

3 ENERGY SECURITY & NATO STRATEGIC INTERESTS AFTER 9/11

Towards a NATO Energy Security Support Capability.

Dr W. Duncan Wood

Director of Research, Institute for Applied Science

Abstract

This presentation offers a NATO context for the energy security issues discussed in this workshop. First, it highlights the actions taken by NATO and its Partners since the Al-Q'aeda terrorist attacks of September 11, 2001. Second, it underlines the emerging energy security threats that have been raised in the course of this workshop. Third, it looks at various energy security solutions put forward in the workshop and outlines how the working group established by this workshop can serve as the basis for a NATO Energy Security Support Capability. The creation of such a capability is clearly in line with NATO's new asymmetric threat mission, and it also reflects the new defense against terrorism focus of NATO's science program under whose aegis this workshop has been conducted.

Background

The Al Q'aeda terrorist attacks against the United States on September 11, 2001, which killed more than 3,000 people led to an immediate collective response by NATO's 19 member countries. For the first time ever, NATO invoked Article 5 of the 1949 North Atlantic Treaty and declared that the attacks constituted an attack against all the countries within NATO.¹ Moreover, the 27 NATO Partner countries reinforced this

position using the forum provided by the Euro-Atlantic Partnership Council (EAPC) to condemn the attacks on Washington DC and New York and to issue a joint pledge to combat terrorism.

The consequences of these decisions still have not been fully appreciated in the member countries: in effect, since 9/11, NATO has transformed its mission: -- from protecting its members against aggression by other states -- into an alliance which has triggered its collective self-defense obligation against a non-state actor and totally reorganized its operations in order to counter asymmetric warfare threats.

Understandably, the events of September 11, 2001 and the subsequent wars in Afghanistan (2001) and Iraq (2003) also have great implications for the NATO alliance's strategic thinking with regard to energy security. The September 11 attacks demonstrated the success that could be achieved with asymmetric warfare using commercial aircraft with full loads of jet fuel as highly destructive weapons of mass terror. The September 11 terrorist attacks also demonstrated the potential vulnerability of energy supply both in terms of the immediate vulnerability of physical energy infrastructure, and more broadly, in terms of the potential for geo-political and economic instability. Furthermore, the prominent role of Osama Bin Laden and other Saudi Arabian Al-Q'aeda militants in the terrorist attacks have inevitably led to concern about the political stability of the Gulf States who control 66% of known global oil reserves and 40% of known global natural gas reserves. Consequently, both NATO and the wider international community need to develop new energy security strategies in order to protect global energy supplies from regional instability and terrorism.

1 The Transformation of NATO since 9/11

1.1 The NATO Prague Summit, November 2002

9/11 has accelerated and expanded the transformation of the NATO alliance. In the Cold War, NATO's mission was primarily understood as defending the West against the threat of invasion by the Soviet Bloc. Now NATO is being transformed to meet new asymmetric warfare threats, terrorism and the proliferation of weapons of mass destruction. By invoking Article 5 in response to the 9/11 attacks, NATO identified terrorism and the proliferation of weapons of mass destruction as two of its principal challenges, and made clear that it would invoke the right of

collective self-defense against non-state actors. In addition, by sending troops to Afghanistan to fight Al Q'aeda and the Taliban NATO also underlined that its collective self-defense responsibilities now extend globally.

At the Prague Summit, November 21-23, 2002, NATO issued invitations to seven new states – Bulgaria, Estonia, Latvia, Lithuania, Romania, Slovakia and Slovenia -- thereby expanding the alliance to 26 Member states. But in the aftermath of 9/11, NATO has made clear that adding seven new countries to the alliance is only a part of a much broader transformation strategy which views enlargement of the alliance as a means to create a common security space capable of responding to the international security challenges posed by terrorism and proliferation of weapons of mass destruction.

