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ISN Special Issue May 2009

Small Group Threats to Global Energy Infrastructure

Attacks aimed at energy infrastructure (EI) - which include oil, gas and electricity infrastructure - have occurred across the globe. Colombian-based non-state armed groups, the Revolutionary Armed Forces of Colombia (FARC) and National Liberation Army (ELN), have targeted electrical pylons and oil pipelines for decades while small groups in other countries have also used EI as a strategic weapon and economic target in their politically violent campaigns.

Since 2000, however, the targeting of EI has morphed into a phenomenon where non-state armed groups are using threats to EI as a springboard to air grievances to the global community in addition to providing invaluable financial support to fuel their politically and criminally motivated movements.

According to data provided by the US National Counterterrorism Center's WITS terrorism database and the Global Terrorism Database (GTD), there have been nearly 1500 reported EI attacks between 2000 and 2008; with at least 200 attacks occurring annually since 2005. This data also reveals that EI targeting is occurring more frequently and is becoming more dispersed. While Colombia, Nigeria and Iraq have been the epicenters of EI targeting, many sporadic cases have emerged in Turkey, India, Mexico and Chechnya.

It bears mentioning that the majority of attacks are aimed at oil and natural gas (ONG) infrastructures, such as tankers, refineries and pipelines. Such assets have varying degrees of protection, and are found or must transit through unstable regions.

Overall the canvas paints a concerning picture that illustrates the interconnected and interrelated nature of modern hybrid security threats. To better understand this issue, this newsletter will briefly discuss the three key factors influencing the targeting of EI in the 21st century, and highlight necessary counter-measures.

1.1 21st Century Characteristics

There are three key developments related to EI targeting that have affected the motivation of groups and consequences of attacks. The first deals with small group dynamics. Today's non-state groups are fueled by interwoven motivations and empowered with 21st century advances made through affordable and assessable technology, mobility and access.

Piracy off the coast of Somalia presents the perfect example of the modern leverages that such small groups use despite the presence of over a dozen state warships. It is through the targeting of energy infrastructure that such highly adaptable, minimally equipped groups are able to carry out small to medium-sized attacks that inflict varying degrees of disruption.

Furthermore, major oil-producing regions, such as West Africa/Gulf of Guinea and the Middle East, see a broad range of attacks - varying from the sabotaging of an oil pipeline (commonly for criminal purposes), bombings of oil refineries (commonly for political purposes), or kidnapping an energy sector employee for ransom (can be both criminally and politically motivated). This illustrates the duality expressed within this modern day phenomenon. Highly adaptable groups are able to gain access to the global economy through illicit means that in turn fuel their violent, political agendas.

Second, due to a more sensitive energy system that relies predominantly on oil and gas, and global media channels, locally carried out EI attacks, aimed at the ONG sector, can have far-reaching consequences and thus produce better returns for groups. In this era, micro-actors have the tools and access to easily launch attacks that have macro-consequences.

As John Robb notes, EI attacks oftentimes require little investment compared to the enormous profits. He points to the example where "One small attack on an oil pipeline in southeast Iraq, conducted for an estimated $2,000, cost the Iraqi government more than $500 million in lost oil revenues. That is a return on investment of 25,000,000%." In addition, not only do groups receive broad media coverage, and thus local fame, for their campaigns, but they also call attention to weaknesses within states and their ability to protect such key economic assets.

Third, protecting energy infrastructure will continue to gain more significance for import-dependent states that rely on onshore and offshore transit routes to meet their energy needs. Placing EI attacks within the modern energy security environment reveals a complex picture that is dominated by the following factors:

1. Tighter energy markets and just-in-time supply chains
2. Geological challenges in obtaining oil and gas resources (thus requiring more investment in discovery and exploration)
3. Geopolitical challenges where oil and gas resources are concentrated in unstable regions
4. An intensification of the states' role in controlling energy resources (i.e. nationalization)
5. Increased global demand for non-renewable fossil fuels
6. The emergence of the non-state actors and community activism that can destabilize all of the above.

It is apparent that a key component of energy security in the 21st century will be the protection of global energy infrastructure.

1.2 Counter-Measures Needed

This phenomenon raises many questions and calls for more research on the consequences of attacks and the factors influencing the behavior of groups operating in a region where EI is accessible.

Understanding the rationale that goes into a group's targeting behavior will help states better tailor responses and allocate resources.

