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## Energy Security



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# The European Union and Russian Energy

The challenge of working energy relations with Russia is a significant one, notably for Germany.

The building of a new natural gas pipeline from Russia to Germany and Europe more generally, called Nordstream II, has been the focus of controversy for several years, most recently by President Trump at the last NATO Summit.

A study by the European Union published in 2014 highlight the energy dependency challenge for Europe and we published an article on May 29, 2014 discussing that report.

That article follows:

2014-05-29

When Washington has a problem, it is good to have a study announcing that whatever Administration moving ahead on the problem, which most often has been caused by the opposition party in earlier years, with little or no causative impact from that Administration's party.

**Brussels has a variant of the same approach – issue a policy paper if you have a problem and come up with a complicated statement of the problem and assert that a resolution is on the way, given time and enough money and enough consensus among the national governments.**

With the Russians moving rapidly forward on the use of energy as a policy tool, it is not surprising that the EU has now issued a policy paper assuring us that a different future is at hand, in which the EU will be much more effective in deflecting Russian pressures.

**Yesterday, the EU issued its latest energy security policy statement.**

According to [the Press Release](#) accompanying the announcement of the advocacy for a new policy.

*The European Commission reacts on the current geopolitical environment and the EU's import dependence: It advocates a new European Energy Security Strategy. Diversifying external energy supplies, upgrading energy infrastructure, completing the EU internal energy market and saving energy are among its main points. The strategy also highlights the need to coordinate national energy policy decisions and the importance of speaking with one voice when negotiating with external partners. It builds on the progress already achieved since the gas crisis in 2009. The proposals of the Commission, including actions to ensure uninterrupted supplies this winter, will be discussed by EU Heads of State or Government at the European Council on 26-27 June.*

*European Commission President José Manuel Barroso said: "The EU has done a lot in the aftermath of the gas crisis 2009 to increase its energy security. Yet, it remains vulnerable. The tensions over Ukraine again drove home this message. In the light of an overall energy import dependency of more than 50% we have to make further steps. The Commission has tabled a comprehensive strategy today which will be discussed by EU leaders in June. I count on their strong support, since increasing energy security is in all our interest. On energy security, Europe must speak and act as one."*

*European Energy Commissioner Günther Oettinger said: "We want strong and stable partnerships with important suppliers, but must avoid falling victim to political and commercial blackmail. The EU and its Member States have a long list of homework in front of them: Collectively, we need to reinforce our solidarity with more vulnerable Member States. We also need to complete the internal energy market, improve our infrastructure, become more energy efficient and better exploit our own energy resources. Moreover, we need to accelerate the diversification of external energy suppliers, especially for gas. Only concrete actions will help."*

*To ensure uninterrupted supplies this winter, the Commission proposes comprehensive risk assessments (stress tests). These would be conducted on the regional or EU level by simulating a disruption of the gas supply. The aim is to check how the energy system can cope with security of supply risks and based on that develop emergency plans and create back-up*

*mechanisms. Such mechanisms could include increasing gas stocks, decreasing gas demand via fuel-switching (in particular for heating), developing emergency infrastructure like, for example, completing reverse flow possibilities and pooling parts of the existing energy security stocks.*

*To address the medium- and long-term security of supply challenges, the Commission proposes actions in several key areas:*

- Completing the internal energy market and building missing infrastructure links is essential to quickly respond to possible supply disruptions by directing energy flows across the EU as and where needed. The Commission has identified 33 infrastructure projects which are critical for the EU's energy security. Apart from that, the Commission proposes to extend the target as regards interconnection of installed electricity capacity to 15% by 2030 while taking into account the cost aspects and the potential of commercial exchanges in the relevant regions. (Member States have already committed to ensure interconnectivity of 10% by 2020.)*
- Diversifying supplier countries and routes. In 2013, 39% of EU gas imports by volume came from Russia, 33% from Norway and 22% from North Africa (Algeria, Libya). While the EU will maintain its relationship with reliable partners, it will seek ties to new partner countries and supply routes, e.g. in the Caspian Basin region by further expanding the Southern Gas Corridor; by developing the Mediterranean Gas Hub and by increasing LNG supplies.*
- Strengthening emergency and solidarity mechanisms and protecting critical infrastructure. In this respect the Commission will for example review the provisions and implementation of the Security of Gas Supply Regulation.*
- Increasing indigenous energy production: This includes further deployment of renewables, and sustainable production of fossil fuels.*
- Improving coordination of national energy policies and speaking with one voice in external energy policy. The Commission aims to be involved at an early stage in envisaged intergovernmental agreements with third countries that could have a possible impact on security of supply. Moreover, the Commission will ensure that all such agreements and all infrastructure projects on EU territory fully comply with the relevant EU legislation.*
- Further developing energy technologies.*
- Increasing energy efficiency. As buildings are responsible for 40% of our energy consumption and a third of natural gas use, this sector plays a crucial role.*

#### *Background*

*Recent events have raised EU-wide concerns about ensuring uninterrupted energy flows as well as stable energy prices. At the European Council of March 2014 the Commission committed to conduct an in-depth study on European energy security and to present a comprehensive plan on how to reduce EU energy dependence. The findings and the proposals will be discussed at the European Council on 26-27 June.*

*On the one hand global energy demand is growing and is expected to increase by 27% by 2030. On the other hand EU domestic energy production has decreased by almost one-fifth between 1995 and 2012. Today more than 50% of the EU's energy needs are covered by external suppliers: in 2012 almost 90% of oil, 66% of gas and 42% of solid fuels consumed in the EU were imported, representing a bill of more than €1 billion per day.*

*A recent piece published by the [EU Observer](#) provides a perspective on the context in which such an effort is being generated:*

*Although EU countries import 88 percent of the oil that they use, as well as 42 percent of solid fuel, the main concern of the commission and governments is gas – 66 percent of Europe's gas is imported at a cost of more than €1 billion per day.*

*Of the 400 billion cubic metres of gas consumed in the EU each year, around 40 percent comes from Russia's state-owned Gazprom. The majority of this is piped through Ukraine, currently embroiled in a dispute with Russia over how much it owes Gazprom for its past and future gas supplies.....*

*"We want to complete the internal energy market ... and move away from a monopoly, Russia in this instance," (EU Energy Commissioner) Oettinger noted.*

*The commission is also anxious to increase the amount of gas it buys from Norwegian company Statoil, which currently provides 33 percent of the bloc's gas compared to 39 percent from Russia's Gazprom.*

*But while Oettinger said a further 10 billion cubic meters per year could come from Norway in the short-term, EU officials have indicated that a larger increase in long-term supply will depend on whether Norway develops new gas fields in the Barents Sea.*

*In the meantime, the commission wants to run "stress-tests" over the summer to assess whether European countries could cope if Russia turned off the gas taps during the winter.*

*The bloc also urges governments to increase their gas storage facilities and agree more reverse flow deals allowing gas to be transferred to needy countries.*

*"We will look at an energy efficiency strategy for the next decade," said Oettinger.*

*The paper confirmed that a terminal to handle imports of Liquefied Natural Gas in Lithuania will be completed by the end of 2014.*

The Commission paper can be found here:

[http://ec.europa.eu/energy/security\\_of\\_supply\\_en.htm](http://ec.europa.eu/energy/security_of_supply_en.htm)

For a study (*Ensuring Energy Security in Europe: The EU between a Market-based and a Geopolitical Approach* by Raphaël Metais), which questions whether the EU approach currently adopted can actually work, see the following:

And the Germans and Russians are marching forward in building out the new pipeline, despite US, Northern European and Central European concerns.

