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THE NEW DIMENSIONS OF
GEOPOLITICS
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1. INTRODUCTION

Although in any energy issue geopolitics is never far away, the unrest sweeping North Africa, Syria and Iraq, the deepening of the conflict in Ukraine in 2014 and the growing tensions between the EU and US and Russia have raised security of supply and demand to the top of the international strategic agenda. As a result, greater emphasis is being placed on diversifying energy trade patterns and developing (renewable) domestic sources. The new contract signed between China and Russia allows for the former to diversify its gas supply and for the latter to reduce its dependence on Europe. At the same time, pipeline supplies, particularly those transiting through third countries, are increasingly seen as a security risk, which has stimulated the expansion of LNG options.

The rise of security of supply and demand on the energy policy agendas of many countries is on top of the growing environmental concerns and the functioning of (domestic) energy markets appears less prominent in this context. In an increasingly interconnected world, various stakeholders, from local and international environmental groups (NGOs), to proponents of certain other energy technologies, labour organisations, multilateral institutions, academics and world media, increasingly influence policy-making at the national, supra-national and international level. Most stakeholders are active in influencing the environmental agenda, but where import-dependency or trade with specific countries is targeted for policy change, strategic interests have an increasing role. Groups often combine a variety of arguments for the climate change and security agenda in their positioning for policy change. The interplay of all these influential stakeholders adds new dimensions to the geopolitics of energy in general and natural gas in particular.

In the 2012 report on *Geopolitics and Natural Gas* (TF3-IGU, presented at the 2012 World Gas Conference), geo-economic and geopolitical developments and their impact on the international gas industry were discussed at length from the perspective of geopolitical power. Large geopolitical and geo-economic powers, such as the US, China, Russia and, to a lesser extent, the EU, were the point of departure for analysing the changing political and economic world order. The report additionally covered the large international economic changes taking place and their impact on the natural gas industry, as well as the influence of the shale gas revolution on international economic and political relations.

In this new report, we will briefly revisit the geopolitical scene, highlighting the geopolitical developments since the last TF3-IGU report and discussing the main areas of current geopolitical importance. Offshore border disputes, which have been identified as a common theme for a number of these areas, are further discussed in a separate theme paper on *International Law and the Use of Maritime Hydrocarbon Resources*¹. The remedies in public law are explored for such maritime resources disputes, in addition to bilateral solutions, such as joint development, when international law cannot provide a solution between the contesting parties.

¹ By Rene Lefeber of the University of Amsterdam.

As a complement to this traditional approach to the geopolitics of gas, the report then continues to discuss the growing role and influence of stakeholders in the manner in which energy policies develop, adding “new dimensions” to politics and policy-making. In this context, two separate theme papers were developed to illustrate how the engagement of stakeholders can have a strong impact on the gas business. One theme paper is titled ‘*Is Natural Gas Green Enough for the Environmental and Energy Policies?*’ and looks at the perception of gas by policymakers, while the second one investigates ‘*Local content strategies in the oil and gas sector*’ and shows how the gas industry has to meet rising expectations in terms of its contribution to economic development. After identifying the key areas of the gas business in which stakeholders are the most active and have the greatest influence, this report concludes with recommendations on how the gas industry can best integrate these “new dimensions” of geopolitics.

2. GEOPOLITICAL DEVELOPMENTS

CHANGING RELATIONS

In the aftermath of the international financial crisis of 2007/2008, the world order is still in flux. Countries with growing economic power, such as China, India, Brazil and Russia, are undoubtedly playing an important role on the geopolitical stage but are now also increasingly confronted by internal issues. Based on particular economic strengths, these challenger countries had weathered the economic storms of 2007/2008, but are all, for various reasons, now struggling to maintain economic growth. Without sufficient economic growth, it is difficult to uphold the narrative of improving welfare, while some countries are also facing looming political and social unrest. The organised reform of the world economic governance system, as announced in the G-20 meetings immediately after the financial and economic crisis in 2008 and 2009, has been replaced by a much more disorganised and fractured reform of the world order. The economic recovery of the US, due in part to its advent as major oil and gas producer, and the reduction of growth in China and other emerging economies, have silenced the commentaries on the impending end of US hegemony. At the same time, the US is reluctant to be the world’s only policeman and is enlisting regional allies to act on the various security risks. But it is also challenging other powers, such as China and Russia, in the China Seas, the Indian Ocean and in the Arctic.

In 2014, Russia and members of NATO came to loggerheads over the crisis in Ukraine and Crimea. The political instability in Ukraine led to a battle over political and economic spheres of influence between Russia and the EU and the US. The Russian annexation of Crimea was not recognised by the Western alliance, and economic sanctions ensued. The continued unrest in the eastern part of Ukraine further increased tensions, with the downing of MH17 as sad collateral damage. The Arab Spring of 2011 has reverberated through North Africa and the Middle East, impacting many oil and gas producing countries. In Egypt, three leadership changes have transformed the outlook of the country as a gas exporter. In Libya, a civil war has broken out between competing groups after a fierce battle to remove the Khadafy regime. In Algeria, terrorists from Libya and northern Mali perpetrated an attack on a gas field in the south of the country. A multinational military operation was deployed in Mali when Islamic groups overran the country. In Nigeria, another important energy exporter, Boko Haram is creating major unrest and security issues. The uprising in Syria has become

unmanageable, with many people dead and others on the run. The security situation in neighbouring countries, flooded with refugees, is becoming increasingly serious. The rising human trafficking across the Mediterranean is creating human tragedy and political tensions. Incidents in Canada, Australia, France and Denmark show the complex inter-linkages between the problems in the Middle East and sympathisers of the various terrorist groups active in countries spanning from Yemen to the Horn of Africa, Libya and sub-Saharan Africa.