1.2 The Prague Summit Declaration, November 2002:

Article 1 of the declaration states:

“We, the Heads of State and Government of the member countries of the North Atlantic Alliance, met today to enlarge our Alliance and further strengthen NATO to meet the grave new threats and profound security challenges of the 21st century. Bound by our common vision embodied in the Washington Treaty, we commit ourselves to transforming NATO with new members, new capabilities and new relationships with our partners. We are steadfast in our commitment to the transatlantic link; to NATO’s fundamental security tasks including collective defence; to our shared democratic values; and to the United Nations Charter.”²

The Prague declaration announces several concrete steps to transform NATO for its new focus on countering terrorism and the proliferation of Weapons of Mass Destruction:

1.3 Military Concept for Defense Against Terrorism:

Article 4d of the Prague Declaration identifies terrorism as a “grave and growing threat” to the Alliance and endorses a new concept for defense against terrorism developed by the NATO Military Authorities in response to the 9/11 terrorist attacks. The Concept uses NATO’s Threat Assessment

on Terrorism as the basis for its organization. The Threat Assessment identifies three main elements of the terrorism threat:

- Although religious extremism is likely to be the source of the most immediate terrorist threats to the Alliance, other motivations for terrorism could emerge from economic, social, demographic and political causes derived from unresolved conflicts or emerging ideologies.
- In addition, although state sponsorship of terrorism is currently in decline, political circumstances could lead to its rise, providing terrorists with safe havens and considerable resources.
- Although the predominant form of terrorist attack remains the creative use of conventional weapons and explosives, terrorist groups are expected to strive for the most destructive means available, including Weapons of Mass Destruction.

Based on this threat assessment, the Military Concept for Defense Against Terrorism defines four roles for NATO's military operations for defense against terrorism:

Anti-Terrorism

- Sharing of intelligence.
- NATO-wide standardised threat warning conditions and defensive procedures
- Assistance in air and maritime protection.
- Assistance to a nation wishing to withdraw its citizens or forces from an area of increased terrorist threat.

Consequence Management

NATO defines "Consequence Management" as the use of reactive measures to mitigate the destructive effects of terrorism. The Alliance can provide a wide range of support:

- Robust planning and force generation processes to rapidly identify and deploy the necessary specialist assistance. This could include, for example, the immediate assistance to civil authorities in the

areas of: Chemical Biological, Radiological and Nuclear defence; engineering; and management of Displaced Persons.

- The creation of an Alliance Registry of capabilities which are available at short notice to support national efforts.
- The establishment of a training and exercise co-ordination capability for development of multi-national response capabilities.
- The Euro-Atlantic Disaster Relief Co-ordination Cell could provide the necessary nucleus to enhance co-ordination between NATO and affected nations.

Counter-Terrorism

Offensive military actions designed to reduce terrorist capabilities to be undertaken as joint operations with NATO in either a lead or support role.

Military Cooperation

The Concept emphasizes that military operations should be coordinated and implemented in a coherent manner with diplomatic, economic, social, legal and information initiatives. Furthermore, it underlines the importance of ensuring international cooperation with the relevant civil authorities, such as the police, customs and immigration authorities, finance ministries, interior ministries, intelligence and security services. The Concept states that NATO needs to harmonize its procedures and efforts with civil authorities within nations, in order to maximise its effectiveness against terrorism.

1.4 The NATO Response Force (NRF)

NATO has undertaken to:

“Create a NATO Response Force (NRF) consisting of a technologically advanced, flexible, deployable, interoperable and sustainable force including land, sea, and air elements ready to move quickly to wherever needed, as decided by the Council. The NRF will also be a catalyst for focusing and promoting improvements in the Alliance’s military capabilities.”

This force is planned to be 21,000-strong, and ready to deploy anywhere in the world within five days to tackle the full range of military

missions – including, nuclear, chemical and biological threats. The NRF will reach full capability by October 2006.

1.5 Streamlined NATO Military Command

A leaner, more efficient, effective and deployable military command structure.

“There will be two strategic commands, one operational, and one functional. The strategic command for Operations, headquartered in Europe (Belgium), will be supported by two Joint Force Commands able to generate a land-based Combined Joint Task Force (CJTF) headquarters and a robust but more limited standing joint headquarters from which a sea-based CJTF headquarters capability can be drawn. There will also be land, sea and air components. The strategic command for Transformation, headquartered in the United States, and with a presence in Europe, will be responsible for the continuing transformation of military capabilities and for the promotion of interoperability of Alliance forces, in cooperation with the Allied Command Operations as appropriate.”