A recent article published by [Andrew Rettman](#) in the EuObserver highlights the Russian-German dynamic.

In an article published on August 20, 2018:

*Russian leader Vladimir Putin has joined forces with Germany against the US over a new gas pipeline.*

*His weekend trip, which included a visit to Austria, also struck a symbolic blow against EU diplomatic sanctions over his invasion of Ukraine.*

*German chancellor Angela Merkel and Putin defended the Nord Stream 2 gas project at their meeting in Meseberg Castle, outside Berlin, on Saturday (18 August) in Putin's first bilateral visit to Germany since the invasion in 2014.*

*"In connection with Ukraine, we will also talk about gas transit. In my view, even if Nord Stream 2 exists, Ukraine has a role to play in gas transit to Europe," Merkel said ahead of their three-and-a-half hour talks.*

*The project will "perfect the European gas transport system and minimise transit risks. It will ensure supply for growing consumption in Europe", Putin said.*

*“Nord Stream 2 is an exclusively economic project. It does not close any possibilities for transit of Russian gas through Ukraine,” he added.*

*“Germany is one of the largest buyers of Russian energy resources ... consumption of Russian gas is growing from year to year. Last year, it increased by 13 percent,” he also said.*

*The pipeline, which is being built, will concentrate 80 percent of Russian gas sales to Europe on the German route from 2020.*

*Its critics say it will entrench European energy dependence on Russia and help Moscow to cut off Western allies, including Ukraine, for strategic reasons in future.*

*The Meseberg meeting came on the heels of Putin’s visit to Austria (Photo: Kremlin.ru)*

## **Australia and Energy Security**

09/11/2018

By Air Vice-Marshal John Blackburn AO (Retd)

The topic of energy has become so politicised, both between the major parties and within the Liberal party, that the national interest has been subsumed by both party and personal interests. The reality is that energy security, like national security, can only be addressed with consistent bipartisan political support.

Energy security is fundamental to our way of life. Without energy security and without resilient supply chains, our Defence Forces will not be able to operate. Likewise, our society would also cease to operate if our national energy infrastructure and associated supply chains falter.

The public awareness of these risks is relatively poor; even significant energy infrastructure failures, such as the 2016 South Australian electricity blackouts, seem to have faded from the news cycle around much of the country. In an effort to counter the lack of awareness there has been a considerable amount of public discussion of energy and fuel security in Australia over the past few years.

In 2013 and 2014, I wrote a series of reports on Australia’s Liquid fuel Security that were published by the National Roads and Motorists’ Association (NRMA).<sup>[1]</sup> More recently:

- The Australian Senate held an Inquiry in 2015 into Australia’s Transport Energy Resilience and Sustainability.
- Senators David Fawcett and Jim Molan, along with the House of Representatives member Andrew Hastie, have expressed their concerns repeatedly in the media regarding these issues.
- The 2017 Independent Review into the Future of the National Electricity Market, led by Dr Alan Finkel, Australia’s chief Scientist, made recommendations including the establishment of an Energy Security Board (*the Review focussed primarily on electricity and, to a lesser extent, gas.*)
- In August 2017, the Australian Strategic Policy Institute (ASPI) published its report on “The Challenge of Energy Resilience in Australia.”
- In February 2018, the International Energy Agency (IEA) published their review of Australia’s energy policies.
- In March 2018, when reviewing a critical infrastructure bill, the Australian Parliamentary Joint Committee on Intelligence and Security made the following recommendation “The Department of Home Affairs in consultation with the Defence and the Department of the Environment and

Energy need to review and develop measures to ensure Australia has a continuous supply of fuel to meet these national security priorities.”

Each of these reviews and reports have highlighted aspects of energy security that are deficient. However, energy security is about much more than just the Defence force or a more “reliable” electricity supply. It is about our security as a nation, it is about protecting our society and our way of life and, as such, it is a very complex issue.

The first problem we have in addressing energy security is that of language. The terms “national security” and “energy security” do not have common definitions amongst Australians. Nor is there a common view that energy security is a subset of national security. The Macquarie Dictionary defines national security as the protection afforded to a nation against any external threat to its existence.

However, when the Australian Government talks about “energy security” it defines it as the adequate, reliable and competitive supply of energy across the electricity, gas and liquid fuel sectors, where reliability is the provision of energy with minimal disruptions to supply. The conditions under which this is assessed are not clear. It is therefore not surprising that there are significantly different views regarding energy security when considered from industry, national security or bureaucratic policy perspectives.

In effect, the Government has articulated energy security through a “market lens.” This is also evident when the Government states that energy security is a “shared responsibility between governments, market institutions and energy businesses.”

When I was researching my fuel security reports I had the opportunity to interview the CEO of one of the Australian based oil companies. He made it clear that energy *security* was *not* his responsibility; his responsibility was for the *reliable supply of fuel to his customers and a return for his shareholders*, nothing more. From a business perspective this makes sense. However, with respect to security, someone has to be in charge.

The Government readily accepts responsibility for national security; when launching the 2016 Defence White Paper (DWP), Defence Minister Payne noted the Government’s firm commitment to the Australian people that “we will keep our nation safe and protect our way of life for future generations.”

Energy security is a prerequisite for protecting our way of life and therefore I am of the view that *markets cannot be held responsible for energy security which is a component of national security; Governments must take that responsibility.*

A further problem in the discussion of energy security is that of implicit assumptions. We often assume that if something hasn’t failed recently that it will continue to operate. This is a common assumption most of us make, for if we spent all day worrying about what could go wrong our lives could be miserable.

However, we do need to have some people think deeply about these issues and to make whatever preparations are necessary to ensure our ongoing security. I suggest that we need to apply the national security framework and analytical methods that we have applied to our nation’s Defence Forces to areas of risk such as energy security, that are critical to our national security.

Defence has often reflected on the expectations of the Government and the Australian population. Australians expect their Defence Force to operate when markets fail; in other words, Defence Forces are not just there for “business as usual” times. I would suggest that Australians would rightly expect essential services to operate when markets fail and to be secure and resilient; the public (and political) outcry following the 2016 blackout in South Australia was a clear example of this expectation.

How confident are we that such essential services are secure such that they would continue to operate in the event of some form of market disruption?

What assumptions do we as Australian’s make about issues such as our energy security that are flawed?

[1]The NRMA Fuel Security Reports are at: <https://www.aph.gov.au/DocumentStore.ashx?id=86e8dfbc-1467-47fe-ad1e-bc635407ecf8&subId=301736>; <https://www.aph.gov.au/DocumentStore.ashx?id=86e8dfbc-1467-47fe-ad1e-bc635407ecf8&subId=301736>; <https://www.aph.gov.au/DocumentStore.ashx?id=677ff8dd-ce35-40ee-9af8-bfec1e43d125&subId=301736>; and [https://www.dropbox.com/s/8vycz1u54a13uj0/Benchmarking\\_Australias\\_Transport\\_Energy\\_Policies\\_Report\\_December\\_2014.pdf?dl=0](https://www.dropbox.com/s/8vycz1u54a13uj0/Benchmarking_Australias_Transport_Energy_Policies_Report_December_2014.pdf?dl=0)

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## **The Impact on Defence and National Security**

Without adequate and secure energy sources, Defence cannot function. It is essential for Defence leaders to understand Australia's energy systems and supply chains and that we are undergoing a fundamental transformation in our energy systems. It is a critical vulnerability.

