Russie de Poutine, par exemple, a considérablement renforcé son autosuffisance en hydrocarbures avant de devenir un exportateur mondial important.

Les interventions visant à limiter ou à supprimer les émissions de carbone se fondent sur l'hypothèse que les transitions énergétiques sont simples et directes, voire inévitables, et que les solutions de remplacement peuvent fournir des approvisionnements énergétiques pratiques, adéquats, durables et sûrs. Or, ce n'est pas le cas. Il est de plus en plus évident que de telles politiques, telles que celles pratiquées en Allemagne pour atteindre l'objectif zéro émission nette, ont livré la sécurité énergétique européenne aux mains de la Russie. Dans sa quête de la dernière décennie pour mettre fin à la production de combustibles fossiles, l'Europe est devenue largement tributaire de l'énergie russe, une situation dont les conséquences sur la sécurité se manifestent aujourd'hui à l'issue de l'invasion de l'Ukraine.



La transition rapide vers les énergies de remplacement soulève plusieurs considérations stratégiques. L'une d'elles touche le ministère américain de la Défense. Ce dernier est l'un des plus grands consommateurs de combustibles fossiles à l'échelle mondiale, contribuant à plus de 90 % de la consommation totale de carburant du gouvernement américain. Le cas du ministère américain de la Défense n'est pas unique; dans l'ensemble, la consommation de combustibles fossiles des forces militaires modernes est spectaculaire. La consommation de combustibles fossiles est donc essentielle à l'efficacité des installations militaires partout dans le monde.

Il est devenu évident que les politiques de transition énergétique au Canada et aux États-Unis ont fini par miner la sécurité économique, énergétique et nationale en Amérique du Nord. La déferlante réglementaire a encouragé un désinvestissement généralisé dans la production et le transport du pétrole et du gaz, entraînant des pénuries d'approvisionnement qui ont fait grimper les prix du gaz naturel et de l'électricité. Des politiques contradictoires conduisent à des conflits indénouables. Même si, d'un point de vue stratégique, l'Amérique du Nord et l'Europe n'ont aucun intérêt à réduire l'approvisionnement énergétique mondial, car cette réduction aurait pour effet – à l'évidence – de relever les prix de l'énergie pour les consommateurs, les gouvernements ont néanmoins instauré des politiques visant à réorienter et à limiter la production nationale d'énergie à base d'hydrocarbures.

Par conséquent, les politiques de transition énergétique en Amérique du Nord pourraient être de plus en plus considérées comme portant atteinte à la sécurité énergétique et nationale du continent, comme cela s'est manifesté en Europe. À un moment charnière, un moment où l'énergie nord-américaine pourrait se substituer au pétrole et au gaz russes sanctionnés, le Canada ne peut compter que sur une offre supplémentaire limitée pour l'exportation – une situation aggravée par une infrastructure inadéquate qui limite les options pour les exportations potentielles.

L'Amérique du Nord, et surtout l'Union européenne, subit les conséquences de politiques malavisées qui ont miné les efforts visant à maintenir la sécurité énergétique dans tout l'Occident. Les récents événements géopolitiques ont abouti à une réévaluation en bloc et en substance des politiques énergétiques occidentales et ont eu comme conséquence logique d'inspirer de nouvelles orientations pour la restructuration des infrastructures et du commerce de l'énergie non seulement en Europe, mais aussi en Amérique du Nord.

## Резюме

Достижение большей энергоэффективности с последующим сокращением выбросов углерода, несомненно, является разумной целью. Не менее важны вопросы о том, как эти цели могут быть достигнуты и каковы их последствия. Западные политические и финансовые лидеры подчеркивают политику, которая ограничивает поставки жизненно важного ископаемого топлива. Уделяя особое внимание экологическим вопросам, мы упустили из виду важный вклад, который энергетика вносит в экономическую устойчивость и региональную безопасность.

Усилия по сокращению использования Северной Америкой жизненно важных ископаемых видов топлива путем декарбонизации и отчуждения перевернули рынки капитала, включая суверенные фонды благосостояния. Никто еще не обратился к проблеме огромных финансовых потребностей, которые будут необходимы для осуществления всеобъемлющего перехода от этих видов топлива. Расхолаживание инвестиций в ископаемое топливо уже привело к нестабильности рынка, перебоям в подаче электроэнергии и непрерывному росту цен. Это также вознаградит производителей за пределами Северной Америки огромными непредвиденными доходами, как это происходит в настоящее время. Путинская Россия, например, значительно укрепила свою самодостаточность в углеводородах и стала их значительным мировым экспортером.

Действия по ограничению или отмене выбросов углерода предполагают, что энергетические переходы просты, даже неизбежны, и что альтернативные энергетические решения могут обеспечить практические, адекватные, устойчивые и безопасные поставки энергии. Но это не так. Становится совершенно ясно, что такая политика, практикуемая в Германии для достижения климатических целей по нетто-нулевым выбросам углерода, передала европейскую энергетическую безопасность в руки России. В своем стремлении сократить производство и использование ископаемого топлива в последнее десятилетие Европа сделала себя зависимой от российских энергоносителей, последствия для безопасности которых в настоящее время разыгрываются после вторжения России в Украину.



Стремление к быстрому переходу на альтернативные источники энергии поднимает несколько стратегических соображений. Один из них касается Министерства обороны США. Используя более 90 процентов от общего потребления топлива правительством США, это один из крупнейших потребителей ископаемого топлива во всем мире. Министерство обороны США не уникально; современные вооруженные силы, как правило, потребляют ископаемое топливо беспрецедентными темпами. В результате потребление ископаемого топлива занимает центральное место в эффективности мировых военных учреждений и в национальной безопасности.

Стало очевидно, что политика энергетического перехода в Канаде и США в конечном итоге работает на подрыв экономической, энергетической и национальной безопасности в Северной Америке. Волны усиленной регуляторной политики воодушевили широко распространенное отчуждение от добычи и транспортировки нефти и газа, что привело к нехватке поставок, которая повышает цены на природный газ и электроэнергию. Противоречивая политика ведет к неразрешимым конфликтам. В то время как Северная Америка и Европа не имеют стратегического интереса в сокращении глобального энергоснабжения, так как результатом будет повышение цен на энергию для потребителей, как это происходит сейчас, правительства, особенно Канада, тем не менее, проводят политику перенаправления и ограничения национального производства энергии из углеводородов.