After five years of relative stability, and amid the above-mentioned geopolitical developments, global oil prices suddenly decreased by 60% between June 2014 and mid-January 2015 before rebounding slightly. A similar trend is now observable for natural gas prices because of the possibilities for substitution between fossil fuels and because long-term contracts, particularly for LNG, are typically indexed on oil values. These sudden price changes have far-reaching consequences for the global economy, stimulating competitiveness and purchasing power in consuming countries, but also creating severe problems for oil and gas exporting countries. The response of tight oil and shale gas investments on available volumes is still unclear, as cost of capital, balance sheets and improvements in technology and efficiency also play a role. At the same time, investments in other high-cost projects are being delayed and/or scaled back, awaiting price recovery. Producing countries with insufficiently diversified economies and a large dependency on export income are the most at risk of economic shocks and therefore most sensitive to related social and political instability.

In the 2012 report on *Geopolitics and Natural Gas* (TF3-IGU, presented at the 2012 WGC) many geo-economic and geopolitical developments and their impact on the international gas industry were discussed at length. An additional focus area of the report was the effect of the international gas industry developments on international relations, such as the breakthrough of shale gas (and tight oil) in the US. The influence of these latter developments continued after 2012, as evidenced by the steep fall in oil prices in 2014. The instability of the world order and emergence of certain (related) internal or regional conflicts makes sense in the logic of hindsight.

Building on this previous work, the 2015 report assesses the latest developments in the so-called “geographic areas of special geopolitical interest”. Regions with both active conflicts and potential conflicts are highlighted in this report because they can, in the short and longer term, influence the role of gas in the various energy mixes. Traded energy, including gas, has become a more prominent part of the stakeholder discussions in various parts of the world. Some of these (looming) conflicts were described in the 2012 report and will be complemented here, while others have been added for this triennium report.

THE ARCTIC

Arctic states are showing greater interest in the region’s hydrocarbon potential. Overlapping territorial claims and military build-ups may generate tensions. However, the key confrontation appears to be the one between project developers and the stakeholders who oppose drilling on environmental grounds. This creates reputation issues and could become a serious obstacle to gas development.

The Arctic is the northernmost region on Earth and consists of an ocean with seasonal ice coverage, moving ice packs and permafrost. This region is not uniform in terms of ice coverage and there are

diverging definitions of its borders. The utmost northern part is viewed under international law as part of the high seas, i.e., international waters, thus open to all.² Further south, the Arctic borders the 'Arctic five', namely Russia, the United States, Canada, Norway and Denmark (Greenland). Sweden, Iceland and Finland also have territories in the Arctic, and all together, these countries make up the Arctic Council.

As a consequence of melting polar ice caps, the region's vast amounts of hydrocarbons are becoming more accessible, stimulating the race for one of the Earth's last energy frontiers. Estimates report that the Arctic could contain 13% of the world's oil supplies, and up to 30% of global gas reserves.³ The vast majority of these hydrocarbon reserves are located onshore and offshore in Russian national territory. Yamal is the biggest onshore field, and the only two offshore fields currently in operation are Snøhvit and Prirazlomne.

Due to the great resource exploitation potential of the region, some Arctic states have made territorial claims that overlap with the borders of other Arctic players. Russia has claimed that the Lomonosov Ridge is an extension of its continental shelf and has provided supporting materials of its claim to the Commission on the Limits of the Continental Shelf. Both Denmark and Canada protest this claim. Moreover, they also both claim ownership of Hans Island, a tiny island in the Nares Strait. Finally, the United States and Canada are in dispute over a small area in overlapping borders in the Beaufort Sea, home to significant hydrocarbon reserves. These claims can be made within the UN Convention on the Law of the Sea (UNCLOS) framework, after which the Commission on the Limits of the Continental Shelf will make a decision. The US is the only Arctic state that has not ratified UNCLOS and can therefore make no official claims.

Another consequence of melting ice caps is the opening up of new sea routes. First, there is the Northwest Passage, a sea route that runs along the northern coast of Canada, connecting Atlantic and Pacific trade routes. It is the subject of a dispute between Canada, which views it as its internal waters, and the United States, which argues that it is an international transit route and thus demands free and unhindered usage. Second, melting ice has partially opened up the Northern Sea Route, running alongside the coast of Arctic Russia. Only a limited number of ships have made the full journey through this passage so far. However, a further opening of this route would reduce significant travel time for trade between Asia-Pacific and the Atlantic, primarily for Europe, as compared to the Suez Canal route.

In addition to the benefits that stem from economic activity in the Arctic, there are important environmental concerns. The Arctic is the natural habitat of certain species, which are threatened by increased human activity. Moreover, rising Arctic temperatures and the melting ice cap influence the weather conditions in regions elsewhere in the world. Thus, there is a justifiable concern among stakeholders that drilling/mining in a sensitive environment like the Arctic is a risky endeavour, although companies make efforts to prevent a negative impact. These concerns can acquire political dimensions through actions by environmental organisations to hinder resource development. In 2011, the Arctic NGO Forum was created to facilitate dialogue between the numerous NGOs working

² Malcolm N. Shaw. 2008. "International Law: Sixth Edition". United Kingdom: Cambridge University Press, page 535.

³ USGS. 2008. "Estimates of Undiscovered Oil and Gas North of the Arctic Circle". Available at http://www.usgs.gov/newsroom/article.asp?ID=1980#_VHWvH1J0yM8.

for the protection of the environment in the Arctic region. To draw maximum attention on these issues, in 2012 Greenpeace launched the “Save the Arctic” campaign, and the subsequent arrest of Greenpeace activists after their attempt to board the Russian oilrig in the Barents Sea led to political tensions between Russia and several European states.

The Arctic has historically been characterized by low tensions and the willingness of finding negotiated solutions. Even though there is little evidence that suggests an outbreak of large-scale conflict for control over the region’s hydrocarbon reserves, there is nonetheless the potential that such a stage could develop in future between the Arctic states. For example, Russia recommenced building up its Arctic military presence, thereby provoking NATO to respond by bolstering its Arctic strategy. Non-Arctic states, like China, are also showing greater interest in the activities in the Arctic, and have taken the observer role in the Arctic Council, the main body of collaboration. At the same time, the complexity, high costs and environmental hazards associated with oil and gas exploration and production in the region have stimulated cooperation among Arctic states. The high costs of Arctic exploration also come into play within the current environment of low oil prices. Exploration efforts face delays and cancelations, as the low oil price poses a significant risk, deeming projects financially infeasible.