Energy Security is not just about fuel stocks for Defence. When I have spoken about this issue, a common question I am asked is "how many days of fuel stocks do we have in Defence?" The issue is far more complicated than the question suggests.

For example, if you doubled the current level of fuel stocks it would in reality make little difference if an energy supply interruption lasted longer than the number of days of stocks held. The issue is the assured ongoing *flow* of adequate energy, where stocks act merely as a buffer for variations in flow rate.

The other critical issue to understand is that if our civilian infrastructure and critical supply chains do not have assured energy, then Defence will not be able to operate. Defence is wholly reliant on the non-Defence support infrastructure to operate. I have therefore purposely referred to energy rather than fuel. Our infrastructure, and in turn, Defence relies on assured flow of multiple energy components including electricity, gas and fuels. Fuel stocks alone do not deliver energy security.

If we examine the 2016 DWP for its analysis of energy security and related Defence vulnerability, there is little to read. The DWP discussed the remediation of problems in fuel infrastructure that would address OH&S and some resiliency issues. There are good energy related developments across the Services, in Defence Estate and in Defence Science, but in piece parts. Compounding the lack of a comprehensive Government integrated energy policy and plan is the apparent lack of a Defence operational energy strategy and a Defence operational energy policy. This should be addressed as a matter of priority.

So, why have these issues not been addressed by Defence; why did I not realise the problem when I was the RAAF Deputy Chief?

I think it is an issue of culture and habit. Many in Defence consider fuel to just be a "logistics issue" and that will be managed by the logisticians and that energy is a domestic Defence Estate issue. Unfortunately, logistics has not received the priority it deserves as, for decades, the focus has been on the acquisition of new capabilities and their introduction to service.

Lieutenant Colonel David Beaumont, the Commanding Officer of the Australian Army School of Logistics, has an informative perspective when he states that "more often than not, the idea of the 'logistics system' is used to reduce the logistics process to a category of specialist activity. This view is part of the problem why logistics has tended to receive much less attention than it should warrant ..."[1]

In addition, the majority of recent Defence operations have been conducted under the umbrella of the US Forces where access to their logistics supply chains has perhaps made us somewhat complacent. We need to have a Defence Force with resilient and secure supply chains and that can operate, when required, independent of US support. Energy is a key logistics component that needs much more attention.

## **The Energy System Transformation**



We are undergoing a major transformation in how our societies work in areas such as the economy, energy and the environment. These areas are closely interlinked, but largely managed as separate competing issues and usually in a fragmented manner as a result of near term political goals.

Australia's energy systems are being shaped by the opportunities afforded by technology changes, by economic pressures and by our emissions reductions commitments under the Paris Agreement. The transition in energy systems will not come without a cost and yet our economy already appears to be at risk of stagnating. Our debt levels and economic performance give us little reserve with which to act.

In spite of the abundant blame throwing in the public debate, significant trade-offs will need to be made between these areas as we, and the wider global community, have to deal with these issues. Collectively, these challenges are a major threat to our way of life and are both a human and national security threat.

Technology changes will afford great opportunities for us, if they're applied intelligently. I argue they're not being done that way because of a lack of an integrated systems design approach.

As we collectively navigate these challenges over the next decade, a question we must address is whether or not Defence and our Nation can get secure and resilient energy supplies?

It will take many years to improve our energy security as the engineering solutions will be complex. We therefore need an honest statement of vulnerability, a risk mitigation/adaption plan and a realistic emergency response plan to deal with supply interruptions as we transition.

### **An Integrated Design Approach?**

Energy issues are so intertwined with other security developments that we cannot afford to ignore them. Solving the energy security issues of today will not be sufficient; we need to anticipate the energy systems of the future. As we try to address the energy transition challenge, there is an opportunity to learn from others who are making some progress in systems integration.

I will suggest that there may be some design thinking that we could adapt from *some* Defence Forces, that are in the process of transforming to an integrated design force model, and apply it to the challenge of integrated energy system design in Australia.

There has been much publicity in recent years about the transformation of our Defence Force into a "5<sup>th</sup> Generation" Force. The initial discussion centered around the RAAF's Plan Jericho, with subsequent discussion of a 5<sup>th</sup> Generation Navy and Army. The concept of a 5<sup>th</sup> Generation force was not just about acquiring 5<sup>th</sup> Generation platforms. It was about using the opportunity of 5<sup>th</sup> Generation technologies to integrate the existing 4<sup>th</sup> Generation platforms, to improve their capability and then, in turn, to amplify the capability of the new 5<sup>th</sup> Generation platforms. It was a change in the way of thinking about integrated design, it was about a cultural shift away from the platform towards thinking at the program or systems level.

If we apply the construct of "Generations" of capability to the energy sector we could perhaps describe biomass as 1<sup>st</sup> Generation, Coal as 2<sup>nd</sup> Generation, Oil and Gas 3<sup>rd</sup> Generation and Nuclear and Renewables as 4<sup>th</sup> Generation. I have referred to the latest energy technologies as 4<sup>th</sup> Generation because they are being developed and fielded the same as we fielded 4<sup>th</sup> Generation platforms, such as the F/A-18. With 4<sup>th</sup> Generation platforms, we acquired them in component pieces and hoped that other technologies would integrate the platforms once they were fielded. We learnt the real limitations of extant data links through that process.

Similar to what was done in Defence, 4<sup>th</sup> Generation energy systems are being acquired in component pieces, not as a part of an integrated system. This has led, as in the case of the South Australian Electricity blackouts, to systems failures.

So, the question is, can we think about a model for a 5<sup>th</sup> Generation integrated energy system?

The technologies necessary to implement a 5<sup>th</sup> Generation energy system exist today.

We just lack the integrated design approach. An example of such an approach can be shown in combination with solar and wind systems. Despite having the highest deployment of solar on domestic houses in the world, solar and wind systems provide only about 1% each of our energy supply.

The problem is that together they can at times provide more energy than is required; in some cases, it is the local electricity infrastructure that cannot handle the amount of energy that can be produced. At other times, solar and wind systems cannot meet the energy demand and thus they are blamed for supply failures.

Is there a possibility of utilising the energy produced by solar and wind systems differently? There are a range of excellent academic studies that have highlighted the value of pumped hydro systems to store renewable energy. At scale, pumped hydro seems to be the only viable solution, but at considerable cost and time for implementation.

There are also excellent examples of small scale, regionally-based renewable energy storage systems such utilising Hydrogen, which can also be used to produce a range of energy products. Hydrogen, in this case, is the medium to produce both a time and mode shift of renewable energy. Hydrogen could be used for power generation, for fuel cells in vehicles and trains, to produce ammonia, to supplement gas supplies and to produce gas. It could also provide a significant export resource to countries such as Japan, where Hydrogen imports have been identified as a Government energy policy priority.