Следовательно, политика энергетического перехода в Северной Америке может все чаще рассматриваться как процесс, влекущий к подрыву континентальной энергетики и национальной безопасности, что явно имело место во всей Европе. В критический момент, когда североамериканское энергоснабжение могло бы заменить российские нефть и газ, попавшие под санкции, Канада ограничила дополнительные поставки, доступные для экспорта – обстоятельство, еще более сдерживаемое неадекватной инфраструктурой, которая ограничивает возможности для потенциального экспорта.

Северная Америка и особенно Европейский союз испытывают на себе последствия ошибочной энергетической политики, которая подрывает усилия по поддержанию энергетической безопасности на всем Западе. Недавние геополитические события привели к массовой, существенной переоценке западной энергетической политики с последующими новыми направлениями реструктуризации энергетической инфраструктуры и торговли не только в Европе, но и в Северной Америке.

## Introduction

**W**ith Russia's aggression in Ukraine, suddenly the issue of global energy security has emerged at the forefront of policy and political agendas. This has engendered a "fundamental re-think" of global energy policy as it impacts geopolitical stability. For example, in little more than a week, German foreign policy has been revolutionized with material decisions ranging from increased defence spending to accelerated plans for LNG import facilities to enhancing access to alternative energy sources.

Discouraging Western investment in fossil fuels, which results in supplies being depleted at rates faster than can be reasonably and economically replaced with alternative sources of power, will lead to market instabilities, power interruptions, and continued price escalations. It will disproportionately affect the world's poorest people and slow the economic modernization that brings with it less pollution. It will also reward producers outside of North America with enormous windfalls. As such, attempted "transitions" to "net zero" may be anything but orderly.

Remarkably, US policies to diminish reliance on fossil fuels have also been paralleled by pleas to the Organization of the Petroleum Exporting Countries–Plus (OPEC–Plus) for assistance in alleviating fuel shortages in the United States, and the predictable rising of gasoline prices for American consumers. These contradictory policies are examples of the complexities and difficulties that will be involved in attaining net zero emissions from hydrocarbons by 2050 – not just for the West, for North America and Europe, but globally.

The security consequences are already playing out in Russia's attack on Ukraine, which has pushed NATO countries to adjust to the first major European land war since 1945. However, in its quest to stop fossil fuel production in the past decade, Europe has made itself reliant on Russian energy. The Kremlin's concerted drive to expand its fossil fuel production while it diversifies its international customer base does not appear to reflect Western interest in net zero. As the West pursues alternative energy strategies, post-Soviet Russia has greatly strengthened, with determination, its self-sufficiency and global export position in hydrocarbons. The developing divergence in approaches

to energy production and transportation between East and West may be the single most worrying – and regrettably largely undebated – factor affecting global commerce and peace.

At a time of accelerating post-COVID demands for fossil fuels, it might be wise to step back and carefully consider the material economic, social, and security risks emerging from well-intentioned but largely unexamined “transitional” policies for energy. Until such time as the world finds the right balance between new energy sources and fossil fuels, energy markets are likely to experience not just shortages but wide supply and price swings from unintended, and unforeseen, developments. Indeed, the escalating political, financial, and military events that have occurred in late February 2022 may be the beginning of a much larger reckoning of conflicting global goals and aspirations for energy production and use.

## Energy and national security

Do we really think global powers are beyond undertaking energy wars? Think again. Western governments concerned with climate policies appear blind to the fundamental, strategic considerations of global energy: economics and security of supply. The developing divergence in approaches to energy production and transportation between East and West may be the single most worrying factor affecting global peace, including the risk to nuclear confrontation.

Environmental, social, and governance (ESG) policies aimed at curtailing North America’s use of vital fossil fuels through decarbonization and divestment have upended capital markets, including sovereign wealth funds, as investment in hydrocarbon production declines. International financial regulators, including a group of central banks and supervisors called the Financial Stability Board, have now created a global link of 31 central banks to assess the creditworthiness of borrowers in the face of risks from a changing climate. These concerns include the exposure of financial institutions to sectors affected by climate change policies, such as refined oils, natural gas and crude oil. For instance, the Canadian financial sector has an estimated \$240 billion outstanding in “climate-exposed” sectors, of which about \$70 billion is for the oil and gas industry (The Conversation 2022).

Many financial institutions and their institutional investors have joined together to divest themselves of their oil and gas holdings. These investors will probably soon be joined by federal financial institutions and their prudential regulators as they develop expanded credit and supervisory reviews of fossil fuel producers and refiners. In short, oil and gas producers struggling to meet developing supply demands, even while experiencing healthy cash flows, may expect to be confronted by ever-increasing regulatory demands while lenders

become increasingly wary of companies seeking capital to expand, or even maintain, their hydrocarbon production.

While both governments and the private sector have made decisions to curtail investment in fossil fuels, no one has determined or defined how to finance the transition away from those fuels. The current investment trends have been accompanied by public demands for governments to rapidly achieve a transition in energy production to achieve net zero in emissions. Whether this shift away from hydrocarbons to other renewable energy forms by 2050 is achievable without serious economic and strategic dislocations has yet to be seen. However, early signs, especially from the European Union, are not encouraging.

“*No one has determined or defined how to finance the transition away from those fuels.*”

The range and breadth of generally well-intentioned actions by those aiming for global decarbonization has developed considerable momentum and is supported by many political and financial leaders. These actions to limit or abolish carbon emissions assume that energy transitions are straightforward, even inevitable, and that alternative energy solutions can provide practical, adequate, sustained, and secure energy supplies. However, limiting production of fossil fuels in the West at rates faster than can be reasonably and economically replaced with alternative power would lead to market instabilities, power interruptions, and price increases. It will also reward, with enormous windfalls, fossil fuel producers outside of North America. At a time of accelerating post-COVID energy demand, chiefly for fossil fuels, it might be wise to step back and consider carefully the economic, social, and security risks that are emerging from these policies.

Consider, for example, the International Energy Agency's document, *Net Zero by 2050*, which was released on May 18, 2021. The document recommended “no new oil and gas fields” and “no new coal mines or mine extensions” (IEA 2021, 20), while engaging governments in an “immediate and massive deployment of all available clean and efficient energy technologies” (IEA 2021, 14). As Ainslie (2022) notes, the document “stunned energy company executives and fortified environmental advocates.” He goes on to say, “Not only does this involve a ‘huge decline in the use of fossil fuels’ but a transition to renewable energy with the objective of ensuring that renewables constitute 80% of total energy supply, essentially replacing the current supply mix of hydrocarbons.”