EASTERN MEDITERRANEAN

Gas developments in the Eastern Mediterranean are complicated by territorial disputes and by a volatile security environment, providing an illustrative example of how geopolitics can negatively influence the opportunities of a region despite its having substantial potential to become a large gas exporter. Nonetheless, the gas finds could offer a means to improve energy access and cement cooperation between countries.

The Eastern Mediterranean entered the scene of global gas markets in 2009 as a region with large upstream potential, with substantial reserves (1.2 Tcm⁴) being found in Israeli and Cypriot waters. A number of geopolitical variables influenced the decision-making process on monetisation that has been ongoing since then.

The first geopolitical element that negatively influences gas developments in the Eastern Mediterranean are unresolved territorial disputes (between Lebanon and Israel; between Israel, Egypt and the Palestinian Authority on Gaza’s maritime boundary; and finally between the Republic of Cyprus and Turkey on the status of northern Cyprus). This ambiguity in the legal status of territorial waters discourages investment. The consequences of territorial disputes go beyond uncertainties on sovereignty over gas-rich areas, as they complicate the broader political relationships between countries in the region. For instance, Turkey retaliated against European oil and gas companies for having invested in Cyprus.

Territorial disputes are only one aspect of the highly complicated political relationships in the region, which contribute to instability and conflict. Full-scale wars and lesser forms of violent events between state and non-state actors alike – such as the wars in Gaza and Syria, the volatile situation in Sinai and persisting tensions in the Palestinian Territories – may delay or block the extraction and

⁴ Proven reserves.

transportation of gas. Even without actual disruptions, security considerations seem to heavily influence choices by regional players. This is especially visible in Israel, where reflections have been made on security threats to installations – leading to a preference for floating LNG – and on how gas may change the country’s leverage in relation to its neighbours.

Against this background, it is not surprising that countries in the region are particularly sensitive about their own energy self-sufficiency. Political considerations of energy independence certainly played a role in Israel’s Tzemach Committee’s decision to keep 60% of gas output for the domestic economy. This decision reflects a broader trend ongoing in the region. When Eastern Mediterranean fields were discovered, the attention was mainly on global LNG export prospects, whereas today the focus is on regional projects. As global LNG markets are less politicised, this shift may lead to a higher politicisation of gas-related activities in the region.

However, it is also possible to claim that gas has the potential to contribute positively to peace and development in the region. Access to energy remains problematic in the region, and gas could help to improve the situation. As this would be a very tangible means of swaying public opinion, there is much political interest surrounding gas on the part of regional governments. Finally, there is hope that gas trade will create bonds of interdependence in the region and encourage countries to find common ground on which to cooperate. Several projects draw their political legitimacy from this tenet, including plans to develop for gas trade between Israel and Egypt, Jordan and the Palestinian Authority.

SOUTH CHINA SEA

Developments in the South China Sea show that ambitions to control oil and gas can contribute to escalating tensions between countries. In turn, these events also show how oil and gas can become entrenched in (regional) geopolitics, notably overlapping territorial claims and maritime transit issues.

The South China Sea is a semi-enclosed sea bordered in the west by Vietnam, on the east by the Philippines, Malaysia, and Brunei Darussalam, in the south by Indonesia and Malaysia, and in the north by China and Taiwan. Its geostrategic location, the territorial disputes over the Paracel and Spratly archipelagos and other maritime areas, the importance of shipping routes, and the competition for control over natural resources in the area, have contributed to its status as a major source of tension and instability in the region. This was reflected in recent years by multiple incidents between coastal states.

First, the South China Sea is located on a major international shipping route between the Indian Ocean and Northeast Asia. Over half of the world’s merchant fleet (by tonnage) sails through the straits of Malacca, Sunda and Lombok every year.⁵ A third of global crude oil and over half of global LNG trade pass through the South China Sea.⁶ An (armed) conflict that would disrupt freedom of navigation for merchant shipping or naval vessels would adversely affect the economic interests of countries in the Asia-Pacific region, including the US.

⁵ The United Nations Conference on Trade and Development (UNCTAD) Review of Maritime Transport 2011.

⁶ EIA estimates, <http://www.eia.gov/countries/regions-topics.cfm?fips=scs>.

Second, economic growth in the region depends to a large extent on the exploitation of both living (e.g. fish) and non-living or hydrocarbon resources from this sea. The sovereignty disputes over islands in the Paracel and Spratly archipelagos, many of which are partially submerged land masses unsuitable for habitation, are intended to control the maritime zones around them. Apart from the disputes directly linked to the sovereignty claims over the island groups, disputes relating to maritime delimitation remain unsettled.

Third, Asia's robust economic growth has boosted demand for energy in the region. With Southeast Asian domestic oil production projected to stay flat or decline as consumption rises, the region's countries will look to new sources of energy to meet domestic demand. The South China Sea is a potential source of more hydrocarbon production, particularly natural gas. The EIA estimates that the South China Sea contains 11 billion barrels of oil and 190 Tcf of natural gas reserves in proven and probable reserves.⁷ The South China Sea may have additional hydrocarbons in underexplored areas.⁸

While international law offers remedies for maritime disputes, most coastal states in the region have excluded jurisdiction on issues of sovereignty for international courts and tribunals. In addition, when taking into account the nationalist political forces that are active in several of the countries concerned, no compromise on the issues of maritime boundaries and sovereignty over the archipelagos is to be expected anytime soon.

EU-RUSSIAN ENERGY RELATIONS

Complex political relationships, particularly developments around the Ukraine, influence Europe's appetite for Russian gas supplies and Russia's willingness to rely on Europe as a source of government revenues. After a rapid expansion in the 1990s, gas trade between the EU and Russia has been further complicated by the emergence of different economic visions and rules of market reform.