Whilst not the panacea for Australia's energy needs, Hydrogen, as but one example, could be an important component of an *integrated* energy system, particularly as it could employ excess renewable energy capacity.

The production and transformation of energy in regional or sub-regional networks using such "energy integrators" could exploit an energy resource that is not utilised to maximum effect today. It is about integration, resilience, economics, energy security and scalability.

*It is about integrated design.* A more comprehensive discussion of this topic can be viewed in my presentation to the 2018 RAAF Air Power Conference: <http://youtu.be/568ezJ2mbeI>

## Conclusions

The people of Australia expect the Defence Force and the nation's critical infrastructure to operate not just when the markets are functioning normally, but when there is a problem. There are significant issues with our energy systems that should concern us all; unfortunately, the analysis of our energy security and resilience is inadequate and the management of energy security has been outsourced to the market.

The idea that we are at peace and "business as usual" is the appropriate model where the markets can manage all aspects of our critical infrastructure and supply chains is clearly out of date.

Energy security is a vital component of national security and an increased level of Government control / leadership with respect to energy security is warranted.

A 5<sup>th</sup> Generation Defence Force needs a 5<sup>th</sup> Generation energy system; so does our Nation.

The discussion of these issues is not just for our politicians; it is our collective responsibility to discuss these issues and to tell our politicians what we need to have done and not wait to just complain after our energy systems fail.

**Air Vice-Marshal John Blackburn AO (Retd) is the Board Chair of the Institute for Integrated Economic Research (IIER) – Australia and a Fellow of both the Institute For Regional Security and the Sir Richard Williams Foundation. The IIER- Australia is exploring the challenges of linked transformation of economic, environmental and energy systems; details of the issues under consideration can be found at the IIER(Europe) website – <https://www.energyandstuff.org/en>**

[1][https://www.army.gov.au/sites/g/files/net1846/f/transform\\_logistics\\_b5\\_faweb.pdf](https://www.army.gov.au/sites/g/files/net1846/f/transform_logistics_b5_faweb.pdf)

Editor's Note: The full article which is entitled "Energy Security: Is There a Problem?" was recently published by the Australian Defence Magazine and can be read in its entirety on their website:

<http://www.australiandefence.com.au/budget-policy/energy-security-is-there-a-problem>

What we republished with the permission of the author was the introduction to the article as well as the final sections of the article including the conclusion.

# The Centrality of Energy Security Policy for the Chinese

By Richard Weitz

China has a relentless focus on energy security, leveraging their domestic resources, their Russian relationship and imports from the democracies, such as Australia.

In an article published on November 28, 2012, Richard Weitz highlighted the core approach.

2012-11-28 by Richard Weitz

## **A drive for energy security is a central reality of Chinese foreign and security policies.**

The People's Republic of China (PRC) can no longer sustain its rapidly growing economy without importing massive quantities of energy.

China's rapid economic growth has fueled a demand for energy that has outstripped domestic sources of supply.

To compensate for the projected underproduction of domestic energy sources given further increases in anticipated energy consumption, the Chinese government has pursued a subtle energy security strategy that includes three major components:

- (1) Reforming the domestic energy sector to maximize production and attract foreign direct investment;
- (2) Expanding China's energy mix to reduce the nation's dependency on fossil fuels and contain pollution, and
- 3) Diversifying sources of foreign energy to limit dependence on any single country or producing regions.

## **The composition of the PRC's recently created 21-member National Energy Commission manifests the importance of national security issues in shaping the PRC's energy policies.**

The body includes the deputy chairman of the joint chiefs of PLA staff as well as the minister of state security, but not anyone in charge of negotiating China's climate change policies.

Beijing's ambitious "energy diplomacy," which has kept Chinese diplomats engaged throughout the globe, has thus far proven successful in achieving these three pillars, but the PRC has not avoided alarming other countries in the process.

These states worry that the Beijing's vision of a zero-sum world energy game could threaten their own energy security.

In addition, for a PRC government that has always sought to limit its dependence on foreigners, the country's growing reliance on external energy sources presents a major economic, political, and diplomatic challenge. The globalization of the energy market necessitates interdependence with foreigners.

While affirming support for "win-win" outcomes and declaring its intent to become a responsible global stakeholder, China has extended a wary welcome to carefully vetted opportunities.

Even so, since energy policy, environmental policy, economic policy, national security policy, and foreign policy are all inextricably linked, PRC policy makers remain alert to developments that could compromise their diverse goals in these areas. They have enforced such principles and safeguards as insisting on non-interference in Chinese domestic policies by foreign partners, tight control over information on government decisions and actions in the energy market, and treating international pressure to change its policies as an affront to China's sovereignty.

As in other areas, the central government has had difficulty in recent years in controlling the large number of newly independent actors in China's energy sector, which range from energy companies to military and intelligence agencies, especially when these operations extend to China's provinces or to foreign countries. Past bureaucratic restructuring has failed to assure the development and implementation of an integrated national energy policy under Beijing's direction.

Additional Chinese vulnerabilities result from conditions in important foreign energy regions. Since China obtains more than half of its energy imports from the Persian Gulf, PRC policy makers remain concerned that these flows are vulnerable to local political instability (whether in Iraq, Iran, or elsewhere) as well as interception by potentially hostile military powers, especially the U.S. Navy, or predations by pirates.

**China's energy trade with neighboring Russia and certain Central Asian countries have increased in recent years and can be expected to grow further.**

Since oil and gas from Russia and Central Asia can reach the PRC via land, these supplies are less vulnerable to Western interdiction efforts. Despite this proximity, however, various problems have resulted in Russian and Central Asian energy supplies currently accounting for less than 10% of China's total supplies.

**The PRC has also fostered energy supply relationships with African and South American nations.**

Beijing's ties with several of these countries is diplomatically contentious due to the ripple effects of dealing with the U.S. and Europe while also conducting business with governments hostile to Western powers.. Similarly, while China cooperates with India, Japan, and the United States on many energy

issues, the PRC's expanding energy ambitions and exclusionary practices have already brought Beijing into conflict with these other major energy-importing countries.

Since the early 1980s, China's economy has grown at an unprecedented rate, with a concomitant increase in energy consumption. Combined with a population of more than a billion people and limited domestic supplies of fossil fuels, these transformations have led the PRC to become a net importer of oil in 1993, following years of exporting oil. By 2006, China had become the world's third-largest net importer of oil and the second-largest consumer of energy in general.

**The gap between China's stagnant domestic energy production and rapidly increasing consumption is projected to expand even further in the next two decades as more Chinese consumers become sufficiently wealthy to buy more energy consuming devices, especially automobiles.**

China surpassed the United States in 2009 as the world's largest auto market, when it grew by almost 50%, making it attractive to industry leaders hit hard by the economic recession. The rise of the Chinese middle class will continue making tidal waves in the energy market, as more cars means more oil consumption.

According to the Energy Information Administration (EIA), China's energy resources will not cover the PRC's growing demand, particularly for oil and natural gas. Although China has substantial coal reserves (with 33% of global supply, the PRC has the third-largest reserves in the world), its oil (2-3%) and gas (1%) reserves are extraordinarily small compared with China's share of the world's population or geographic area.