The IEA *Net Zero* document was a stunning endorsement of the goals articulated at the Glasgow COP26 November 2021 conference and served to work in concert with principles articulated in the United Nations Framework Convention on Climate Change. Notably, Canada has been one of the strongest and most vocal participants in these international gatherings.<sup>1</sup> Perhaps these political leaders should first consider the practicality, feasibility, and consequences of an excessively rapid, wholesale transition of global energy and economic systems away from fossil fuel use?

It is becoming abundantly clear that such policies, as practised in Germany to achieve climate-driven objectives for net zero carbon emissions, has delivered European energy security into the hands of Russia. Meanwhile, the COVID-19 pandemic has sparked rising political and economic dislocations throughout the West. It has also served to diminish the importance of rational assessments of the potential consequences of too-rapid transitions to renewable energy. According to some indicators, attaining net zero may prove to be financially and practically unattainable, but worse, the attempted transition to renewables could be anything but orderly. With very low emissions infrastructure currently accounting for less than 10 percent of global energy production, political and financial leaders – who generally have little formal training in energy systems or policies – have embraced the concept of a transition that they consider not just necessary but just, certain, and practical.

As respected international energy expert Daniel Yergin (2021) observes:

[A] most unwelcome guest appeared on the doorstep of the Glasgow conference: an energy crisis that has gripped Europe and Asia. Energy crises traditionally begin with oil, but this recent one has been driven by shortages of coal and liquefied natural gas (LNG). That sent prices spiking, disrupting electricity supplies in China, which then led to the rationing of electricity there, the closing of factories, and further disruptions of the supply chains that send goods to America.

In Europe, the energy shortages were made worse by low wind speeds in the North Sea, which for a time drastically reduced the electricity produced by offshore wind turbines for Britain and Northern Europe. Gas, coal, and power prices shot up – as much as seven times in the case of LNG. Factories, unable to afford the suddenly high energy costs, stopped production, among them plants in Britain and Europe making fertilizers needed for next spring's agricultural season.

Here, we suggest that the challenges that Yergin alludes to in any energy transition will be not just technological; they will involve economic, political, and security considerations. We also think that the transition will be far more difficult to achieve than most political leaders presently comprehend – or are willing to admit. As Joseph Calnan notes, “We are potentially facing a

global shortage of both traditional and renewable energy in the next decade. Mitigating its impact will require deepening the resiliency of the energy mix, diversifying sources of energy supply and strengthening buffers for all types of energy as the transition unfolds” (2021, 2).

## A developing East-West and North-South divide on energy policies

The West, appealing for ever-more drastic reductions in hydrocarbon use, may in fact be becoming increasingly separated from the ideals of less-developed countries who are redoubling their efforts for economic expansion using coal, gas, and oil. While the US and the EU see climate not just as an “existential” challenge but as a moral imperative, China, Russia, and India, for example, face much more immediate challenges as their economies struggle with pandemics, growth, and inequities that contribute to social and political instability. As exemplified by COP26, but largely ignored by commentators, there is a developing “East-West” divide on energy policy: Western governments are accelerating their commitments to net zero, while countries like Russia and China are choosing instead to move ahead aggressively with fossil fuel development and extraction.

Moreover, as Yergin (2021) points out, there is also a developing North-South energy policy divide. As Western banks and financial houses divest in hydrocarbon projects, developing nations have to contend with the consequences of energy poverty. Many developing economies are compromised by decisions that are making the replacement of less efficient fuels, such as charcoal (widely used in domestic applications), more difficult and costly.

As an example, Indian Prime Minister Narendra Modi’s government recently acknowledged that “Energy is the mainstay of the development process of any country” (Yergin 2021). In that context, India’s announced goals to achieve net zero have indeed been confirmed, but with a target date of 2070 – almost half a century away. As amply demonstrated by the history of the 20th century, a lot can happen in that length of time, not the least of which is geopolitical and economic change. Clearly, developing countries have an obligation to the poorest in their societies, and must pursue their own pathways to economic development and energy security. These policies sometimes conflict with the aspirations of wealthier Western democracies. “Border adjustment mechanisms” to protect the West as it encounters higher manufacturing costs from increased carbon price mechanisms may be feasible for Western economies that have shared goals for carbon and protect against unfair trade practices. But what will be the effect on developing countries that may not be able to meet those standards?



While Canada is committed to imposing carbon taxes that reach \$170 per tonne by 2030,<sup>2</sup> less-developed economies are vulnerable to difficulties in achieving required “carbon-emission thresholds,” and worse, encounter difficulties in procuring increasingly expensive oil or other low-carbon energy supplies required for their manufacturing and domestic requirements. The 2020 average global carbon price was US\$2; only seven of 45 countries have prices above US\$40 (Canada, Finland, France, Liechtenstein, Luxembourg, Norway, Sweden, and Switzerland), and those that do have carbon pricing schemes in place give significant exemptions to large emitters such as agriculture and other special cases.<sup>3</sup> Even though some countries in the East have adopted carbon pricing, the effective prices are low.

Meanwhile, China and India are in fact significantly increasing their coal capacities, accounting for almost all new coal plant construction in the world (Table 1). China has put into operation 25 gigawatt (GW) in coal power capacity in 2021 (41 GW the previous year) and India has introduced 6 GW in coal capacity in 2021 (2 GW in 2020). In North America and the EU, no coal plant capacity was introduced in 2021 except in Poland (460 megawatt (MW)). As of 2021, the United States has 227 GW left in coal power capacity, slightly less than India at 232 GW. Germany has 14 GW in coal power capacity and has introduced no new operating plants since 2015, except in 2020 (1 GW in capacity). The divide between East and West in coal power is striking.

**TABLE 1: NEW AND TOTAL COAL PLANT POWER CAPACITY (THOUSANDS OF MW) AS OF JANUARY 1, 2022**

	<b>Newly Operated Coal Power Capacity 2021</b>	<b>Total Coal Power</b>
China	25.2	1064.4
India	6.4	231.9
Japan	1.8	50.1
United States	0	227.0
World	45.05	2074.7
China and India share	70.4%	62.5%

*Source: Global Energy Monitor (2022) and calculations by author.*

Even as China and India race to meet challenges in energy generation, they have experienced some power shortages (China's shortages were related to regulated pricing). Clearly, demands for energy worldwide and most certainly in developing countries is soaring and, in an era of divestment, is leading to an inevitable supply crunch. While China and India together lead the world in solar and wind installations, they also remain undisputed leaders in coal production and consumption as they account for more than half of all global coal plants currently under construction.