The energy relations between the EU and Russia date back to the energy trade between the Soviet Union and the countries in Eastern Europe within Comecon. The energy relations with Western Europe are younger, but still date back to the 1960s, when crude oil shipments were exported to countries in Western Europe. In the 1970s, as part of the development of the giant gas fields in Siberia, both Western and Eastern Europe entered into long-term supply and purchase contracts and were connected to the Unified Gas System (UGS) of the Soviet Union, further broadening the energy relations. Currently, the EU imports about 30% of its gas needs from Russia. The growing tensions between Russia and the EU have given rise to political concerns about the high dependence of the EU on Russian gas, with diversification of supply and reverse flow options now high on the EU agenda. Equally, diversification of exports has become more important for Russia. The agreement with China to deliver gas to the Chinese market and the subsequent construction of pipelines, connecting various regions in Russia and its new markets, underpin the country's strategy.

⁷ Idem.

⁸ USGS World Petroleum Resources Assessment Project, 2010. SCS estimates that the South China Sea may contain anywhere between 5 and 22 billion barrels of oil and between 70 and 290 trillion cubic feet of gas in as-yet undiscovered resources.

EU-Russian relations have been characterised by diverging developments in the regulatory framework of the energy sector. While the EU began to push for energy market liberalisation, Russia was centralising. Both developments were understandably based on an internal logic but did create regulatory asymmetries that defined the relations in the 2000s.⁹

Under the long-term supply contracts with EU companies, Gazprom is responsible for shipping the gas to the national borders. Ownership of two important export pipelines, through Ukraine and Belarus, and the growth of pipeline deliveries to the European markets, implied that Russia and the EU had increased stakes in stable relations with these transit countries. The system crossing Ukraine is part of the legacy pipeline network that had previously serviced the Soviet Union and Comecon countries, and delivers gas to Western European markets. Since 1991, the Yamal-Europe and Nord Stream pipelines have diversified the supply routes to Europe. South Stream was to be the third, non-Ukrainian transit route, creating ample transit capacity and reducing dependency on the troubled Ukrainian route to reach markets in Southeast Europe, the Balkans and Italy.

The crisis in Ukraine is not about energy, but energy has been dragged into the conflict because Ukraine is an important transit country in gas trade between Russia and the EU. Until 2013, 50% of European imports from Russia transited through Ukraine, equal to 15% of total European imports. Political instability in Ukraine has affected EU-Russian gas relations since 2004.

The conflict in Ukraine has an internal origin, but has a large impact on its neighbours. It is mainly about the legitimacy of Ukrainian political and economic institutions and their ability to keep the nation together. Ukrainian elites have abused these institutions, preventing the new nation from developing after its independence in 1991. Both the EU and Russia attempted to draw the country into their sphere of influence through various economic collaboration agreements and have exacerbated the internal antagonisms. The importance of the Crimea to the Russian navy, the overtures of the US to expand NATO beyond the Baltic States into the former Soviet Union and the EU's attempt to expand the energy *acquis* into Ukraine and other former Soviet Union states have increased geopolitical tensions in the region. In 2014, after the government fell in February, Russia took possession of the Crimea and fighting broke out in East Ukraine.

Security of supply and demand has dominated EU-Russian gas relations with Ukraine since 2004. The construction of the Nord Stream pipeline helped reduce the transit risk and investments in reverse flows and interconnectors contributed to improve the resilience of the EU gas system during supply disruptions. However, parts of Eastern Europe, and especially Southeastern Europe, remain exposed. The initiatives with regard to the Energy Security Strategy of May and June 2014 and the Energy Union further aim to strengthen the interconnection between EU Member States, allowing gas to flow more freely within the internal market. With the South Stream pipeline, Russia wanted to create an alternative route to, and improve access to, Southeastern markets. Conflicting visions on how to regulate access to pipeline capacity between Russia and the EU have resulted in a proposal for re-routing South Stream. In December 2014, Russia proposed to land the pipeline in Turkey and to deliver gas volumes destined for the EU at a future hub on the Turkish-Greek border, thus

⁹ See "The Paradigm Change in International Natural Gas Markets and the Impact on Regulation", for WGC 2006, IGU / CIEP, April 2006.

circumventing South Stream as an issue in EU-Russian discussions over the Ukraine crisis. In connection with its decision to build a new pipeline to Turkey, Gazprom announced that it would stop pursuing its previous strategy of delivering gas directly to final customers within the EU.

IRAQI KURDISTAN

Developments in Iraqi Kurdistan show how contrasts between entities within a country can complicate prospects for gas exports. However, the threat posed by ISIS has recently favoured a rapprochement between the Iraqi central government and the KRG. This renewed cooperation is progressively extending to energy issues, although there is still a long way to go towards full reconciliation.

The Kurdistan Regional Government (KRG) is a sub-national entity within Iraq, encompassing three of the eighteen provinces of the Iraqi federal system. Despite the recognition of Kurdistan's special status in the Iraqi constitution of 2005, the KRG and the central government of Iraq have been unable to find a lasting agreement on the exact terms of the Kurdish semi-autonomy. The most controversial issue between Baghdad and Erbil, the capital of the KRG, relates to the control over Kurdistan's abundant hydrocarbon resources. According to the 2005 constitution, existing hydrocarbon fields fall under the control of the central government. The sales should go through Iraq's State Oil Marketing Organisation, SOMO, and Kurdistan should receive a portion of the Iraqi federal budget in exchange.¹⁰ However, the discussions on Kurdistan's exact contribution to Iraq's oil sales and the corresponding distribution of revenues have been in a deadlock. In addition, the constitution remains vague with regards to the new fields, leading to controversies over who, between Baghdad and Erbil, has the right to sign contracts with oil companies for conducting new projects in Iraqi Kurdistan.¹¹

In 2007, the parliament of the KRG passed its own hydrocarbon law, setting up an attractive framework for concluding production-sharing deals with oil and gas companies.¹² The KRG was determined to boost its oil and gas production and exports, as a way to guarantee its financial independence from the central government. From this point on, the KRG started signing contracts with oil and gas companies, upsetting Baghdad, and federal budget flows to the KRG have been progressively cut, while companies cooperating with the KRG have been threatened with being excluded from projects in other areas in Iraq. In early 2014, fiscal disputes with Baghdad brought the KRG to the brink of bankruptcy.¹³

Surprisingly, Turkey proved to be a strong ally for Iraqi Kurdistan in its strategy to export its oil and gas and bring them to the world market. The consolidation of Iraqi Kurdistan could have triggered opposition in Ankara, for fears of seeing this movement spreading over the Kurdish areas of Turkey. However, Turkey was also striving to develop and diversify its oil and gas supplies to support its growing economy. In this context, setting up an energy partnership with the relatively stable Iraqi

¹⁰ Nicholas Barroz (2014), "Turkey's Energy Strategy: Kurdistan over Iraq", Natural Gas Europe, <http://www.naturalgaseurope.com/turkey-energy-strategy-kurdistan-iraq>.

