The territorial disputes in the South China Sea are increasing tension between China and the smaller countries of Southeast Asia. These disputes over the ownership and control of the region’s waters and islands involve seven countries – Brunei, Indonesia, Malaysia, the Philippines, Taiwan, Vietnam and China (which claims almost 80% of the South China Sea). Many of these disputes have been driven by a desire to gain access to the sea’s potential hydrocarbon resources. Some believe that these resources will solve the region’s energy needs.

The drive to achieve energy security has prompted countries in the region to pursue offshore hydrocarbon exploration and production activities. While the majority of these activities have been limited to shallow, uncontested regional waters, claimant states are now beginning to pursue offshore activities in the deeper, disputed waters of the sea. These developments have been seen as a means of buttressing maritime territorial claims while simultaneously enhancing energy resources. However, given China’s growing offshore technological capabilities, assertiveness with respect to its claims in the South China Sea, and uncertainty over the existence of commercially viable hydrocarbon reserves, smaller claimant states may have few options in achieving sovereignty over disputed areas through offshore exploration activities.

The rapid industrialization of China and Southeast Asia has led to a surge in energy demand. This demand is projected to increase by 76% in the members of the Association of South East Asian Nations (ASEAN) between 2007 and 2030, and by at least 75% in the case of China between 2008 and 2035. To manage this increase, countries have begun to explore new energy sources in the South China Sea, an enclosed sea widely regarded as a significant repository of hydrocarbon resources. According to a 2012 US Energy Information Administration report, the South China Sea is believed to contain approximately 11 billion barrels (bbl) of oil, and 190 trillion cubic feet (tcf) of natural gas in recoverable reserves.

However, these findings are restricted to offshore surveys that have focused on exploration in waters less than 200

### Table 1. Projected Rise in World Energy Demand by Region

<table>
<thead>
<tr>
<th>Year</th>
<th>Rest of non-OECD</th>
<th>Middle East</th>
<th>India</th>
<th>China</th>
<th>OECD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1975</td>
<td>6030 Mtoe</td>
<td>12390 Mtoe</td>
<td>16730 Mtoe</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Global energy demand increases by over one-third in the period to 2035, underpinned by the rising living standards in China, India and the Middle East.

meters deep (roughly one million square kilometres of the ocean floor), rather than contested waters deeper than 200 meters (roughly two million square kilometres of the seabed) that have not been explored extensively due to territorial disputes.4 As a result, resource estimates are highly variable and rely on speculative geology-based methodologies that have not been proven scientifically. A 2010 US Geological Survey report, for example, estimated that the South China Sea contained anywhere between 5 and 22 bbl of oil and between 70 and 290 tcf of natural gas in under-explored areas.5 In contrast, the Chinese National Offshore Oil Corporation (CNOOC) estimated that the region held around 125 bbl of oil and 500 tcf of natural gas.6 This data spread has led to speculation that China has purposely exaggerated the statistics to justify its exploration activities in the South China Sea. It has also led to a great deal of uncertainty over how technologically and economically feasible hydrocarbon exploration and exploitation will be for smaller claimant countries.

The movement of offshore hydrocarbon operations into deeper disputed waters can be an extremely costly venture that could potentially undermine the business case for such activities by small countries. Many deep-sea hydrocarbon reservoirs are located thousands of metres below the surface, under kilometres of rock, thick salt and sand deposits. Deep-water exploratory drilling activities, therefore, require advanced equipment and technology capable of withstanding unbelievable depths, enormous pressures and extreme temperatures, in areas that experience regular typhoons and tropical storms. Moreover, if a hydrocarbon reservoir is discovered, producers have to construct very costly production platforms and sub-sea pipelines that have to bypass complex arrays of submarine canyons and strong currents to reach onshore processing facilities.