## **Unanticipated consequences of the energy “transition”**

Faced with recovering demand that is outpacing supply, oil markets are increasingly vulnerable to supply shocks. Nowhere has this phenomenon been more visible than in the EU. The consequence of aggressive moves to decarbonize the EU has been accompanied by a shift of strategic, economic power to Russian gas suppliers. The EU imported 25 percent of its petroleum and 44 percent of its natural gas from Russia in 2020 (Eurostat 2021).

As issues of climate and decarbonization dominated political agendas the EU, Germany moved to increase its energy dependency on Russia by certifying the Nord Stream 2 gas pipeline – two pipelines that extend from Russia to Germany under the Baltic Sea. These plans are now compromised by EU regulatory demands and Western sanctions imposed in response to Russia's invasion of Ukraine, leading to Germany's de facto cancellation of the project's completion. The cancellation of Nord Stream 2 has also forced Germany to consider possible emergency measures to replace Russia's gas with Western LNG shipments, a decision to extend nuclear plants previously slated for closure, and even re-open some thermal generation plants.

Meanwhile, European natural gas prices within the EU in 2021 spiked up from €29 per megawatt hour (MWh) (Dutch TTF) on January 4, 2021, to €90.7 on December 31, 2021 – and it rose to €126 per MWh on February 17, 2022. This has forced the EU to consider whether it could consider natural gas and nuclear to be “sustainable.” Even at a time when EU energy markets are considerably distressed, such re-definitions are being opposed by interests implacably hostile to fossil fuels. While the debates on acceptable definitions of what constitutes “sustainable” swirl through European regulatory corridors, surging energy costs have pushed up food prices and reduced production from EU fertilizer manufacturers, which will have consequences for food security in the developing world. Facing these realities, EU president Ursula von der Leyen has reconsidered objectives for sole European dependence on renewable power, noting that “we also need a stable source, nuclear, and during the transition, gas” (Keating 2021).

These facts highlight the mistaken assumptions that aggressive renewable energy development could generate enough energy to make up for losses caused by the rapid abandonment of thermal and nuclear power. Germany has had to increase its imports of Russian natural gas while its energy policies have resulted in material price increases to consumers. Highlighting the unreliability of renewable power, the EU and the UK have experienced reduced power generation from the North Sea caused by unpredictably irregular winds that, in turn, have led to substantially increased energy prices.



*Russia may be considering reducing or even eliminating energy shipments to the EU.*

Many in the West have also expressed concerns about the strategic importance of the US\$11 billion Nord Stream 2 project. A US bill proposing sanctions on Russia stated that the pipeline would effectively pose an existential threat to European energy security, which appeared to presuppose that any energy derived from eastern (Russian) sources may pose a threat to the West (Prince 2019). Such assumptions fly directly in the face of current German energy policies that actively encouraged Russian energy ties which, until the invasion of Ukraine, was considered economically and politically sustainable. Historically, more than half of Russian gas sent to Europe crossed through Ukraine, which is a factor that undoubtedly prompted the Russians to seek alternative supply routes to Europe with projects like Nord Stream 2.

Notably, current energy supply shortages and escalating prices in the EU could have been alleviated had the EU, chiefly Germany, signed long-term delivery contracts with the Russian state-owned energy company Gazprom. The fact that Germany did not do so underlines the importance of assured delivery contracts, uninterrupted flows of energy, and a stable political climate. All of these considerations are now in jeopardy. In the wake of Russia's invasion of Ukraine, the German government suspended the certification of Nord Stream 2 on February 21, 2022. Worse, at the time of writing, credible sources are now suggesting that following escalating sanctions, Russia may be considering reducing or even eliminating energy shipments to the EU.

# The strategic importance of fossil fuels

The climate crisis appears to have obliterated memories of the history of conflicts based on the politics of energy – particularly oil. As Douglas Lovelace, Director of the Strategic Studies Institute at the US Army War College, commented:

The real danger is to relegate the world oil supply to the backwater of strategic studies. Strategists need to understand that the world oil supply is a global challenge that bears most heavily on the peace and prosperity of the international system. World leaders have an unprecedented opportunity to move this global issue to the top of their agendas. If they fail, their successors may have to deal with the problem “when it comes to visit” as a major and enduring crisis in the not too distant future. (Rosenberger 2015)

Jeff Colgan has noted that “between one-quarter and one-half of interstate wars since 1973 have been linked to oil” (2013, 1). He further warned against “unexpected sources of conflict” whereby conflicts over oil “can cause or exacerbate conflict in multiple ways: competition over shipping lanes and pipelines, oil-related terrorism, petro-aggression, and resource scarcity in consumer states are all potential sources of international conflict” (2013, 1). He advocated for a “broader understanding of how oil shaped the preconditions for war” (2013, 1). Surely, some might ask, are these not good arguments to accelerate the transition to renewable sources of energy? Perhaps – if, that is, alternative energy sources to oil are just that, an alternative. Might an “unexpected source of conflict” result from overly aggressive policies to curtail fossil fuel production that limit supplies to existing economies? The same can also be said about critical minerals that carry their own geopolitical security challenges.

Addressing climate change is unquestionably a serious global challenge. However, strategic imbalances in vital fuels are another serious matter – a policy arena in which Russia has, with determination in the post-Soviet era, greatly strengthened its global position while the West pursues alternative energy strategies. Russia’s concerted strategic drive to expand its Siberian oilfields and Yamal Peninsula gas while diversifying its international customer base, not just into the EU with the proposed Nord Stream 2 pipeline but also into China, may reflect its lack of concern about net zero or other international agreements to limit hydrocarbon use.

At one point it may have been interesting to speculate how the Russians regard Western policies that diminish production of strategic fuels – in peacetime – while ever-larger volumes of Russian crude oil are being imported into

the US. The recent imposition of sanctions on Russian crude has upended global energy markets as the West considers anew energy import systems particularly for the European Union. These developments are having a material impact not just on western energy markets but on Russian strategic exports and corporate investors who are now exiting, at considerable cost, Russian energy production co-ventures.

Russia and China's strategic realignments of military and economic interests now also involve developing world interests. Grossman (2022) pointed out that Russia, China, and Iran are now coordinating their naval exercises in the Indian Ocean. Russia and Pakistan have been strengthening their ties with the first-ever Russian presidential visit to Islamabad. Subsequently, following the Russian invasion of Ukraine, India has been caught between in its transition from overreliance on Russian defence supply chains and its ambition for democratic partnerships such as the Quad in the Indo-Pacific.