1.6 The Prague Capabilities Commitment (PCC)

This initiative is designed to improve and develop the military capabilities of the individual member states with regard to modern asymmetric warfare in a high threat environment. Individual Allies have committed to improve their capabilities in eight broad areas: (1) chemical, biological, radiological, and nuclear defense; (2) intelligence, surveillance, and target acquisition; (3) air-to-ground surveillance; (4) command, control and communications; (5) combat effectiveness, including precision guided munitions and suppression of enemy air; (6) strategic air and sea lift; (7) air-to-air refuelling; and (8) deployable combat support and combat service support units.

1.7 Defense Against Weapons of Mass Destruction

NATO endorsed five WMD defense initiatives: (1) a Prototype Deployable NBC Analytical Laboratory; a Prototype NBC Event Response team; a virtual Centre of Excellence for NBC Weapons Defence; a NATO Biological and Chemical Defence Stockpile; and a Disease Surveillance system.

1.8 Partnership Action Plan on Terrorism

The Action Plan preamble declares that the 46 member states of the Euro-Atlantic Partnership Council will:

“...make all efforts within their power to prevent and suppress terrorism in all its forms and manifestations, in accordance with the universally recognised norms and principles of international law, the United Nations Charter, and the United Nations Security Council Resolution 1373”. In this context, they will “find ways of intensifying and accelerating the exchange of operational information, especially regarding actions or movements of terrorist persons or networks”, and “emphasise the need to enhance co-ordination of efforts on national, sub-regional, regional and international levels in order to strengthen a global response to this serious challenge and threat to international security.”³

The Action plan identifies a series of specific action items related to information exchange and enhanced international cooperation to counter terrorism. They include:

- political consultations;
- information sharing;
- border control cooperation;
- scientific cooperation;
- civil-emergency planning cooperation;
- joint force planning.

1.9 NATO Science Program Refocused

At the 2002 Prague Summit, the NATO science program changed its mission to “Security Through Science” in order to focus on developing international dialogue about the new asymmetric threats and challenges facing NATO. The program’s post 9/11 priorities include: collaboration for defense against asymmetric threats and challenges; collaborations to counter other threats to security; technology sharing and transfer. The Science Committee also acquired a potentially significant new formal role as the science advisor to the North Atlantic Council on security issues.

2. EMERGING THREATS TO ENERGY SECURITY AND STABILITY

Energy security is vital for international stability. NATO member states are major energy consumers and are highly dependent on energy imports. Despite being the world's second largest producer of oil, the United States is also the world's leading importer of oil, while NATO countries - Germany, France and Italy - are respectively third, sixth and seventh in the list of top oil importers.

The security of energy supply has always been important to NATO, but 9/11 and the Alliance's new out-of-area mission with regard to asymmetric warfare, terrorism and WMD proliferation have necessarily increased the energy security challenges which NATO faces. At the same time, the NATO Prague Declaration of November 2002 provides a great opportunity to establish the sort of close international cooperation that NATO needs in order to recognize and cope with emerging threats to energy security. For example, the Prague Capabilities Commitment requires member states to develop their own asymmetric warfare capabilities, while the Partnership Action Plan Against Terrorism calls for increased coordination between Member and Partner states at all levels and explicitly identifies the need for activities such as political consultations, information sharing, border control cooperation, scientific cooperation and civil-emergency planning cooperation.

The presentations in this workshop identify a variety of energy-related economic, technical, and political/military factors that pose serious challenges to the international community's pursuit of energy security and stability. In particular:

Economic Challenges

- The global economy is expected to continue to be largely dependent on oil and gas for the next twenty to thirty years.
- The International Energy Agency expects global energy demand to rise 66% by 2030.
- Current levels of production may need to be doubled or even tripled in this period, with most of the increment coming from the Gulf States who control 66% of global oil reserves and 40% of global natural gas reserves.