¹¹ Marina Ottaway, David Ottaway (2014), "How the Kurds Get Their Way", Foreign Affairs May/June 2014, <http://www.foreignaffairs.com/articles/141216/marina-ottaway-and-david-ottaway/how-the-kurds-got-their-way>.

¹² EIA (2013), Country Analysis Iraq.

¹³ Mushrek Abbas (2014), "Oil Deal, a Sign of Hope Between Baghdad and Erbil", Al Monitor, <http://www.al-monitor.com/pulse/originals/2014/12/iraq-kurdistan-oil-agreement-relations.html#>.

Kurdistan appeared as a valuable option. On the basis of their converging interests, Ankara and Erbil concluded formal deals on 6 November 2013, clearing the way for increased oil exports and the commissioning of a gas pipeline to Turkey in 2017. In a long-term perspective, the KRG envisages that this new gas route to Turkey could be extended, allowing Kurdish gas to reach the European Union via the new Southern Corridor.

While the KRG's export plans have long been contested by the central Iraqi government, curbing the Kurdish autonomy is now less of a priority, as the Islamic State organisation is seen as an even bigger threat to the country's stability. Fighting against a common enemy is easing tensions somewhat between Baghdad and Erbil. In the first place, the long-disputed borders of the KRG territory are becoming clearer, as they tend to correspond to the military border between the areas controlled by the Islamic State organisation and those controlled by the KRG.¹⁴ In the second place, cooperating with Erbil has become a necessity for Iraq because production from the federally-administered Kirkuk oil field can no longer be exported due to the pipeline to Mosul having been destroyed by IS forces. On 2 December 2014, KRG Prime Minister Nechirvan Barzani and Iraqi Prime Minister Haider al-Abadi signed an agreement which foresees that the KRG will send 250,000 barrels of oil per day to the central government and export 300,000 barrels of Kirkuk oil through the recently built KRG-Turkey pipeline. In return, Baghdad will give the KRG its share of the Iraqi budget, amounting to 17%, in addition to sending support for the Kurdish Peshmerga forces.¹⁵

After several years of tensions, this agreement was perceived a major step towards full reconciliation between Baghdad and Erbil. However, it turns out that the implementation is very challenging because the exact terms of the agreement are still being debated. As a consequence, budget allocations to the KRG remain incomplete. Furthermore, the new oil export revenues have not reached Erbil to date because Ankara is currently blocking their transfers in order to avoid disputes with Baghdad. After stating that this situation was a strong hurdle to the increase of oil and gas production in the region, the Prime Minister of the KRG announced in March 2015 that he was planning on signing an agreement with Teheran to enable Iranian gas imports.¹⁶ This gas would be used as a fuel for power generation and help reduce power cuts in the region. With this latest development, Iraqi Kurdistan is sending a clear message to its Iraqi and Turkish partners, namely that the KRG is not at their mercy and claims full autonomy over its energy trade relationships.

IRAN

Iran is a prime example of how a politically isolated country can fail to establish itself as a major gas producer and exporter despite having substantial resources. International sanctions, the unattractiveness of the investment framework and the growth of domestic gas consumption are major hurdles that hinder Iran in being able to swiftly implement its export projects.

Considering the size of its gas reserves, Iran could be a major supplier to the global gas market. Its proven conventional gas reserves are the second largest in the world, after Russia. They are

¹⁴ Cyril Roussel (2014), "Les Territoires Kurdes d'Irak à l'Heure du Daesh: Nouvel enjeu frontalier", Actuelles de l'IFRI.

¹⁵ "Pétrole et Gaz Arabes", 16 December 2014.

¹⁶ "Pétrostratégies", 9 March 2015.

estimated at 33.8Tcm¹⁷, but today Iran only exports limited quantities of gas (9bcm/year) to three countries (Turkey, Armenia and Azerbaijan).¹⁸

Iran actually produces little gas compared to its reserves, and it is mostly intended for domestic usage. Iran's gas production (167 bcm/year) is roughly on par with its domestic consumption (162 bcm/year), reflecting Iran's prior choice to promote the use of gas in its economy as a way to maximise oil exports. This strategy has been supported with highly subsidised gas prices, leading to the creation of a gas-based economy, but also an economy with very poor energy intensity. In fact, Iran is dependent on gas imports from Turkmenistan to fully meet its domestic needs, especially peak demand during the winter season.¹⁹ Importing gas is necessary because most consumption is in the north whereas production is mainly located in the south and the country lacks adequate transport infrastructures. The situation may change in the future because Iran has great ambitions with regard to the development of its gas reserves. The national Iranian gas company plans to increase production to 250 bcm/year in 2016 and then to 400 bcm/year in 2025.²⁰ Many export projects are also under study. Gas flows to Iraq are set to start by spring 2015, and Teheran is in close discussion with Islamabad to accelerate the completion of the gas pipeline to Pakistan.²¹ In addition to other pipeline projects to Oman, the UAE, Kuwait and also Europe via Turkey, Iran is considering the possibility of building liquefaction capacity in the coming years.

However, the road to significant export volumes is still long. The primary obstacle relates to the international sanctions. These have been applied for over twenty years and have been toughened since 2010. Sanctions have restricted the access to international finance, insurance services, technologies and know-how, having a strong impact on the Iranian oil and gas sector, particularly the development of upstream projects.²² The recent decision to resume the negotiations on the Iranian nuclear programme has of course given rise to much speculation about Iran coming back into business. In line with the joint action plan agreed in November 2013 between the five permanent members of the UN Security Council plus Germany and Iran, Teheran reframed some of its nuclear activities during the negotiations in exchange for the removal of some of the sanctions. Although this plan gave Iran easier access to insurance and transportation services, it was not enough to have a meaningful impact on oil and gas production levels.²³ The outlook seems brighter now that a "framework for a deal" was agreed upon on 2 April 2015.

