



AGENCE FRANCE-PRESSE

Akademik Lomonosov, Russia's floating nuclear power station, is launched at St. Petersburg in June 2010. The portable power station can provide power to remote areas, but environmentalists are concerned about safety.

## Guaranteeing Energy Supplies

Europe is building partnerships to protect pipelines, tankers and power plants

By *per Concordiam* Staff

**Pipelines that carry much of the world's oil and gas snake through the depths of the Black Sea, the frigid waters of the Russian Arctic and cross some of the world's most dangerous conflict zones. The value of these pipelines, oil and gas installations, and nuclear power plants makes them attractive targets for hackers, pirates and extremists. An attack on critical energy infrastructure could have a substantial effect, not just on the health, safety and security of surrounding communities, but on the world economy. Protecting energy resources is particularly important as Europeans become more dependent on imported oil and gas and generate much of their electricity from nuclear energy. Energy infrastructure is uniquely border transparent, and cooperation to ensure European energy security is vital.**

"A terrorist attack against a critical energy infrastructure may happen in one country, but it would have a disruptive impact on all countries and stakeholders along the energy supply chain," Kazakh Ambassador Kairat Abdrakhmanov warned at a February 2010 Organization for Security and Co-operation in Europe conference.

### New Centre of Excellence

Energy security is a NATO strategic priority reiterated in its 2010 Strategic Concept, the road map for the Alliance's future. More recently, in November 2011, NATO and the government of Lithuania agreed to establish a NATO Centre of Excellence for Energy Security in the Lithuanian capital of Vilnius and, according to Lithuanian Ambassador Andrius Brūzga, could open as early as 2013. The centre will provide protection of critical energy infrastructure and help militaries become more energy efficient. This is an increasingly important goal, considering troops are using more technology on the battlefield and the world's militaries are large consumers of energy. Lithuanian Foreign Affairs Minister Audronius Ažubalis said in January 2011 that the centre will address "not only regional and theoretical energy security issues, but also the 'tough' energy security issues, such as energy infrastructure protection. This is very important, given the situation, the large number of attacks by terrorist organizations."

The centre is an extension of the smart defense approach that aims to increase military effectiveness and efficiency, NATO Secretary-General Anders Fogh Rasmussen noted at the February 2012 Energy Security Conference in Vilnius. Lithuania, a NATO partner and contributor of troops to the International Security Assistance Force in Afghanistan, is home to many energy experts in the public and private sector, universities and institutes. It is frequently referred to as an "energy island."

### Source diversification

NATO's energy security approach includes military cooperation and information sharing among partner countries. Some security experts suggest that energy source diversification should also be a goal, so that supplies won't be subject to severe disruption with the loss of a single exporter. Disagreements between Russia and Ukraine in both 2008 and 2009 resulted in natural gas supply disruptions to 21 European nations. Securing additional sources would diminish the impact of such disruptions. Past and present European Union energy commissioners Günther Oettinger and Andris Piebalgs have supported measures to ensure that energy producers don't monopolize energy infrastructure such as pipelines.

A plethora of solutions has been proposed to diversify Europe's energy sources, including pipelines that import gas from the Caucasus, Central Asia and the Middle East. Azerbaijan is a key player in this scenario because it is a major source of gas in the Southern Corridor and will likely open a

## Marshall Center Alumni Conference Addresses Energy Security in the Balkans

By Barbara Wither, Alumni Relations Specialist, Marshall Center

In an attempt to forge an energy policy for Bulgaria that stresses multinational cooperation, the Marshall Center's Bulgarian alumni association recently hosted a two-day event titled "Energy Security – National, Regional and Euro-Atlantic Frameworks."

Held in Sofia on June 21 and 22, 2012, the gathering brought together 68 participants from Bulgaria, Romania, Ukraine and the United States, as well as representatives from the Bulgarian government, universities and non-governmental organizations.

Bulgarian energy production is at a crossroads owing to the 2012 cancellation of plans to build the Belene nuclear power plant. Older nuclear plants had been decommissioned to satisfy conditions for the country's membership in the European Union.

Participants adopted a regional perspective in discussing how to satisfy energy demand without falling into dependence on unreliable providers. Topics included the feasibility of nuclear energy, shale gas exploration, natural gas pipelines, energy market liberalization and the protection of critical energy infrastructure.

One participant, Peter Popchev, Bulgaria's ambassador at large for energy security and climate change, noted that Southeast European energy security has implications for both the EU and the transatlantic alliance. Gas and oil distribution networks – both existing and proposed – crisscross that corner of Europe.

Vladimir Urutchev, Bulgarian member of the European Parliament, highlighted three goals of energy policy: Stronger partnerships, diversification and improved coordination abroad. "The EU needs integrated markets with common goals and regulations," Urutchev said.

new gas field by 2018. In 2012, Azerbaijan is also expected to decide which of three proposed pipelines would carry its gas to Europe: the Nabucco West, which would run from the Caspian Sea to central Europe; the South-East Europe Pipeline, from eastern Turkey to Austria; or the Trans Adriatic Pipeline, slated to transport gas via Greece and Albania across the Adriatic Sea. Ukraine is also working to diversify by reversing the flow of some of its existing pipelines to enable it to receive gas from the EU. A plan reportedly is under way for the German energy company RWE to sell spot gas, designed for immediate payment and delivery, to Naftogaz, Ukraine's national oil and gas company.