Given the modern energy security characteristics and the reality that most ONG resources will increasingly come from or transit through volatile areas, states must also advocate and support a global dialogue on protecting energy infrastructure. Efforts for energy import-dependent countries to truly diversify their energy portfolio will not be realized for some time. More proactive measures must be taken in the interim to encourage partnerships and develop a common framework for EI protection. Engagement with all stakeholders throughout the energy supply chain is equally important.

On a case-by-case level this approach has shown some promise. In Colombia, the US government worked with the Colombian government to create an EI security plan that involved providing funding and additional support through the training of local military in pipeline security operations. Through this partnership, and gains made by the Colombian government to dismantle FARC, attacks have dramatically decreased but still occur sporadically. Such an approach should be debated and expanded on a broader platform.

By Jennifer Giroux
Jennifer Giroux is a researcher at the Crisis and Risk Network (CRN) in Zurich.

1.3 Resources

1.3.1 Intergovernmental Organizations

Oil Supply Security, by the International Energy Agency (IEA)
This report outlines the IEA's efforts to ensure effective emergency response measures in the case of supply shocks, particularly natural disasters. The report examines the emergency response systems of IEA member states.

NATO's Role in Energy Security, by the North Atlantic Treaty Organization (NATO)
This document outlines NATO priorities in the field of energy security and identifies ways in which NATO acts to protect energy supply routes.

1.3.2 Research and Academia

Targeting Energy Infrastructure: Examining the Terrorist Threat in North Africa and its Broader Implications, by the Elcano Royal Institute
This paper analyzes the terrorist threats to energy infrastructures in North Africa; with a specific focus on events in the Sudan and Algeria, where oil and gas resources have been targeted.

The Vulnerability of Energy Infrastructure to Environmental Change, by Chatham House
This paper addresses the issue of environment-related disruptions to energy infrastructure. It argues that it is no longer sufficient only to assess our impact on the environment; we must also assess the

impact of a changing environment on us. The author recommends that new and existing infrastructure be designed or retrofitted for changing environmental conditions.

Transit Troubles: Pipelines as a Source of Conflict, by Chatham House
This report analyzes the conflictual role oil and gas pipelines play in geopolitics and economics. It notes that any reading of the history of transit oil and gas pipelines suggests a tendency to produce conflict and disagreement, often resulting in the cessation of throughput. It argues that the nature of 'transit terms' - tariffs and off-take terms - whereby transit countries are rewarded for allowing transit, play an crucial role.

Risk Analysis: Focal Report 1, by the Crisis and Risk Network (CRN)
This report identifies three trends in critical infrastructure protection (CIP) based on the review of governmental protection policies and science monitoring. It further focuses on attacks on energy infrastructure, a topic that has gained increased attention in the last couple of years.

Latin America's Energy Infrastructure and Terrorism: A Tentative Vulnerability Assessment, by The Canadian Centre of Intelligence and Security Studies at Carlton University (CCISS)
This paper examines the threats to Latin America's Energy Infrastructure, particularly as it relates to US energy demand. The authors argue that although threats against energy infrastructures are still few, the region suffers from vulnerable infrastructures. High-voltage lines, gas and oil pipelines represent the most vulnerable part of the region's energy infrastructure.

Reevaluating the Risk of Terrorist Attacks Against Energy Infrastructure in Eurasia, by Central Asia-Caucasus Institute
This chapter discusses the risk of terrorist attacks against oil terminals, refineries and pipelines in Eurasian states. The author illustrates that the situation of the high global demand in oil increases the risks of terrorist attacks on Eurasia's energy infrastructure. Even though it is worth thinking about worst case scenarios, he concludes that real risk assessment should focus on more probable small-scale attacks on highly vulnerable targets

1.3.3 Media

Protecting America's Energy Infrastructure
This article by Matt Egan outlines the main challenges that the US faces in protecting its energy infrastructure, particularly its nuclear power plants and the electrical grid. It outlines the current administration's efforts to create a 'smart grid' that is not only resilient, but also more energy efficient. Regulatory hurdles, the author argues, still hamper efforts to strengthen the energy infrastructure against terrorist attacks.

Safeguarding Security in Turbulent Times, by the International Relations and Security Network (ISN)
From hard-to-human security and much in between, this expanded ISN Special Report offers a sampling of the topics set for discussion at the 8th International Security Forum taking place in Geneva, 18-20 May.