Despite Beijing's continued hopes regarding the domestic exploration and production of oil, the mature oil fields that currently produce the majority of the PRC's crude oil, including Daqing, Shengli and Liaohe, are depleting rapidly. While gains in offshore production can help offset declines in onshore production, China's crude output is projected to remain relatively flat during the next two decades. Natural gas consumption as a percent of total energy consumption was only 3% in 2004, but is expected to rise to 8% by 2030.

In contrast, China is the world's largest producer and consumer of coal.

At the turn of the millennium, the country saw a steady increase in coal consumption, reversing a trend seen from 1997 to 2000. Despite China's determination to diversify fuel sources, coal has accounted for about 80% of the PRC's total energy consumption in recent years.

The EIA predicts that China's coal consumption will increase at an average rate of 3.5 percent per year to 2035, requiring substantial investments in new coal-fired power plants and associated electricity transmission and distribution networks (though much of this coal use is for industrial production rather than generating electricity).

In 2009 China became a net importer of coal, despite the fact that it is the largest coal producer in the world. The PRC imported 137 million tons of coal that year, along with the 2.971 billion tons of coal produced within China. Even with this substantial increase in coal-fired generating capacity, the EIA projects the share of coal in China's total energy generation to decrease slightly from 80 percent in 2007 to 74 percent in 2035 due to the more rapid growth in nuclear, hydroelectric, and other renewable energy production.

PRC policy makers have increasingly placed their hopes on developing these and other newer domestic energy sources. Although China's electricity will continue to be overwhelmingly supplied by burning conventional coal supplies, the PRC plans to increase substantially its use of nuclear power.

An even more important renewable energy source, at least in the near term, is hydropower. Total hydroelectric output in China in 2009 was 615.64 billion kWh, constituting 16.6% of all electricity generated, the highest total in the world. If it becomes operational next year as expected, the Three Gorges Dams project will be the largest hydroelectric power station in the world, with a total capacity of 22.5 GWe.

China has been investing heavily in its renewable energy sector since adoption of the 2005 Renewable Energy Law. Between 2005 and 2009, China has invested \$34.6 billion in renewable energy technologies, almost twice as much as the United States for that period.

The PRC has become the largest manufacturer of wind turbines and solar panels in the world. Renewable energy consumption accounted for 9% of total energy consumption in 2009, with a target of 15% in 2020. Wind power capacity alone grew 30-fold, from 0.8 GW at the end of 2004 to 26 GW by the end of 2009. The PRC also leads the world in coal-to-liquids production, and account for more than half of the world's total production of these sources by 2035.

**Even here, however, China's domination of the production of renewable energy technologies has created tensions between Beijing and foreign countries.**

A recent case filed with the U.S. Trade Representative by the United Steelworkers union charges that "China has utilized hundreds of billions of dollars in subsidies, performance requirements, preferential practices and other trade-illegal activities to advance its domination of the [renewable energy] sector." The case is one of many filed against China, though it was the first to come before the World Trade Organization.

## **Working the Challenge of Energy Security for Australia**

By Robbin Laird

2014-03-25

The global interdependence of the 21<sup>st</sup> century poses significant challenges when states are forced to handle disruptions, and when competitors to shape outcomes to their advantage use disruptions.

**Energy security is clearly a key part of global interdependence, and managing energy security is a key challenge facing 21<sup>st</sup> century global players.**

The crisis in Ukraine certainly brought home the dependence, which Europe has on energy supplies from Russia; in particular, German options in response to the crisis and to shape effective responses to Russian actions have been severely constrained by dependence upon Russia for energy needs.

This provides Russia with greater room for maneuver in pursuing its interests and shaping its options.

**Russia has been abetted as well by its rising influence in the Middle East with the ebbing of the “Arab Spring” and significant uncertainties about stability in the region with its impact on the role of oil and gas exports from the region as well.**

If the United States and Europe really wishes to get Putin’s attention, it would be about going after the revenue the Russians receive from over-dependence of the West on Russian energy sources. And President Obama would move ahead with the new pipeline with Canada and accelerate an effort to exploit oil shale and other capabilities for greater energy independence. Germany could as well address its non-existent energy independence policies.

Europe and the United States have also been affected by the two powers inability to address refinery capacity. The decline in refinery capacity in both – largely for environmentally charged reasons – has put both in a situation where an ability to surge stockpiles has been significantly reduced over time.

Over the past decade, most refining capacity addition has taken place in the Asia-Pacific and Middle East. This creates a favorable economic situation for liquid energy importers but not so much from a security point of view, whereby Europe and the US are in growing vulnerabilities to supply disruptions. Put in other terms, both regions rely more heavily upon the imports of liquid fuel from overseas refineries.

**In turn, this enhances the importance of global maritime shipping, an area also under threat from instabilities in areas such as the South China Sea and the Malaccan Straits.**

However challenging for Europe and the United States, Australia is in a significantly worse position.

**As an island continent at the bottom of the Asia Pacific region, Australia is heavily dependent upon liquid energy imports and with a rapidly disappearing domestic refinery production capacity, these imports necessarily are with regard to refined end products as well.**

In reports produced in 2013 and 2014, Air Marshal (Retired) John Blackburn has highlighted the challenges for Australia and the importance for Australia to reshape its energy approach to avoid an inevitable crisis flowing from its situation of energy dependence. The rest of this article is drawn from Blackburn’s reports.

The combination of diminishing refinery capacity along with over-reliance on a stable flow of imports from Asia, the Middle East and North America, has led to a situation where no country would wish to be: Australia currently possess the equivalent of only 23 days of actual consumption of liquid fuels in country at any one time.

This means that the country is subject to significant disruption. Beyond the question of the disruption of supply from an unstable Middle East, there is the direct impact of any disruptions in Asia itself. As of 2011, Singapore provided 51% of Australia imports of petroleum products.

**The threat from disruption of shipping lanes in the Asia Pacific region is a major one.**

*In times of significant economic turbulence, the security of shipping lanes is also an issue for consideration. Piracy, accidents, natural disasters, threats from state or non-state actors and closure of shipping lanes in times of tension or conflict – they all have the potential to impact the free flow of shipping and the timely delivery of oil supplies to Australia.*

*Defense planning has for decades included scenarios of defending the sea-air gap to the north of Australia. In such contingency operations, imported oil and petroleum supplies could be adversely impacted. In particular, Defense operations in the north of Australia would rely on the shipment of processed fuels into ports across the north of the country as there is not sufficient transport capacity in-country to transport the required amounts of fuels by land.*

*The shipping lanes to these ports would run through the potential area of operations and would therefore be at risk. It is concerning to note the Defence Minister's recent speech to the Lowy Foundation: "Fuel supply is a critical factor in sustainability ... While the fuel supply chain can meet current requirements, its resilience under the stress of major operations is much less certain."*

*Ports In States with no refineries (South Australia, Northern Territory, Tasmania and NSW [by 2014]) all liquid fuels must be imported. Ports can be subject to disruption from a range of incidents including accidents, equipment failures, industrial action, natural disasters and terrorist attacks. For example, the primary fuel port in South Australia is at Port Adelaide; a single, narrow, shipping channel services the port. A blockage of that channel as the result of a shipping accident/incident, could result in significant and prolonged disruption to fuel supplies for Adelaide and a large part of the state.*

*Such a disruption would be beyond the ability of market forces to respond, given the inability to transport sufficient fuel stocks overland to South Australia. Similarly, the*

*Darwin Port Facilities could be a limiting factor as they would be the single point of entry for fuels to support domestic demands and potentially a significantly higher demand for Defense operations in times of contingency operations.*

**Such a situation makes it clear why Australian defense forces are concerned about the air and maritime transit points into and out of Australia, and why maritime security in the region is a very high priority for the Australian defense and security forces.**

The defense and security of crucial infrastructure is a crucial requirement facing modern nations, whether it is energy or cyber security. To achieve a better situation for Australia, Blackburn proposes ways whereby Australia can put itself in a situation whereby a reasonable supply of energy stocks can be generated within Australia to allow for effective risk management when facing regional or global instability or threat situations.