- There are forecasts of significant capacity shortfalls. The anticipated shortfalls are primarily due to:
 1. Difficulties associated with increasing Gulf oil production—which will require external capital and technology investment in a region with high levels of terrorism and political unrest.
 2. Depletion of production in areas such as the USA and the North Sea.
 3. Overstating of reserves by major oil companies: In late 2002, it was found that Shell considerably overstated its reserves; and at the workshop it was suggested that Aramco, Saudi Arabia's national oil company has massively overstated its own reserves.
 4. Inadequate capital investment: The energy market is efficient in terms of providing cheaper energy to consumers but it deters long-term energy investment projects which could improve the security and stability of energy supply.
- The emergence of new energy markets in Asia is expected to lead to increased competition for Gulf and Caspian oil with China and South-East Asia taking the majority of the oil. China has already overtaken Japan to become the second largest oil consumer (5.7 million barrels/day) in the world and Chinese imports are predicted to rise from 2 million barrels/day to 15-20 million barrels/day by 2030.
- Rising oil prices caused by: increased competition from China and South East Asia for Gulf and Russian oil; capital markets anxiety about political unrest in the Middle East; and the potential for downward revisions of Aramco and other international oil companies reserves.
- Nuclear power faces rising security and environmental challenges which will raise the costs associated with the leading alternative to fossil fuels.

Infrastructure Challenges

- Existing oil and gas distribution networks -- for example those linking Asian and Western markets to the Russian Federation, the Caspian, the Middle East – are considered to be inadequate.

- The obsolescence of electricity generation equipment in the Russian Federation is causing huge inefficiencies in production.
- Infrastructure investment and technology upgrades available from commercial oil companies are frequently stifled by protectionist government policies designed to support national oil companies.

Political/Military Challenges

- Energy Market Leadership Changes:
 1. On the supply side, Russia (9 millions barrels per day) has overtaken Saudi Arabia (7.8 million barrels per day) and the USA (7.8 million barrels per day) to become the leading oil producer in the world. Russia is also a leading producer of natural gas and nuclear power. Although Saudi Arabia is still considered to be the prime provider of surge capacity, the role of Russia as an energy super is growing.
 2. On the consumer side, China with 5.7 million barrels/day has overtaken Japan (5.2 million barrels/day) to become the second largest oil consumer behind the United States (20.3 million barrels/day).
- Regional instability:
 1. The US-led military intervention in Iraq in 2003 has ended the regime of Saddam Hussein but it has also led to increased terrorism in the Gulf states, concern about the possible break-up of Iraq into several states, and uncertainties about the overall reliability of supply from the Gulf – a region which accounts for 4 of the world's top ten oil exporters (Saudi Arabia 7.1 mmb/d; UAE 2.2 mmb/d; Iran 2.2 mmb/d; and Iraq 1.8 mmb/d);
 2. Unresolved conflicts in the Caucasus pose challenges for the security of supply from Russia and the Caspian Basin.
 3. Continuing tensions in other oil producing regions such as West Africa pose challenges for efforts to increase the diversity of supply.
- The global spread of anti-western terrorism post 9/11.
- Technical Security Shortfalls:

1. Critical Energy System Infrastructure – oil and gas wells, pipeline networks, ports, refineries, power plants and electricity grids are extremely vulnerable to terrorist attack and any interruption in supply can have severe economic consequences.
2. Despite major shipping and port security initiatives, the sheer amount of shipping and pipeline networks means that these two elements of energy infrastructure will remain equally vital and vulnerable:
 - i) Shipping snapshot: 3,500 large tankers, 1,800 million tons crude and refined oil/per annum accounting for 57% of world oil consumption.
 - ii) Pipeline snapshot: 62,000 km oil and gas pipeline network in the Former Soviet Union alone.

- Commercial nuclear power proliferation risk: The nonproliferation regime and the Atoms for Peace program which have provided the basis for the international development of commercial nuclear power for the last fifty years are widely considered to be in need of reform. The risks associated with sharing nuclear technology and nuclear material under the program in its current form are generally considered to be too high - given the increased threat of radiological terrorism, proliferation of nuclear weapons and the high incidence of attempts to smuggle nuclear or radiological material.

3 ENERGY SECURITY SOLUTIONS

The NATO Advanced Research Workshop program was created not only to identify challenges facing NATO but also as a forum to bring together member and partner countries to work out solutions for the shortfalls identified. With this goal in mind, the NATO Windsor Energy Security Workshop was designed not only to highlight emerging threats to energy security and stability, but also:

1. to identify promising energy security developments and initiatives;
2. to serve as the basis for an ongoing forum for international energy security cooperation.

A variety of promising regional developments and energy security strategies have been put forward in the course of the Windsor workshop. Furthermore, the workshop has itself led directly to the creation of new international energy security initiatives.