Russian and Chinese naval exercises with Iran, a major Middle-Eastern oil producer with nuclear aspirations operating under Western oil sanctions, demonstrate significant (and shifting) geopolitical alignments. While demonstrating solidarity with Russia, China unquestionably aims to secure access to material oil reserves in Iran, a partner in Beijing's ambitious Belt and Road Initiative (Majumdar 2021). As the world's sixth-highest greenhouse gas emitter, Iran faces many environmental challenges as its clerical military dictatorship prioritizes terrorism and nuclear negotiations over its economy. The Iranian regime's mitigation efforts on climate have been rated "critically insufficient" by the Climate Action Tracker (2021), which measures compliance with the Paris Agreement. With more than 90 percent of its energy mix composed of fossil fuels, Iran faces material challenges in making a transition to clean energy.

## **Wars are quite carbon intensive**

Russian criminal cyber-attacks on the Colonial Pipeline system in the US in 2021 led to temporary gasoline shortages in the US southeast and served to alert not just the Pentagon but the wider US public to American fuel security issues. The company later admitted to having paid a US\$5 million ransom to the Russian cyber-criminals who hacked its IT network.

The attack crippled fuel deliveries along the US east coast. A subsequent attack in early 2022 tied to the same criminal gang disabled parts of Germany's fuel distribution system with associated effects from Belgium to the Netherlands. The conflict between Ukraine and Russia has raised questions about the much more serious potential of a coordinated Russian cyber-attack to interrupt Western fuel deliveries, which might be launched in tandem with their ongoing invasion of Ukraine. As is becoming clear at the time of writing, interruptions to Russian and other international fuel supplies could have material economic consequences – and not just for Western Europe.

Prior to the Russian invasion, NATO Secretary-General Jens Stoltenberg had already called for Europe to “diversify its sources of energy”(Reuters 2022). It was a mid-winter call in the peak of a political confrontation with Russia – the primary energy supplier to the EU. He also warned that a strong alliance among NATO members is more “important than ever” amid mounting threats from China and Russia that have been aggressively pursuing fossil fuel development and use strategies.

There are other strategic considerations. For instance, the US Department of Defense is one of the single largest consumers of fossil fuels globally, using more than 90 percent of the US government’s total fuel consumption. According to the 2005 *CIA World Factbook*, if it were a country, the US Department of Defense would rank 34th in the world in average daily oil use, coming in just behind Iraq and just ahead of Sweden (CIA 2005). While having increased its purchases of green power, the US Air Force still remains the largest user of fuel energy in the US federal government – consuming 10 percent of America’s supply of aviation fuel. However, in the face of a changing climate, military establishments have begun to recognize that it is imperative that they make adjustments. Darby (2019) cited an exchange that captured these concerns:

During a 2019 climate-change town hall debate hosted for the Democratic presidential candidates, former vice president Joe Biden highlighted some of the concerns related to climate change and U.S. military operations. “The first thing that happened when President Obama and I were elected, we went over to what they call the Tank, in the Pentagon, sat down and got the briefing on the greatest danger facing our security. Know what they told us it was? The military? Climate change. Climate change. Climate change is the single greatest concern for war and disruption in the world, short of a nuclear exchange.”

The words “short of a nuclear exchange” are, perhaps, easily overlooked. While a changing climate is undoubtedly a primary concern not just for military planners but for the world, equally as important is the question of how countries and their military establishments deal with such challenges. In that regard, a major shift in policies to limit or “decarbonize” economies, particularly in the West, will change the market economies of nations and could lead not only to escalating energy prices but also to material demand-cycle shortages. These unintended but material developments could have real socio-political consequences for international strategic security.

Recall that modern military forces consume fossil fuels at unprecedented rates. As a result, fossil fuel consumption is central to the effectiveness of the world’s military establishments, especially for expanding modern naval fleets, armies, and air forces. Darby (2019) gives an indication of the magnitude of



this use when he notes that through 2019, the carbon emissions from recent war-related activity in Iraq, Afghanistan, Pakistan, and Syria alone are estimated at 400 million metric tons of carbon dioxide. Astonishingly, the US military has emitted an estimated 1.2 billion metric tons of greenhouse gas since the global war on terror began in 2001.

As one of the world's largest landlords and employers, the US military establishment directly employs more than 3 million people with forces deployed in approximately 130 countries. Reliable estimates indicate that the US military consumes at least 400,000 barrels of oil per day (half of that overseas). It should therefore come as no surprise that retired United States army general and former director of the Central Intelligence Agency David Petraeus commented that: "Energy is the lifeblood of our warfighting capabilities" (Crawford 2019, 1).

“*Fossil fuel consumption is central to the effectiveness of the world's military establishments*”

In sum, the US military is among the largest global consumers of fossil fuels and producers of greenhouse gas emissions. Is it any surprise that, in addition to concerns about climate change, US military officials continue to highlight the national security implications of being overly dependent on fossil fuels and not just with too few sources of secure supply? And, more importantly, do current US policies that encourage divestment in fossil fuels and pipelines diminish North American security?

Although international military forces may be attempting to dramatically alter their dependence on fossil fuels, recent research indicates that the opposite is occurring. For example, the US military has increased fuel consumption per service member significantly over the years. In the Second World War, it was at 3.8 liters of oil per day. This jumped to 34 liters per day in the Vietnam War and 38 liters per day in the 1991 Gulf War. During the wars in Afghanistan and Iraq, it reached 57 liters per day – and the US Air Force alone consumed about 9.85 billion liters of jet fuel, amounting to more than all the aircraft flown by US forces in the entire Second World War (Pirani 2018).

As Distel (2020) notes, “Without fossil fuels, America's global military operations would crumble.” He goes on to say that the US military consumes more fossil fuel than the entire country of Nigeria (with a population of 191 million) and “*the actual amount of fossil fuel consumption from American military activities may be much higher* due to military operations conducted

by the US Department of Energy, American private military contractors, the NASA space agency, and other American forces stationed around the world” (emphasis added).

These facts fly in the face of determined efforts by the current US administration to limit the expansion of fossil fuel exploration, development, and production within the continental US. There are material strategic security concerns here for the West (Peck 2021). Russia and China are aggressively developing their access to fossil fuels resources while the West appears to be set to deliberately reduce the development, production, and transportation of its secure continental supplies. The effect has been to place ever more emphasis on less secure international sources of supply.