The goal identified in the reports is to achieve by 2030 a 30% solution whereby

*30% of our transport supply would be secure from source through to delivery. This would ensure basic services could function in Australia in the event of a major and sustained liquid fuel supply disruption.*

*To achieve 30% liquid fuel security at least cost we would need to implement a balanced portfolio of initiatives that:*

- *Reduce the demand for liquid fuels;*
- *Develop additional alternative fuel sources to complement the existing oil produced in Australia;*
- *Ensure sufficient refining and processing capacity is maintained in Australia to process the secure liquid fuel sources; and*



- *Ensure liquid fuel stockholdings levels in Australia do not drop below the level necessary to support a secure supply chain.*

*The 30% could, for example, comprise 10% from Australian-sourced oil and 20% from Australian-sourced alternative fuels.*

*These alternative fuels could include:*

- *Biofuels;*
- *Gas (LPG/LNG39/CNG);*
- *Gas-to-liquid from conventional and nonconventional sources;*
- *Coal-to-liquid fuels (in the longer-term); and*
- *We could also support the increased use of electric transport options.*

*While this approach sounds relatively straightforward, it would not be easy to achieve.*

Blackburn is following his own recommendations as he drives an electric car (a Nissan Leaf) and has installed solar panels on the top of his house.

## **US Pacific Strategy Requires a Western Hemisphere Policy**

By Robbin Laird

With the Chinese actions in the South China Sea, energy policy is a key element clearly of any US and allied Pacific strategy.

In an article published first on January 11, 2013, I highlighted a broad look at what energy security policy for the United States required.

Energy security is a key element of national security. The missing piece of America's energy security policy, in turn, is the glaring absence of a strategy to coordinate and secure the enormous energy resources of the Western hemisphere.

Today, America is over-dependent on the increasingly volatile Middle East, China is increasingly aggressive in its quest for energy sources worldwide, and Russia is exploiting its energy reserves not just economically but as an instrument of global power. Clearly it's important to reduce demand through various domestic means and to increase supply from alternative sources. But for now and even the mid-term future, it is more realistic to generating energy now and in the mid-term via an effective national energy policy which relies on the Western Hemisphere.

In earlier analyses for AOL Defense, I focused on the need to defend the American littorals, on the defense of Alaska, and on Arctic engagement. These are key elements in allowing the US to move a realistic energy independence policy rooted in the Western Hemisphere.

Three Pacific states are critical in this effort: Canada, the United States, and Mexico. Unfortunately, politics in Washington have made such an energy nexus very difficult to forge. An effective Pacific strategy requires greater capability for these Western Hemisphere Pacific powers to tie their energy producing and transportation systems together.

1) The first key element is the evolution of Canadian policy in terms of energy and Arctic development. A central element of such a policy is the re-working of its pipeline systems. One pipeline is designed to ship product from a British Columbia

port to Asian customers (the Northern Gateway pipeline). The second is designed to move product from Canada into the United States through Montana and South Dakota.

The current pipeline is to be extended deeper into the United States – the Keystone Pipeline XL – but doing so has been blocked by U.S. policies. And President Obama simply postponed the decision on whether or not to do this until sometime this year, in spite of the obvious turmoil in the Middle East.

The Keystone Pipeline System is a system to transport synthetic crude oil and diluted bitumen (“dilbit”) from the Athabasca oil sands region in northeastern Alberta, Canada to multiple destinations in the United States, which include refineries in Illinois, the Cushing oil distribution hub in Oklahoma, and proposed connections to refineries along the Gulf Coast of Texas. It consists of the operational “Keystone Pipeline” and “Keystone-Cushing Extension,” and two proposed pipeline expansion segments, referred to as Keystone XL Pipeline and the Gulf Coast Project. After the Keystone XL pipeline segments are completed, American crude oil would enter the XL pipelines at Baker, Montana and Cushing, Oklahoma.

2) The second key element is US policy in Alaska and the Arctic.

The U.S. is dragging its feet on Alaskan oil and gas development, and the current pipeline is not operating at anywhere near full capacity. And, of course, the foot-dragging on Arctic drilling, which clearly could be connected to this pipeline, raises questions about the ability of the pipeline to provide a surge of support to the American economy in a crisis. ([Click here for a look at the capacity issue for the pipeline](#)).

The security and defense of these areas – in both Canada and the United States – will be of increasing importance to NORTHCOM.

There are significant resources at stake: oil, gas and rare earth minerals, to name a few. The Arctic Five — Russia, the US, Canada, Norway and Denmark — are the major claimants to the known resources. But others are eagerly involved in staking claims to what is not claimed and poaching on what is.

Most ominously, an increasingly assertive China has clearly marked the Arctic as a domain of strategic significance by their land grab for rare earth minerals in Greenland, their building of new icebreakers, and their focus on the strategic impact of the new transportation routes for commercial and military purposes. Much as the recent Chinese e-passports lay claim to resources in the South China Sea and India, their activities in the Arctic are clear indications of intent.

In our recent interview with the NORTHCOM/NORAD Commander Gen. Charles Jacoby, the General underscored the importance of shaping an effective Arctic strategy, notably with Canada.

“Three or four NORAD commanders from now, the Secretary of Defense or the Canadian Minister of Defense is going to ask, who is coming back and forth through the Bering Straits, what are they doing in the Arctic, what are their capabilities, and does that represent a threat?” Jacoby asked. “We can wait and surge capabilities to respond and spend enormous amounts of money in a crisis, or we can try to shape the capabilities we need over time to be prepared to answer those questions.”

3) The third key element of a Western Hemisphere energy policy is the role of Mexico after the return of the PRI to power as a result of the 2012 elections. The PRI is crafting a different energy policy, one that emphasizes exploitation of resources and enhancement of the Mexican economy from a resurgence of an energy sector.

The new President, Enrique Peña Nieto, declared that “Pemex (the Mexican state owned energy company) needs to benefit from associating with the private sector in order to make its production more dynamic and increase its profitability and transparency. We need to attract national and international private capital with regard to Exploration and Production where we can undertake more risk than is currently allowed. With regard to Refining, we also need to allow private investment. The formula for success consists in achieving a political consensus to achieve the ‘optimum mix’ between governmental action and private action within Pemex.”

Reform will be difficult in Mexico, but the new government clearly wishes to move in a new direction and augment the capabilities of Mexico overall in the energy sector.

Will renewed Mexican activism be folded into comprehensive U.S. leadership of a Western Hemisphere policy in which safety, security and defense are blended into an effective policy? Will the defense of the littorals and the role of American ports and refineries be included in an effective Pacific policy?