Given that the majority of small claimant countries typically do not possess these advanced capabilities, they would have to lease deep-water oil rigs from foreign firms. This equipment can be extraordinary expensive, with day rates costing two to 10 times more than shallow-water offshore equipment, depending upon rig availability and market and supply forces, which could potentially delay exploration operations.7 While smaller claimant countries could, conceivably, develop drilling technologies unilaterally to avoid being subject to market conditions, the uncertainty surrounding the extent and accessibility of commercially viable hydrocarbon resources in the South China Sea makes such investment remarkably risky.

Despite this uncertainty, however, China has begun to expand its offshore technological capabilities to claim territory and advance its energy interests in contested areas of the South China Sea using its state energy giant, CNOOC. In December 2012, the Canadian government approved a USD $15.1 billion takeover bid for the Calgary-based energy giant, Nexen Inc. by CNOOC. Many argued that the deal would give China instant access to Nexen’s technological expertise, such as fracking and drilling techniques used in offshore operations in the Gulf of Mexico – although the US government has yet to approve the CNOOC acquisition of Nexen’s Gulf of Mexico assets. It is likely that China will continue to pursue similar foreign acquisitions in an effort to broaden its strategic position in the South China Sea.

China has also begun to develop its technological capabilities unilaterally. In May 2012, CNOOC officially launched its first domestically developed deep-water semi-submersible drilling rig, CNOOC Hai Yang Shi You 981, off the southeastern shores of Hong Kong.8 The oil rig, which CNOOC Chairman Wang Yilin described as “national territory and a strategic weapon for promoting the development of China’s oil industry,”9 marked a substantial step in deep-water oil and gas exploration efforts, enabling China to drill in waters up to 3,000 metres deep.
deep. This development will not only enable China to expand its technological reach, it will also strengthen its ability to compete more effectively with smaller claimant countries that lack offshore capabilities.

To overcome the challenge of developing costly offshore capabilities while simultaneously gaining a strategic foothold in the region, smaller claimant countries have pursued joint ventures with foreign oil companies. Vietnam’s state-owned oil company PetroVietnam, for example, has signed various offshore hydrocarbon exploration agreements with Italy’s Eni S.p.A., India’s Oil and Natural Gas Corp. (ONGC) Videsh, and the US-based Exxon Mobil. These joint ventures may provide smaller claimant countries with both increased offshore capabilities and political backing for regional territorial claims, but it will be difficult to convince foreign countries and companies to cooperate if hydrocarbon resources are limited. India’s ONGC Videsh, for instance, is still conducting joint exploration activities with Vietnam in the South China Sea but it has abandoned a block due to logistic challenges involved in anchoring an oil rig to the sea floor.

Smaller countries could also pursue joint ventures with China. Forum Energy, a subsidiary of Philippines-based Philex Petroleum, for example, is considering partnering with CNOOC to explore disputed regions off Reed Bank. While the Chinese have attempted to publicize these negotiations as joint, cooperative activities, the partnership will likely remain in the nascent stages for the short term as a result of heightened diplomatic tensions between Manila and Beijing over competing maritime territorial claims. Partnering with China may appear to be a cost-effective solution for smaller regional countries, but it comes with political costs – Beijing may use this joint development in disputed areas as evidence that other countries recognize its territorial claims. Political tensions, therefore, will substantially limit, or even derail, joint energy development between China and smaller countries in the waters of the South China Sea. This delay will hinder the ability of smaller claimant countries to conduct exploration activities and, as time goes by, China will develop its offshore capabilities in order to undergird its maritime territorial claims.

The South China Sea’s offshore hydrocarbon resources may not be commercially viable or significant enough to meet the energy demands of China and Southeast Asia. All the claimant countries, however, will continue to conduct offshore activities whether by expanding technological capabilities or pursuing joint ventures with foreign companies to substantiate their maritime territorial resources. With its rapidly expanding offshore technological capabilities, China will have the upper hand when it comes to using offshore exploration activities as a way of achieving sovereignty over disputed waters of the South China Sea.

Notes
5. EIA, “South China Sea.”
6. Ibid.
8. Daniel Ten Kate, “CNOOC Deploys Oil Rig as Weapon to Assert China Sea Claims,” Bloomberg, 10 May 2012.