Fossil fuels have been, and continue to be, a strategic geopolitical resource. In face of potential geopolitical “challenges” that require a North American military response, could a situation of reduced supply or access to these strategic energy resources not expose a significant vulnerability for the West? Given just how deeply the US military establishment is woven around fossil fuel use, how do policies by successive US administrations to reduce dependence on fossil fuels affect not just North American energy security but their military capabilities? Could it not be argued, therefore, that any policies to significantly reduce hydrocarbon production is militarily and politically destabilizing? This is a topic that should be more thoroughly debated.

Upon entering office, the Biden administration ignored these developing strategic supply issues and immediately took aggressive actions aimed at the US and Canadian fossil fuel industries. Supported by prominent climate activists such as former Energy Protection Agency Administrator Gina McCarthy and former Secretary of State John Kerry, who have consistently stated their support for aggressive cuts in US carbon generation, it is perhaps not surprising that Biden’s first executive order was to cancel the Canadian-funded Keystone XL pipeline. Next, the administration suspended hydrocarbon leasing on federal lands. Following that was an executive order calling for the federal government to be carbon-neutral by 2050. In addition, while advocating the implementation of accelerated federal purchases of electric vehicles (EV), Biden has visibly supported major US auto manufacturers (although not always Tesla’s non-union shop) in a drive to promote EV manufacturing.

Remarkably, these US policies to diminish reliance on fossil fuels have been paralleled by pleas from the US administration to OPEC–Plus for assistance in alleviating US fuel shortages and the consequent rising gasoline prices for American consumers. These contradictory policies provide examples of the complexities and difficulties that will be involved in the attainment of net zero emissions from hydrocarbons – and not just for the US and Canadian economies, but globally. That elusive policy goal may yet prove to be financially and practically unattainable. Additionally, there are associated concerns related

to continental energy security and global defence matters. These factors indicate that attempted transitions to net zero will be anything but orderly.

## The economics and politics of the global energy transition: A faltering international consensus

The International Energy Agency (IEA) has published predictions of increased global demand for oil until 2040 (IEA 2019). Population growth and GDP drive the demand for energy. The primary question is how demand will be satisfied in the next three decades. Since we do not as yet fully understand or have developed the potential technologies needed for decarbonization, there is significant uncertainty around the efficacy and wisdom of our energy policies. For the United States, another uncertainty is that if carbon policies cause high energy prices, to what extent will it erode US voter support – just as the US is facing mid-term elections?

Another major question is whether the path taken to get to net zero by 2050 is even feasible. Carbon capture, utilization, and storage (CCUS) aimed at reducing carbon emissions may be insufficient to blunt the effects of increased international demand for oil, gas and coal, even as the world moves toward renewables and nuclear energy. However, as the IEA has noted, almost 45 percent of the required reduction in net zero emissions by 2050 will depend on the development and commercialization of technologies not yet fully developed (IEA 2021). Even the IEA's roadmap cannot predict all the economic and political factors that will affect development – much less any geopolitical events that could change the economic calculations and strategic relations between nations.

Moreover, the cost of achieving these goals is significant. The International Renewable Energy Agency estimates that by 2050 it will cost US\$131 trillion globally for new energy transition technologies (IRENA 2021). McKinsey predicts a cost equal to US\$275 trillion or 7.5 percent of GDP on average over 30 years (McKinsey and Company 2022). Given the expenditure demands on today's highly indebted governments, these costs will compete with other public pressures like health care and education.

Demands for divestment are colliding with the reality that the world needs to develop new operating oil fields. In contrast to many financial institutions that are limiting capital investments in oil and gas, OPEC has warned con-

suming nations that oil prices are expected to escalate further unless there is more investment. OPEC (2021) estimates that US\$11.8 trillion in upstream and downstream oil investment will be needed through 2045 just to meet the growth in demand and compensate for declines from existing fields.

Such cost estimates are apparently rarely discussed in any forums associated with grandiose plans for reductions of global carbon emissions and they come at a time when China, Russia, and India are focused on other priorities for energy development. India, at least, has a genuine plan to reduce its carbon emissions through its involvement in the International Solar Alliance and its use of green technology, land and water reclamation, and smart city infrastructure planning. Following a meeting of G20 nations in Rome, and amid rising gasoline prices in the US, President Biden criticized China and Russia for their lackluster effort to address climate change. Coming on the eve of the COP26 Glasgow summit, Biden acknowledged that Russia and China “didn’t show up in terms of any commitments to deal with climate change. And there’s a reason why people should be disappointed in that. I found it disappointing myself” (Barrabi 2021).



*Europe is experiencing severe natural gas shortages while global demand for coal has surged to record highs.*

In remarks to assembled delegates at the COP26 conference, OPEC Secretary-General Mohammed Barkindo said “a failure to listen to all voices on issues such as reducing emissions, energy affordability, and security *could lead to unintended consequences*, such as market distortions, heightened volatility and energy shortfalls” (quoted in Meredith 2021 (emphasis added)). As global oil prices soar to their highest level in seven years, nearing \$100 per barrel, Europe is experiencing severe natural gas shortages while global demand for coal has surged to record highs.

The broader implication is that even as governments and businesses invest in low-carbon energy sources, the world is, and will be, reliant on fossil fuels. Without careful, intelligent management, any energy transitions could result in volatile energy prices with associated disruptions. Ironically, such eventualities could undermine public support for reducing greenhouse gas emissions. At some point, Western political leaders, most certainly including those in Canada, will have to entertain straightforward discussions with activists and

voters about the possibilities for and consequences of Western attempts to meet their demands for rapid abolishment of all fossil fuel use.

Exchanges at the G20 highlighted the developing discord between Western nations and other global emitters while yielding little progress toward new climate action. Accounting for approximately 80 percent of the world's carbon emissions, G20 nations reached an agreement to end funding for coal power plants abroad but did not specifically agree to actions to curb domestic coal use. Despite words presented on paper through surrogates, neither Vladimir Putin nor Xi Jinping attended the COP26 climate summit in Glasgow, Scotland.

While China is considered among the world's largest emitters of greenhouse gases, President Xi nonetheless opted not to attend the United Nations' summit in person, instead choosing to submit a written statement calling for developed nations to take action. China did reaffirm the goal of reaching net-zero carbon emissions by 2060 – an objective 10 years later than the United Nations target. Significantly, Xi's statement offered no new pledges for climate action. President Putin also opted not to attend the summit in person. However, a Kremlin spokesman maintained that the Russian government considered climate action as “one of the priorities of our foreign policy” (AFP 2021).