Assuming the U.S. could sort out an effective working relationship with Canada and Mexico on common infrastructure – pipelines, ports, refineries, etc. – and an effective way to provide security for the infrastructure, a key foundation would be laid for “fueling” forces for a Pacific Strategy.

And by working through a transparent and even handed relationship among the three, the United States would be in a position to use those foundational capabilities to work with others in shaping a more comprehensive and inclusive Western Hemisphere energy policy. For example, an effective Western Hemisphere energy policy can be extended southward to non-Pacific states as well, notably Brazil.

Brazil is a key energy power in the world today, and one which does not mind drilling for oil offshore. Its government is deeply concerned with the safety and security of offshore drilling, and the US efforts in coping with the oil spill in the Gulf, rather than being hidden behind political embarrassment, could be wrapped into an effective set of national tools for influence and solid foundation for global cooperation.

Although we hear much about securing the global commons from the Administration, apparently it does not embrace a Western Hemisphere energy policy. It is about time it did.

## Norway and Energy Security

By Robbin Laird

The Norwegian approach to energy security was outlined in a 2016 presentation by a senior Norwegian official.

That approach was highlighted and discussed in an article first published on February 26, 2016.

That article follows:

Yesterday at the Atlantic Council in Washington DC, Tord Lien, Norway’s Minister of Petroleum and Energy presented his assessment of Norway, the High North and European Energy Security.

Because he is neither the Foreign nor the Defense Minister, his discussion of security was limited to discussing security for the market more or less for Norway and for sustained economic growth in the European region.

<http://www.atlanticcouncil.org/events/webcasts/gas-from-norway-s-high-north-bringing-energy-security-and-opportunities-to-europe>

Having grown up in the Norwegian High North, the Minister emphasized that Norway unlike other members of the Arctic Council were working their resources in the region virtually year round.

**Known as the Blue Arctic, Norway is able to extend its production techniques shaped in the Norwegian Continental Shelf to the Arctic region.**

He focused on the importance of shaping a global natural gas market, and upon the contributions which natural gas can provide as Europe gets off of the use of coal, such as the current UK government has stated as a strategic objective.

<https://www.regjeringen.no/en/aktuelt/a-secure-source-of-energy-for-europe/id2465185/>

Energy security in the broad sense for Europe, for the Minister, was having a diversity of supplies. Norway and Russia are the top natural gas suppliers to the European market, and by having the Norwegian channel as well as LNG imports from

the United States, and growing supplies from Africa, Europe would not need to be dependent upon Russia, which would, thereby, enhance Norway's security.

Another aspect of security, which the Minister discussed, was that of the pipeline network, and he expressed concern with regard to the Russian-German pipelines from this perspective.

He also focused upon the need to expand the pipelines from the High North further South into an expanded European pipeline network. Obviously, ensuring the security of such a pipeline from both a safety and protection sense is important as well.

**Because Norway is already expanding its use of Arctic resources, due to its relative benign conditions, it will set the tone for dealing with Russia and other Arctic states, like Canada as the Arctic opens more generally.**

And although the Minister was presenting a market driven analysis of the High North and how it fits into the long-range energy plans of Norway, there are broader security and defense challenges of course, notably with regard to Russia.

The ethnic homogeneity of Norway clearly allows Norway to use its economic benefits from the energy trade in a way countries shaped by immigration dynamics, such as Canada and the United States will not.

**It is also the case that because the Norwegian High North is an integral part of Norway in a way Greenland and the Faroe Islands are not for Denmark that the concerns about outside intrusion within the internal Arctic development affairs which are central in Denmark, are not a preoccupation for Norway.**

It really boils down to dealing with their closest neighbor with regard to the Arctic, namely Russia. And here the question is how to cooperate but also best to protect one's sovereign interests.

This topic was discussed recently in Canada by the Norwegian Ambassador to Canada at the Conference on Security held in Ottawa, Canada on February 19, 2016. At that event the Ambassador highlighted the importance of the Arctic and the challenge of dealing with Russia.

To understand the rationale behind Norway's approach it is often instructive to look at the world from a circumpolar perspective and Norway's position geographically and strategically.

*80% of our maritime areas are north of the Arctic Circle and almost 90% of the export revenues come from the sea-based economic activities and resources.*

*In short, Norway has important economic interests to safeguard in the north.*

*Norway is therefore consistent in our support for international law. Our democracy and our welfare depends on it.*

*Russia*

*Located on NATO's northern flank, Norway puts special emphasis on the need for predictability and stability in our relations with Russia.*

*This is an area where NATO and Russian interests meet.*

*We have a common interest in keeping the High North a region of peaceful cooperation and sustainable development.*

*This is the situation today.*

*We want to keep it that way.*

*Russian aggression in Ukraine has demonstrated that Russian will and ability to use military force have changed the security landscape in Europe. Norwegian reactions to Russia's violation of international law in Ukraine have therefore been clear and unambiguous.*

*At the same time, as neighbours that share common resources and challenges in the north, Norway has been able to continue important practical cooperation and political contact with Russia. Confidence building is in Norway's interest.*

*Norway continues to support cooperation efforts in the Arctic Council and other regional forums where Russia participates. As we see it, engagement with Russia in the north contributes to maintaining the High North as a region of cooperation, low tension and respect for international law.*

*This year the Arctic Council celebrates 20 years of successful cooperation and enjoys a stronger position than ever internationally.* [ref]This summary of the Ambassador's remarks was provided by Chris MacLean, editor of Front Line Defence.[/ref]

**In many ways, the Norwegian position taken with regard to the Russians and the Arctic is similar to how Australia discusses its relationship with China, namely, it is about enhancing commitments to rules-based regional order.**

As the Norwegian Foreign Minister highlighted in a speech in Oslo on February 1, 2016 that challenge of dealing with a Russia which is a partner in the Arctic but also a global competitor:

*In Europe, Norway stands firmly with Ukraine, our allies and partners in defense of the principles that have made our security and prosperity possible. We all stand to lose from an international system where no cost is imposed on those that break the rules.*

*Norway's policy towards Russia will always be influenced by geographical proximity and a range of common interests, even in times of political differences.*

*During the Ukrainian crisis, Norway and Russia have been able to continue important practical cooperation and political contact.*

*Maintaining peace, stability and cooperation in the High North is a key foreign policy priority for Norway. Continuing our cooperation in the Arctic Council will remain important.*

*We also need to address the broader security implications of Russia's actions – by strengthening Nato's military capabilities and reassuring our Eastern allies of our solidarity and support. Their concerns are our concerns.....*

*All allies must be confident that their security concerns are taken seriously.*

*Norway will continue to raise Nato's situational awareness in our region.*

[https://www.regjeringen.no/en/aktuelt/security\\_challenges/id2473261/](https://www.regjeringen.no/en/aktuelt/security_challenges/id2473261/)

The video below is of Norway's Minister of Petroleum and Energy, Tord Lien, speaking at an event hosted by the Atlantic Council's Global Energy Center in Washington on February 25, 2016.