Towards an Energy Security Support Capability

The NATO Windsor Energy Security Workshop can be used as the foundation for a new Energy Security Support Capability designed for NATO's post-9/11 focus on asymmetric threats. Doing so would help NATO to meet its new Prague Declaration commitments to expand international security cooperation through the Security Through Science program and the Partnership Action Plan on Terrorism.

The workshop forged a valuable public-private sector strategic partnership of energy security experts drawn from NATO, Partner and key producer and transit states. The workshop organizers are committed to the ongoing development of the working group's activities and the workshop has already resulted in two new energy security initiatives: (1) on energy security in the Caucasus, and (2) on protection of critical energy system infrastructure.

The Energy Security Support Capability would establish a knowledge resource comprised of prominent public and private sector policy-makers and energy security experts from the leading producers, consumers and transit states.

In establishing the Energy Security Support Capability, the energy security working group would work closely with interested parties from

NATO and Partner countries. A working relationship with the US government's National Security Support Capability initiative already exists. The US National Security Support Capability program is being developed under the aegis of the FBI and other US agencies and seeks to establish national and international security support and training capabilities, covering a range of asymmetric security threats, in cooperation with other countries and international organizations.

The Energy Security Support Capability would serve the following functions:

1. Provide NATO with a structured process for identifying decision paths and their potential outcomes in the formulation of energy security policy.
2. Develop a NATO energy security strategy that takes into account the political, economic and military challenges of the post-9/11 environment. National energy planning tends to be overly declarative, so the goal here is to develop energy security strategy based on a more neutral and scientific analysis.
3. Develop indicators and warnings of energy security vulnerabilities. To develop standard indicators and warnings of energy security problems, multidisciplinary experts would be brought together to participate in real and hypothetical energy security scenarios. These scenarios will use advanced simulation technology and existing public and private sector knowledge bases. The US National Security Support Capability has already developed a process to make the knowledge base smarter "as different groups run through a variety of simulations."
4. Prevent energy security problems escalating into crises through mitigation strategies. The Energy Security Support Capability would feature sectoral and country teams to "red team" potential crises and recommend mitigating strategies.
5. Enhance operational responses to high consequence energy security events including major safety crises and attacks by states or terrorist organizations. Using the working group's core energy security expertise and archived scenarios, teams of public and private sector policymakers and issue experts can provide a structured process for identifying decision paths and their potential outcomes.

The Caucasus Energy Security Initiative

Demonstrating its ongoing capabilities, the forum provided by the NATO Windsor Energy workshop has already led directly to the establishment of a new international initiative to enhance energy security in the this key transit region for oil and gas from the Caspian. The Government of Georgia has undertaken to host a conference to launch this initiative in Tblisi later this year. According to the Georgian Minister of Foreign Affairs:

“At the highest levels, the Georgian Government is committed to using this initiative to encourage Georgia’s political and economic development particularly in regard to joining European economic, political and security institutions.

As we conceived it, the Tblisi conference should serve the broader regional economic and security interests of the South Caucasus and its neighbors. The conference will be used to motivate a continuing process, featuring a variety of working groups focused on key issues, dedicated to increasing regional stability, predictability, western integration and full normalization of relations with the Russian Federation.”

Critical Energy Infrastructure Protection

Another initiative created at the NATO Windsor Energy Workshop is an ongoing dialogue on Pipelines, Ports and Shipping Security. Building on the critical infrastructure session at Windsor, the workshop organizers have established a new working group of shipping and pipeline operators, energy companies, governments and international agencies to coordinate public-private sector security cooperation in countering the asymmetric security threats. The UK Foreign & Commonwealth Office hosted a kick-off workshop for this initiative in July 2004.

Other promising developments identified at the workshop

The Windsor workshop put forward a variety of other promising regional developments and energy security strategies outlined below.

Oil and Gas: Reliability Through Diversification

A key principal of energy security for the NATO states is to achieve reliability of supply through diversification.

In this regard, the USA is pursuing a strategy of regional diversification to lessen its dependence on Gulf oil, and sees positive potential for the Caspian, Russia, North and West Africa, and even North America, which all have the potential to provide expanded oil and gas production for NATO states.

Another key element in establishing Reliability Through Diversification is to encourage capital markets to provide infrastructure investment for long-term energy projects by reducing the political risk associated with energy investment through financing and insurance programs such as the USA's Eximbank and OPIC.

Nuclear Power: Increased power generation from existing reactors.