## **The developing Russian-Chinese energy cooperation axis**

A summit between Presidents Putin and Xi on the opening day of the February 2022 Winter Olympics came at a pivotal moment for both China and Russia. It signalled a new phase of an enhanced “unlimited partnership” between Beijing and Moscow against a backdrop of deteriorating relations with the democratic world – most certainly highlighted by the massing of Russian troops on the Ukrainian border before their invasion and the repositioning of NATO troops to forward bases in eastern European, as many nations declared a “diplomatic boycott” of the Beijing Winter Games (McCarthy 2020).

Xi has openly called for heightened coordination and collaboration in international affairs with Russia, especially in jointly countering Western-backed sanctions at the United Nations. While relations with the West have steadily deteriorated, China and Russia have drawn closer not just politically but also on energy security.

While the volumes of gas exported from Russia to the EU have been reduced, prices for fuel have spiked with the effect that consumers and manufacturers are bearing the brunt of increased costs. To the east, in an effort to diversify

its export base, Russia has been negotiating with China on a new gas pipeline. This development has pit EU interests against China's needs. The Power of Siberia Pipeline 1, which opened in 2019 and ships Siberian gas into China, is currently transporting approximately between 10.5 and 38 billion cubic metres (bcm) of gas annually – a far cry from the 200 bcm of gas that Russia exports to the EU.

Combined with Germany's suspension of Nord Stream 2, a flashpoint is occurring. These tensions are not just ending Russian shipments of gas to the EU, but will give Russia the incentive to seek a deeper partnership with China.

On February 4, 2022, in an affront to COP26 aspirations and sending a clear message to the West prior to Russia's invasion of Ukraine, Russia and China signalled their determination to forge ahead with expanded hydrocarbon production as part of their enhanced economic cooperation (Soldatkin and Chen 2022). President Putin announced the US\$117.5 billion energy deal between China and Russia's Rosneft and Gazprom to accelerate and expand Russian energy exports to China from its Far East production regions.



*Russia's invasion of Ukraine has roiled markets from energy to metals, grains, and fertilizers.*

In 2021, Russian pipeline and LNG shipments to China amounted to 16.5 bcm, of which Russia's Power of Siberia pipeline accounted for 10.5 bcm. The new deal increases prior agreements for Russian exports to China of 38 bcm/year to 48 bcm/year. As China's third largest supplier of natural gas, the new deal will further reduce Russia's traditional exports to the EU, in a contract widely viewed as an attempt by Moscow to also diversify from the US dollar as a hedge against any potential future American sanctions. The Kremlin is now facing broad Western sanctions in which this attempt is being constrained.

Russia's new contract is slated to supply an additional 10 bcm/year of gas to China over the 25-year term of contract and generate an estimated US\$37 billion in revenues to Gazprom. In a separate US\$80 billion extension to an existing contract, Russian oil giant Rosneft agreed to supply the China National Petroleum Corporation (CNPC) with an additional 100 million tonnes of oil through Kazakhstan over 10 years. The agreement sources gas from the Sakhalin production fields (these fields and pipelines are not part of Russia's European pipeline system) operated in partnership with several Western firms. Significantly, Russia has aimed to expand production while diversifying its customer base and furthering its economic ties to Beijing.



However, recent events surrounding Russia's military actions in Ukraine have dramatically turned global attention toward energy security around which there are emerging strategic ramifications. Russia's invasion of Ukraine has roiled markets from energy to metals, grains, and fertilizers, which is putting major inflationary pressure on the global economy. Several Chinese state-owned banks are restricting financing for purchases of Russian commodities while relaxing tariffs on Russian wheat imports, and OPEC-Plus faces more challenges in securing future energy supplies. Many now believe that only global reductions in demand will prevent further price escalations. With additional curbs placed on Russian banks and producers, some firms have raised their one-month forecast for Brent crude to US\$115 a barrel. These commodity markets have become very volatile.

With announcements that Western allies have disconnected Russian banks from SWIFT (the Society for Worldwide Interbank Financial Telecommunication), effectively cutting off the Russian central bank from the global financial system, there will yet be significant ripple effects as banking sanctions make it difficult for Russian companies to sell petroleum. Unthinkable only weeks prior to this writing, there is also an emerging question about whether Russia may choose to retaliate against the West by "weaponizing" its vast energy sources and turning off the taps to the West directly.

In late February 2022, the board of BP announced that it would abandon its 19.75 percent holding in Rosneft shares with both BP-nominated directors resigning from the Rosneft board. The following day, Shell withdrew from its partnerships with Gazprom. ExxonMobil followed by announcing that it would not invest in future Russian developments and was taking steps to exit from its Sakhalin-1 oil and gas development. These corporate developments arose from Russia's military assault on Ukraine and subsequent Western sanctions. Equally importantly, in addition to these significant financial developments, Russia's attack on Ukraine has also served to highlight significant holes in the energy security system of Western economies.

The "East," represented by China and Russia, understands the long-term energy game. If the West chooses to kneecap itself with a mismanaged transition process leading to high energy prices and large economic costs, China will be able to advance ahead with its Belt and Road Initiative and economic investments throughout Asia, Africa, and Latin America, and thereby continue to increase its economic influence. Most importantly, China is seeking to secure access to mineral resources and technologies to ensure it controls a large share of renewable energy markets as the energy transition process proceeds. Asian, African, and Latin American governments will resist foreign control over their resources, but ultimately they will be most influenced by the offer of capital they can invest in their development. Even after any energy transitions it undertakes, the West may find itself reliant on resources controlled by the East, which will further boost global energy insecurity.

## Conclusion

Western leaders, led chiefly by Canada, the US, and the EU, have largely accommodated passionate public campaigns that have called for rapid reductions in carbon emissions. In that regard, climate campaigners supported by certain UN agencies have, in large numbers, advocated not just for gradual reductions but for an immediate cessation in the use of hydrocarbons to achieve net zero emissions. Notwithstanding these conferences and agreements, there is a wide geopolitical divergence as to the possible dates and methods within which these goals could be achieved.

However, such aspirations appear increasingly to be at odds with geopolitical reality, one that reflects the wide divergence of opinion evident at the Glasgow COP26 summit. We are now in the midst of a global energy decoupling. Expressing their desire for enhanced economic expansion, some major powers are showing a determination to forge ahead with expanded hydrocarbon production. Meanwhile, policies supporting decarbonization have been confounded by unexpected economic and political consequences stemming from the heightened tensions in all of Europe, not just in Ukraine. Indeed, it has become apparent that energy transition policies in Canada and the US are ultimately going to undermine both energy and national security in North America. Waves of heightened regulatory policies have widely emboldened both governments and institutional investors to divest themselves of their oil and gas production and transportation holdings, resulting in supply shortages that are boosting prices for natural gas and electricity.