If the final details of the deal are worked out by 30 June 2015, it would certainly increase the downward pressure on global oil prices and give a strong boost to gas export projects, notably at a time when Europe is reconsidering its dependency on Russian supplies. However, it will probably take many years before the removal of sanctions is fully applied, which may delay infrastructure developments. In addition, the participation of foreign companies in oil and gas projects is currently constrained by an unattractive legal and contractual framework. Although the government has been working on the introduction of a new type of petroleum contract model since 2010, with more

¹⁷ BP Statistical Review, 2014.

¹⁸ IEA (2014), "Gas Medium Term Outlook".

¹⁹ Idem 3.

²⁰ "Pétrole et Gaz Arabes", 1 August 2014.

²¹ "Petrostrategies", 28 July 2014.

²² Idem 2.

²³ Idem 2.

attractive terms for the participation of foreign companies, the reform has yet to be implemented.²⁴ Besides, Iran must contain the rise of its domestic gas demand in order to ensure that the growth of production can actually lead to more exports. This requires continuing the subsidy reforms, which have been under way since 2010.²⁵

NORTH AFRICA (ALGERIA, EGYPT AND LIBYA)

North African countries hold significant reserves, and they have developed large export facilities in order to reap value from their gas production on the global gas market. Yet this strategy has run out of steam over the last few years, as security concerns, political uncertainty and difficulty covering domestic needs have all contributed to delaying exploration and production projects.

The North African region is rich in hydrocarbons, particularly natural gas. Together, Algeria, Egypt and Libya represent 4.2% of total proven gas reserves in the world. Algeria is the most significant reserve-holder with 4.5 Tcm, followed by Egypt with 1.8 Tcm and Libya with 1.5 Tcm.²⁶ All three countries have developed gas production and exports, with Algeria being the prime exporter. Algeria started exporting gas in the form of LNG in 1964, using the world's first liquefaction plant, built in the Port of Arzew. Algeria has now three LNG facilities, two pipelines to Spain and one to Italy. Egypt started exporting gas in 2003 after the completion of the Arab Gas Pipeline to Jordan and has built two LNG facilities since then. Libya built its only LNG facility in 1970, and the Greenstream pipeline connection to Italy was commissioned in 2004.

Despite their large export capacities, Algeria, Egypt and Libya have recently been losing market share in global gas trade. Algeria's gas production has been declining over the past seven years, leading to a decrease of its pipeline and LNG exports.²⁷ Egyptian production also fell throughout 2013, and gas volumes originally planned for exports were redirected to the gas-thirsty domestic market, leading to an almost complete halt of LNG and pipeline exports in 2013.²⁸ Finally, the civil war of 2011 temporarily stopped all Libyan gas exports. Pipeline exports to Italy were resumed in the autumn of 2011, although not returning to their 2010 levels. There are still no LNG exports from Libya, as the liquefaction plant was damaged during the war.²⁹

The key challenge for the North African region is to attract foreign investors and thereby accelerate the development of new upstream projects in order to offset the decline of mature fields. The return of foreign investments is contingent mainly on greater political stability and a more secure environment. While Algeria has not undergone a regime change and unrest as Egypt and Libya did, the attack on the Amenas gas processing plant in early 2013 did reveal security risks, especially in remote areas in the south. Algeria wants to double its gas production over the next decade.³⁰ The hydrocarbon law was revised in 2013, and new tax incentives were introduced to attract foreign companies.³¹ Despite these efforts, the results of the licensing round organised in 2014 have been

²⁴ Idem 2.

²⁵ Idem 3.

²⁶ BP Statistical Review, 2014.

²⁷ IEA, "Medium Term Gas Outlook".

²⁸ Idem 2.

²⁹ EIA (2014), "Libya Country Analysis Brief".

³⁰ Idem 2.

³¹ EIA (2014), "Algeria Country Analysis Brief".

disappointing; only four of the 31 blocks on offer have been allocated.³² This lack of interest for new upstream projects is also related to concerns that production will be primarily sold on the domestic market at very low prices. Domestic gas demand is rising in North Africa, although it has not yet returned to pre-2011 levels in Libya.³³ In Egypt, gas consumption tripled over the period 2000-2012.³⁴ Because higher volumes have been directed to the domestic market at subsidised prices, the Egyptian General Petroleum Corporation found itself unable to pay its foreign partners. After two reimbursements of \$1.5bn each in November 2013 and 2014, the outstanding debt is now \$4.9bn and the Egyptian government has committed to reducing it further over the coming months.³⁵ Despite a 30% decrease of exports between 2010 and 2013³⁶ and a subsidy reform underway, Egypt's production is still not high enough to satisfy domestic demand, and the country experiences frequent gas shortages. On 3 November 2014, EGAS signed a contract with Höegh LNG Holdings Ltd for the use of a Floating Storage Regasification Unit in order to import LNG as of March 2015 for the next five years.³⁷

The challenges are high, and it may take time before North Africa can actually intensify its production and exports. However, the region has significant potential considering its proven and also possible unconventional reserves. Algeria's unconventional reserves are estimated to be the third largest in the world.³⁸ Acknowledging this large resource base and the geographical proximity, the European Union is paying particular attention to North Africa in its supply diversification strategy. In May 2014, the European Commission called for the creation of a '*political and trade dialogue with North African and Eastern Mediterranean partners, in particular with a view to creating a Mediterranean gas hub in the South of Europe*'.³⁹ Such reinforcement of the cooperation between the different sides of the Mediterranean Sea could contribute to restoring a faster pace to North Africa's production.

NIGERIA

Despite large hydrocarbon resources and opportunities, Nigeria's petroleum sector is engulfed by regulatory uncertainty, instability caused by Boko Haram's ongoing insurgency, and falling oil prices further threaten production and development. All of these barriers put the nation's oil and gas prospective at risk.