In the near-term, despite major security and environmental challenges, nuclear power has considerable potential for improving energy security simply by increasing the amount of electricity generated at existing civil reactors. Although on a world-wide basis nuclear energy accounts for only 6% of energy needs, in fact nuclear power plays a much more vital role in electricity generation in several NATO and Partner countries. In NATO, nuclear energy accounts for 80% of domestic electricity generation in Lithuania, 78% in France, 57% in Belgium, 30% in Germany, 20% in the US and 13% in Canada. With regards to Partner countries, nuclear power provides 45% of domestic electricity generation in Ukraine, and 16% in Russia.

In the medium-term, support for spent fuel reprocessing, in tandem with the development of Fast Breeder Reactors by several countries, including France, Russia and Japan holds out the prospect of sustainable nuclear power production. However, Fast Breeder Reactors are a cause for major nonproliferation concerns because they produce more fissionable nuclear material than they use.

In the long-term, perhaps the most interesting prospect is the ITER project to develop nuclear fusion as a commercially viable, virtually inexhaustible energy source. The ITER project (Latin for "the way") is based on the Tokamak Reactor design which essentially captures and recreates the power of the sun through high temperature magnetic confinement of the readily available hydrogen isotopes - tritium and deuterium for fuel within a toroidal (donut-shaped) reaction chamber. The ITER project was initiated in 1985 by the US and the Soviet Union as an

East-West technology partnership and currently has five international partners: China, the European Union, Korea, the Russian Federation and the USA. Various experimental Tokamak reactors have already succeeded in generating limited amounts of fusion power; now, under the aegis of the International Atomic Energy Agency, the partners are moving forward on the establishment of the International Fusion Organization and site selection for a 500 megawatt reactor scheduled to begin operation in 2014.

The Russian Federation – Energy Partner

The Russian Federation (formerly NATO's main military-strategic opponent) is now increasingly important to NATO's energy security in its role as an energy superpower and major supplier to many NATO countries. Russia is the world's leading oil producer with 9 million barrels per day and the world's second largest oil exporter. It is also increasing the amount of electricity it generates from existing nuclear plants – currently 16% of domestic electricity is generated from nuclear - the Russian government plans for 33% of electricity to be produced by nuclear power by 2030. In addition, Russia has considerable excess oil and gas capacity in its off-shore Arctic fields in the Barents Sea and other areas. Fields such as the Shtockman gas field are being successfully developed with western involvement and many other fields have been identified in the Arctic but not yet developed. The workshop presentation on Tatarstan highlighted the fact that despite concerns about the openness of the Russian energy market, progress has been made in developing healthy regional energy economies. In the case of Tatarstan, the Republic has developed its own international export market, complete with its own tanker fleet and overseas refinery capabilities.

North Africa – Good Prospects for Increasing Capacity

One of the key developments identified in this region is the normalization of relations with Libya. This will encourage exploration and investment in Libya's oil and gas fields which have suffered from lack of infrastructure investment due to international sanctions. Libya currently produces 1.6 million barrels of oil per day and has gas reserves conservatively estimated at 1.3 trillion cubic metres. Libya's oil and gas fields are in close proximity to Europe and the West Libya Gas Project will

provide Italy with 8 billion cubic metres per annum by 2006 which will constitute approximately 12% of Italian consumption.

End Notes

1 **Article 5, The North Atlantic Treaty, Washington D.C. - 4 April, 1949:**

"The Parties agree that an armed attack against one or more of them in Europe or North America shall be considered an attack against them all and consequently they agree that, if such an armed attack occurs, each of them, in exercise of the right of individual or collective self-defence recognised by Article 51 of the Charter of the United Nations, will assist the Party or Parties so attacked by taking forthwith, individually and in concert with the other Parties, such action as it deems necessary, including the use of armed force, to restore and maintain the security of the North Atlantic area.

Any such armed attack and all measures taken as a result thereof shall immediately be reported to the Security Council. Such measures shall be terminated when the Security Council has taken the measures necessary to restore and maintain international peace and security."

2 For the full text of the Prague Summit Declaration, November 2002, see:
<http://www.nato.int/docu/pr/2002/p02-127e.htm>

3 See Prague Summit, Partnership Action Plan on Terrorism:
<http://www.nato.int/docu/pr/2002/p02-127e.htm>