Liquefied natural gas (LNG) is another way European countries are branching out. When cooled to minus-162 degrees Celsius, the gas shrinks to 1/600 of its former volume, making it easy to transport by tanker ship. The United Kingdom, Spain, Portugal, Italy, France, Greece and Norway have sprouted LNG terminals, and Lithuania and Poland plan to build their own. LNG is produced mainly in Qatar, Algeria, Nigeria, and Trinidad and Tobago. The Ukrainian govern-

ment plans to invest about 790 million euros (U.S. \$1 billion) in the Trans-Caspian gas pipeline. The pipeline would transport LNG into Ukraine from Azerbaijan through Georgia and would give Ukraine a bargaining chip in price negotiations with Russia. Because LNG shipments often originate in politically unstable regions, they are a target for pirates and extremists. While maritime experts believe a successful explosion of an LNG carrier is unlikely, they are concerned with the security of the ship's crew. Pirates threatened such a ship in the north end of the Strait of Hormuz in February 2012. This is of particular concern to the LNG industry because about a third of the world's LNG and 70 percent of the UK's is shipped through the strait, according to a *Bloomberg Businessweek* article in February 2012.

## Pipelines expand

New pipeline projects should help Europe. The Nord Stream pipeline, which will transport natural gas across the Baltic Sea, from Russia to Germany, is expected to be completed at the end of 2012, and the South Stream Pipeline, from Russia to Bulgaria, is expected to commence operations in 2015. Yet another, the Trans Adriatic Pipeline, will transport gas via Greece and Albania across the Adriatic Sea to southern Italy and farther on to the rest of Western Europe. The fate of the Nabucco pipeline, which would supply Europe with Turkmenistan gas, is uncertain, as a route has yet to be finalized and funding is fickle.

Pipelines face challenges. Jurisdiction over construction, operation and maintenance can be problematic because of their transnational nature.



Nuclear scientist Adlene Hicheur was found guilty in May 2012 of conspiring with an extremist group to blow up a French oil refinery.

In April 2012, a pipeline transporting oil from Kirkuk in Northern Iraq to the Turkish port of Ceyhan was sabotaged. Pipelines have also been attacked in Saudi Arabia, Nigeria, Yemen and Egypt.

Attacks have broadened to include computer networks that regulate gas pipelines. In May 2012, the U.S. Department of Homeland Security (DHS) issued a

security alert regarding an ongoing, coordinated cyber attack on U.S. gas pipeline control systems. The hackers used a technique called spear-phishing to try to steal passwords by sending an email that appears to come from a friend or associate. When opened, malware infects computers. It is unclear to U.S. officials whether a foreign power was attempting to infiltrate the gas systems, as some previous oil and gas sector attacks revealed, or if hackers were to blame.

## Insider threats

In July 2011, a DHS intelligence report warned that al-Qaida planned to attack an oil or chemical refinery through the use of insiders to gain access to computer networks within the facilities. The report stated that "violent extremists have, in fact, obtained insider positions." Evidence collected from

Osama bin Laden's compound revealed that al-Qaida was actively working to repeat another 9/11-scale attack, and some experts say that attacking critical infrastructure would accomplish that. In 2011, using its online magazine *Inspire*, al-Qaida called on the assistance of those who work in "sensitive locations."

Corrupt insiders are a particular concern. In October 2009, nuclear scientist and al-Qaida suspect Adlene Hicheur was accused of borrowing money and "technical expertise" from extremists to blow up two oil refineries in France. Hicheur was sentenced to five years in prison in May 2012, according to *The New York Times*. Sabotage at a U.S. water treatment plant in Arizona was attempted in April 2011. A night shift worker tried to create a methane explosion that would have destroyed part of a neighborhood. The largest nuclear power plant in the U.S. is only 69 miles (111 kilometers) from the water plant.

The world has focused much attention on securing nuclear power plants. Since 9/11 and Japan's 2011 earthquake and tsunami, nuclear power plants in Europe have been tested to ensure they can endure a plane crash like the 9/11 attacks. Europe has 186 nuclear power plants and 18 more under construction, according to the European Nuclear Society, but Japan's natural disasters have brought the safety of nuclear facilities into question. The colossal earthquake and tsunami in March 2011 caused Japan's Fukushima plant to leak radioactive fallout. Shortly after, in May 2011, Germany agreed to shut down its nuclear reactors by 2022. One side effect of that decision is that Germany will likely grow more reliant on imported fuels such as gas.

### Innovations

Technology will play a role in warding off assailants set on disrupting energy supplies. Unmanned aerial vehicles are being used to patrol offshore gas fields;

Flames rise from a pipeline explosion in El-Arish, Egypt, in March 2012. Militants repeatedly sabotaged gas pipelines in Egypt in the past year.



underwater cameras, first used to monitor potential oil spills, are now being used to deter sabotage.

Some nations are even exploring deep-sea fission. The French government is working to build a nuclear power plant offshore and underwater. It believes that the underwater reactors are safer and less vulnerable to extremist attacks and natural disasters. The first reactor, Flexblue, is scheduled to open by 2016, according to *Forbes* magazine. Russia had a similar idea and is building a prototype of a floating nuclear power plant it hopes to sell around the world. Because of its mobility, the platform could theoretically be navigated away from turbulent weather. Anti-nuclear activists are not convinced of its safety and recommend the project be scrapped. Another approach is illustrated by Iraq, where coalition forces created defensive security rings around oil terminals near Basrah to thwart terror attacks. Ships approaching or entering the no-go zone are warned off.

The opening of the new NATO Centre of Excellence for Energy Security in Lithuania raises energy security as a top NATO priority and encourages the collaborative exchange of expertise and experience. As extremists continue planning attacks against critical infrastructure – by the brute force of explosives, cyber attack or corrupt insiders – the need for protection grows. Preventing disruptions to the world's oil, gas and electricity supplies is a goal worth embracing. □

*The theme of the next issue of per Concordiam is energy security.*