Africa's leading economy and largest oil producer, Nigeria, currently holds proven reserves of 37 billion barrels of crude oil.⁴⁰ The country's oil and gas sector accounts for 35% of its GDP, with 90% of total export revenue coming from petroleum exports.⁴¹ In recent years, risks for the Nigerian hydrocarbons sector have only amplified due to political instability, declining oil exports as a result of theft, supply disruptions, lack of investment in exploration, and most recently the global oil price decline. Adding to the crisis are the intensifying clashes with Boko Haram insurgents.

³² "Pétrole et Gaz Arabes", 1 October 2014.

³³ Idem 2.

³⁴ Idem 2.

³⁵ "Pétrole et Gaz Arabes", 16 November 2014.

³⁶ EIA (2014), "Egypt Country Analysis Brief".

³⁷ "Pétrole et Gaz Arabes", 16 December 2014.

³⁸ Idem 5.

³⁹ EC (2014), "European Energy Security Strategy", COM (2014)330.

⁴⁰ <http://www.eia.gov/countries/cab.cfm?fips=ni>.

⁴¹ http://www.opec.org/opec_web/en/about_us/167.htm.

The worrisome expectations surrounding the recent elections exposed the ongoing political instability and the high risk for the oil sector. Although Mohammadu Buhari's victory at the polls was a peaceful transfer of power from the incumbent leader, Goodluck Jonathan, the new administration faces many challenges ahead. One of many is the Petroleum Industry Bill (PIB), aimed at reducing corruption in the industry, in hopes of improving investment prospective. Concerns over the PIB have caused a sharp decline in deepwater exploration and development. Crude production, as a result, is expected to drop from 2 million b/d in 2011 to 1.5 million b/d by 2020.⁴² Furthermore, with a large portion of the revenue coming from petroleum, and within the current context of low oil prices, the newly elected President will be pressured to either cut spending or find other sources of revenue.

The Boko Haram insurgency adds another dimension. Since its formation in 2002, Boko Haram has turned into a militia which now wages a campaign of violence throughout rural Northeastern Nigeria. With the ambitions of enforcing Sharia law and completely overthrowing the Nigerian state and its government, they have been responsible for over thousands of deaths in the region and an increasing number of attacks. Boko Haram's recent alliance with the Islamic State organisation is likely to increase their influence, providing the group with the opportunity for new funding, weapons and foreign fighters and exacerbating the instability within the country.

The global oil price trends are increasing the pressure on Nigeria's economy. Initially hurt by the shale boom that reduced its exports to the U.S., now the oil price is failing to replenish the national budget and has triggered the devaluation of the Nigerian naira. The estimated breakeven price of oil for 2015 is at \$122 per barrel for the nation's budget.⁴³ With the current oil prices, it gives a bleak outlook for recovery in the short-term. At an annual oil and gas conference in Abuja, Markus Droll, Shell vice-president for Nigeria and Gabon, raised his concerns over the low oil prices and funding for 2015. He argued that most of the available funding in the industry is required in order to keep up with the pace of decline, leaving very little remaining for growth. He further added that oilfield decline rates were as high as 15-20 % and that oil thefts were increasing costs.⁴⁴

With declining production rates, the Nigerian Petroleum Resources Department tried to spur investment in exploration. To offset the decline, the Nigerian government has to date invested more than \$240 million in the exploration of the Lake Chad basin and other northern hydrocarbon basins, including the Benue Trough, Bida Basin and the Sokoto-Rima Basin.⁴⁵ The progress towards development has been slow due to the deadly attacks by Boko Haram insurgents. The fear instilled by the group has forced personnel to abandon the northeast developments. Furthermore, IOCs are divesting as a result of the instability in the region. Companies like Shell, Total, Eni, Chevron and ConocoPhillips are selling their interests in onshore and shallow water oil projects to local Nigerian companies, due to security problems related to oil theft and pipeline sabotage. Instead, they are redirecting their investments to deepwater projects and onshore natural gas projects.⁴⁶

⁴² <http://press.ihs.com/press-release/energy-power/nigerian-elections-delay-oil-sector-reforms-and-deepen-investment-uncerta>.

⁴³ <http://oilprice.com/Energy/Oil-Prices/Oil-Price-Crash-Top-5-At-Risk-Countries.html> and <http://graphics.wsj.com/lists/opec-meeting> (Deutsche Bank).

⁴⁴ <http://af.reuters.com/article/nigeriaNews/idAFL6NOWJ37N20150317>.

⁴⁵ <http://www.epmag.com/terrorists-dampen-oil-hopes-nigerias-lake-chad-basin-713436>.

⁴⁶ <http://www.eia.gov/countries/cab.cfm?fips=ni>.

Given Nigeria's large hydrocarbon potential and offshore deepwater projects, the country has significant potential for future growth in oil and gas. Despite the political resistance, along with the decline of oil prices, it has the opportunity to cut subsidies and eliminate corruption, reforming the sector. Regardless of this potential, the country faces an uncertain future for its energy sector. The speculation over the contents and adoption of the PIB could delay projects and prevent investment in the long term.

3. THE STAKEHOLDERS

INTRODUCTION

In the "traditional" approach, the analysis of the geopolitics of gas tends to be structured around the interaction between states in which governments, national and international companies are considered the key players of the geopolitical game. The challenge is to shed light on how these relationships develop according to various factors, such as technological developments (notably hydraulic fracturing), global energy demand, domestic policies of producing countries, pricing and taxation in consuming countries, or environmental policies. Finally, diplomatic relations between producing, transit and consuming countries can enable or impede energy partnerships, as illustrated by the recent crisis in Ukraine.

Besides the "traditional" role of governments and (inter-)national companies in the geopolitics of gas, we currently observe an increasing involvement of other stakeholders, although with clear regional and national differences. This trend can be ascribed to the changing nature of the issues surrounding the energy business. Security of supply issues are timeless, but over the last twenty years, environmental policies have also become important in policy making. Environmental issues are creating new dimensions of uncertainty, economic impact and complexity, affecting many members of society and instilling debate across virtually all stakeholder groups.