Contradictory policies are leading to unresolvable conflicts. While North America and Europe do not have a strategic interest in reducing global energy supplies because the effect would be to raise energy prices for consumers – as is occurring – governments have nonetheless pursued policies that are re-directing and curbing national energy production away from hydrocarbons. With Russia's aggression, the issue of global energy security has suddenly emerged at the forefront of policy and political agendas. This has engendered a fundamental re-thinking of global energy policy and its impact on geopolitical stability. For example, in little more than a week, German foreign policy was revolutionized following critical decisions ranging from increased defence spending, to accelerated plans for LNG import facilities, to enhancing access to alternative energy sources.

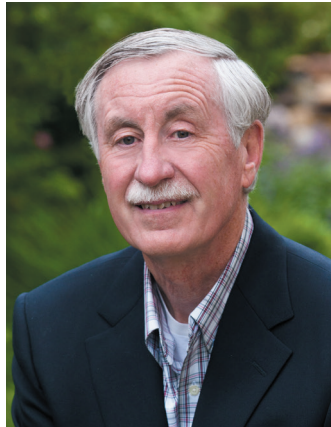
Germany's measures are just the beginning. They demonstrate just how challenging it will be to achieve any of the net zero goals, even if the players can overcome the significant technological and financial issues. There is a risk that energy transition policies may lead to unintended consequences, even if the achievement of those policies were to be politically, financially, and practically attainable, which is a big "if." Policies that call for overly rapid transitions to net zero may have consequences that are anything but orderly – or peaceful.

In sum, energy transition policies in North America may increasingly be viewed as working to undermine both energy and national security in the continent, as have clearly occurred throughout Europe. At a critical time when North American energy could be backfilling against sanctioned Russian oil and gas, Canada has limited additional supply available for export with inadequate infrastructure that limits options for potential exports. North America and the European Union are experiencing the consequences of misguided energy policies that have undermined efforts to sustain energy security in the West. Recent geopolitical events have resulted in a wholesale, material re-evaluation of western energy policies, with a consequential restructuring of energy infrastructure.

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## Endnotes

- 1 Canada sent 276 delegates to the 2021 UN Leaders Climate Summit in Glasgow, more than the host country UK and twice as many as the United States.
- 2 In December 2021, Canada announced that it would implement a federal tax of \$10 to \$50 per tonne of carbon emissions as of April 1, 2022 (an increase of 25 percent from the 2021 tax of \$40 per tonne) – a tax that is set to rise to \$170 per tonne by 2030. The Supreme Court of Canada upheld the constitutionality of the carbon tax in a six-to-three decision in March 2021 after certain provinces failed to produce carbon pricing regimes acceptable to the federal government. A second carbon tax, the Clean Fuel Standard, is slated to come into effect in December 2022. Canada has set an objective of reducing emissions by 40 percent to 45 percent below 2005 levels by 2030 and to net zero by 2050 with a plan to be announced in March 2022 as to how to reach the 2030 target. Canadian emissions have actually increased by seven million tonnes between 2015 and 2019. To reduce Canadian emissions by 286.6 million tonnes by 2030 would require the equivalent of eliminating all Canadian oil and gas sector emissions generated in 2019 (191.4 million tonnes) plus 51.2 percent of the 185.8 million tonnes of emissions from the transportation sector that year.
- 3 The EU Emission Trading System carbon prices are currently above €88 as of February 2022. Prices were taken from the World Bank’s Carbon Pricing Dashboard for countries and sub-national jurisdictions.

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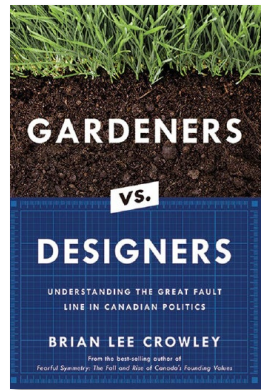
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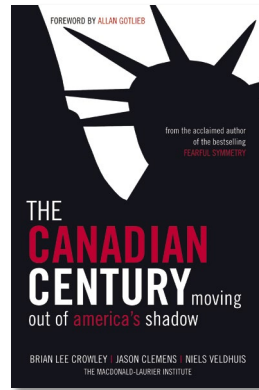
- Winner of the Sir Antony Fisher International Memorial Award (2011)
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- *Hill Times* says **Brian Lee Crowley** is one of the 100 most influential people in Ottawa.
- *Wall Street Journal*, *Economist*, *Foreign Policy*, *Globe and Mail*, *National Post* and many other leading publications have quoted the Institute's work.



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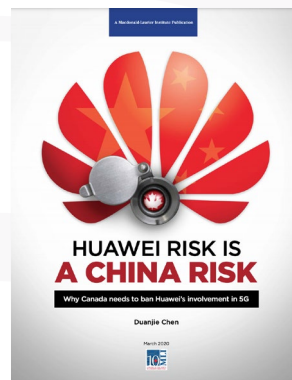
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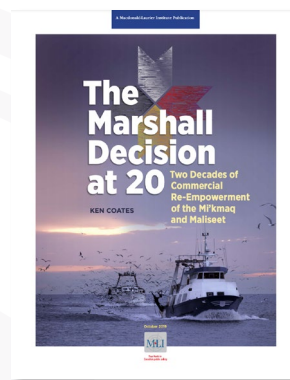
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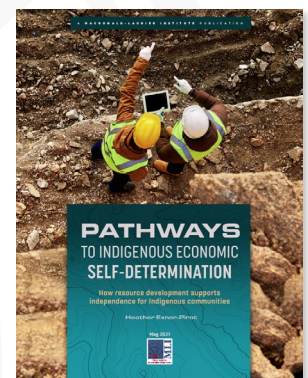
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### The Honourable Jody Wilson-Raybould

The **Macdonald-Laurier Institute** has been active in the field of Indigenous public policy, building a fine tradition of working with Indigenous organizations, promoting Indigenous thinkers and encouraging innovative, Indigenous-led solutions to the challenges of 21<sup>st</sup> century Canada. I congratulate **MLI** on its 10 productive and constructive years and look forward to continuing to learn more about the Institute's fine work in the field.

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