**Editor's Note: It might be noted that while the Norwegian Minister was in Washington, Norway was leading a major NATO exercise on Norwegian territory called Cold Response.**

As the UK Ministry of Defence has described the exercise from a UK point of view:

*Exercise Cold Response will draw in around 750 personnel from the Royal Navy and Royal Marines, along with two warships. It will give the UK and its NATO Allies the opportunity to test crisis response during the demanding winter months.*

*The multi-national exercise, taking place in Norway, will also involve Denmark, the Netherlands, Sweden and the US.*

*It follows the Defence Secretary's announcement earlier this month that the UK will double its maritime deployments to NATO in 2016.*

*Defence Secretary Michael Fallon said:*

*This underlines the UK's resolve to defend our northern allies at sea.*

*We are spending more on defence and increasing our maritime commitment to NATO in 2016.*

*All of this sends a clear message that we will respond to any threat in an increasingly dangerous world.*

*Exercise Cold Response covers land, sea and air elements. UK involvement focuses on maritime and will involve around 350 Royal Marines from 3 Commando Brigade working closely with Dutch marines.*

*The UK is also committing Type-23 frigates HMS Iron Duke and HMS Sutherland, each carrying around 200 Royal Navy personnel.*

*The purpose of the exercise is to demonstrate the flexibility and speed of response to reinforce NATO's northern flank. It forms part of the UK contribution to NATO's Assurance Measures.*

*Exercise Cold Response offers significant training value. The Royal Marines are the UK's cold weather warfare specialists and this exercise concludes their annual cold weather training period in Norway.*

**This would constitute another element of what one might call a multifaceted Norwegian response to dealing with the Russians.**

## **Working Energy Security for Australia**

By Robbin Laird

One aspect of the work of our colleague, John Blackburn, has been upon the centrality of crafting an energy security policy for Australia as part of a 21st century approach to national defense.

In an article published two years ago, his approach was highlighted.

2016-03-02 Our colleague Air Vice Marshal (Retired) John Blackburn has focused attention on the energy security shortfall for Australia for some time.

As an island continent at the bottom of the Asia Pacific region, Australia is heavily dependent upon liquid energy imports and with a rapidly disappearing domestic refinery production capacity, these imports necessarily are with regard to refined end products as well.

*In reports produced in 2013 and 2014, Air Marshal (Retired) John Blackburn has highlighted the challenges for Australia and the importance for Australia to reshape its energy approach to avoid an inevitable crisis flowing from its situation of energy dependence. The rest of this article is drawn from Blackburn's reports.*

*The combination of diminishing refinery capacity along with over-reliance on a stable flow of imports from Asia, the Middle East and North America, has led to a situation where no country would wish to be: Australia currently possess the equivalent of only 23 days of actual consumption of liquid fuels in country at any one time.*

*This means that the country is subject to significant disruption. Beyond the question of the disruption of supply from an unstable Middle East, there is the direct impact of any disruptions in Asia itself.*

*As of 2011, Singapore provided 51% of Australia imports of petroleum products.*

In the wake of the new Defence White Paper, there is growing focus of attention on the energy security challenge.

In a piece by Malcom Sutton published by ABC News (Australia) regarding the White Paper and the challenge:

*With the Government expected to release its latest Defence White Paper on Thursday, an adviser to the country's largest motorist association has said he hopes tensions in the South China Sea have forced a re-think of where Australia gets its fuel.*

*Retired Air Vice Marshall John Blackburn said Australia's food, water and medicine distribution was entirely reliant on transport fuel and the supply operated on a "just in time" philosophy for the sake of logistical efficiency.*

*Mr Blackburn, who is commissioned by the National Roads and Motorists' Association (NRMA) to provide consultancy and strategic advice on Australia's fuel security, said this unerring drive for market efficiency had led to four of the country's seven oil refineries closing down in three years.*

*"We're heading towards 100 per cent import dependency," Ret. Air Vice Marshall Blackburn said.*

*"But when the British were passing 40 per cent import dependency, they said they had a national security concern."*

*University of New South Wales Professor of International Security Alan Dupont agreed that Australia's growing dependency on imported fuel was "obviously a vulnerability".*

*"We don't have much in the way of refinery capacity in Australia right now and we don't have much in the way of strategic stock piles," he said.*

*"I think that dependency is only going to increase."*

*The South China Sea is a shipping route through which a large proportion of Australia's refined fuel is imported, including diesel, unleaded and jet fuel.*

*It is also emerging as a hot zone for potential conflict as China, the United States, Vietnam, Taiwan and the Philippines become increasingly invested in territorial disputes over islands in international waters.*

*Mr Blackburn said a scenario of conflict in the region and how it would affect Australia's fuel security was not considered in the Government's National Security assessment, "upon which the Energy White Paper (EWP) bases its assessment," Mr Blackburn said.*

*"The fundamental assumption they've made is because we haven't had a problem in 30 years, we're not going to have a problem."*

*With last year's EWP offering only brief discussion of the reliability of fuel imports, Mr Blackburn said he expected the Defence White Paper to look more "closely" at the issue.....*

*In late 2014, Al Qaeda reportedly published a map of critical petroleum shipping routes for the West, including routes between the Persian Gulf, Singapore and Australia.*

*It prompted warnings from the NRMA and the likes of Senator John Madigan, all of who have been critical of the steady decline in Australia's oil refining capacity.*

*The Australian Automobile Association told the Senate inquiry a major disruption to transport fuel supplies would be felt “across society and in every sector of the economy”.*

*The NRMA and Fusion Australia suggested that even a 20 to 40 per cent cut in the fuel supply, “brought about by factors such as conflict, would quickly lead to a situation whereby the country would start running out of food and medicines, while the economy would start to shut down”.*

*The Senate inquiry concluded there was no capacity for emergency reserves in the form of government-held or compulsory industry stocks of Australian fuel because its storage capacity was held within the supply chain.*

*It reported there was no mandate for industry to report fuel stock holding levels because their focus was entirely on a “just-in-time” security of supply to keep costs down.*

*It recommended a “whole-of-government risk assessment”, which would consider vulnerabilities due to military actions, acts of terrorism, natural disasters and industrial accidents.*

**And during Senate debate in Australia on February 25, 2016, the question of energy security was discussed by the Minister of Defence directly.**

*Senator MADIGAN (Victoria) (14:26): My question is to the Minister for Defence. Before the government commits to \$30 billion of expenditure: a well-equipped defence force could become a museum exhibit if it cannot be supported by adequate logistics in a time of conflict. There are serious concerns about the ability of our defence forces to have a guaranteed supply of fuel in a conflict scenario, given the fact that Australia has no government owned fuel stocks and does not mandate minimum stock levels for industry to hold. Fuel security is the job of government.*

*How would the government respond to a direct attack on our fuel supply lines?*

*Senator PAYNE (New South Wales—Minister for Defence) (14:27): I thank senator Madigan for his question.*

*There have been a number of discussions recently, and most recently I saw former Air Vice Marshal John Blackburn making some observations in relation to this.*

*Significantly, while Defence is indeed able to meet its fuel requirements through its own stockholdings, it is important to note that we do in fact have a number of other supply options.*

*Amongst those I would indicate that we have arrangements with our closest allies, who can be relied on should there be an interruption to the general supply of fuel.*

*I understand also in response to Senator Madigan’s question, particularly in relation to logistics support, that this is an aspect of the white paper, to which I would draw senator Madigan’s attention.*

*It is an area of enabling capability within Defence that has been significantly underfunded in recent years, and it is one which this white paper most importantly seeks to address and in fact readdress.*