In part, the growing involvement of other stakeholders is also due to the manner in which stakeholders today can raise their voices in policy debates. For instance, internet and social media are easily accessible, and provide new and powerful vehicles for organising public debates. In this way, a single voice can quickly and inexpensively mobilise support from like-minded citizens and create a snowball effect, eventually shaping policies. These new vehicles also allow individuals to proactively address one issue at a time, where opinions play a primary role.

Who are these stakeholders? In management theories, the word "stakeholder" refers to 'any group or individual who can affect or is affected by the achievement of the organisation's objectives'⁴⁷. Scholars tend to differentiate between primary, secondary and even tertiary stakeholders, according to their actual degree of impact or influence on business decisions and processes. Stakeholder theories look at 'the relationships between a business and the groups and individuals who can affect or are affected by it'⁴⁸. In an attempt to apply this approach to the geopolitics of gas, the focus needs to be placed on the stances taken by these new players connected to the gas business. Apart from

⁴⁷ R. Edward Freeman (1984), "Strategic Management: A Stakeholder Approach".

⁴⁸ Bidhan L. Parmar et al. (2010), "Stakeholder Theory: The State of the Art".

policymakers, they include special interest groups, think tanks and academics, international organisations, NGOs, media, and local and regional activists.

The influence of stakeholders on business activities can be considerable. A Goldman Sachs study on 190 oil and gas projects found that ‘stakeholder risk – that is, non-technical opposition –’ caused delays in 73% of the projects.⁴⁹ There are no clear patterns in the stakeholders’ roles and impacts on policy making. Stakeholder influence varies between countries, regions and areas of political interest. In many cases, governments organise processes of consultation with stakeholders in connection with policy issues, either directly or through consultants, before making decisions. In some circumstances, stakeholders trigger policy debates and shape public opinion. “Public opinion” is often seen as a powerful driver of policies. It is subtly interwoven with media, which is most often the voice of public opinion. Views on the use and role of public opinion in forming policy can be as diverse as the opinions themselves. Winston Churchill took the view that there was ‘no such thing as public opinion. There is only published opinion’. While Abraham Lincoln’s take was simply: ‘Public opinion in this country is everything’⁵⁰.

The following sections discuss and illustrate the involvement of stakeholders in various aspects of the gas business. Although a comprehensive mapping of stakeholders is outside the scope of this paper, we identify the key topics which draw the most attention, to illustrate how the debate is structured and assess how the position of influential stakeholders is reflected in the development of policies.

GAS AND CLIMATE CHANGE

Principal stakeholders: policymakers, NGOs, international organisations, think tanks and academics, media

In the 2012 *Geopolitics and Natural Gas* report, the impact of environmental policies was covered extensively. Based on the climate change discourse, where CO₂ emissions were key, natural gas claimed pole position among the fossil fuels. With relatively low emissions of carbon and other particulates, natural gas was identified as the best companion fuel in a low-carbon economy.

⁴⁹ Public acceptance workshop, IGU publication 1Q2015.

⁵⁰ www.theguardian.com/public-leaders-network/2012/sep/03/public-opinion-influence-policy.

NGO-triggered opposition to a coal power plant project in Malaysia

The Lahad Datu power station is a 300-megawatt (MW) power station, originally proposed as a coal plant by Sabah Electricity Sdn Bhd to be constructed on Borneo Island, Sabah, Malaysia. Five non-governmental organisations had formed Green SURF (Sabah Unite to Re-power the Future) in October 2009 to oppose the project, which at that point had been proposed a third time. During the campaign to scrap the project, which lasted for over a year, the public supported Green SURF by coming up with their own initiatives such as designing postcards addressed to the Prime Minister and divers who carried underwater banners asking for the project to be cancelled. Green SURF had also commissioned the University of California in Berkeley Renewable and Appropriate Energy Laboratory to produce an Energy Options Report for Sabah in making its case. The report was presented to the Prime Minister and several related ministries and agencies. Prime Minister Datuk Seri Najib Abdul Razak heeded the call made by civil society and the public who were against the construction of the coal-fired plant on Sabah's east coast. In 2011 the project was scrapped as a coal plant, but it continues to be developed as a gas-fired power plant. It was the collective voice of NGOs and the public that led to the cancellation of the coal project.

Reference: http://www.sourcewatch.org/index.php/Lahad_Datu_power_station.

While gas is successfully used for these reasons in policies to combat air pollution, the same arguments have not found their way into climate change policies. A separate paper⁵¹ has been prepared which examines the reasons behind the failure of gas to appear as a building block towards decarbonisation in national and international environmental policies. The paper demonstrates that the climate change policies that have been implemented to date are strongly focused on renewable energy sources (RES). At best they employ instruments to encourage emissions reduction by limiting coal-fired generation (through carbon pricing or standards), which so far have not effectively reduced CO₂ without the use of CCS or other abatement technology.

Furthermore, policymakers and other stakeholders are reluctant to recognise a fossil fuel as being a legitimate component of decarbonisation policies. There are concerns that the environmental impact of gas is greater than the role it could play in reducing emissions. The intense exploitation methods, particularly of shale gas, have only amplified this concern. Additional issues arise with the comparison of gas to coal. As long as the true environmental value of gas (the CO₂ price) is not part of economic valuations, gas is seen as more expensive than coal. There is a lack of awareness of the environmental benefits of gas, and the institutional presence of the gas industry in contributing to energy policy development does not seem to be as strong as it is in the coal industry. Finally, gas, notably pipeline gas, is not always seen as a politically reliable energy source. Although not always fact-based, this can have a negative influence on the public's perception of gas.

The combination of the abovementioned concerns appears to contribute directly to the sentiments of policymakers in Europe, where the growth of gas demand has been halted. However, Europe is not an isolated case. The role of gas as a "partner" in decarbonisation is not widely accepted. Some

⁵¹ Is natural gas green enough for the environmental and energy policies?, IFRI: Marie-Claire Aoun, Aurélie Faure; CIEP: CIEP staff, May 2015.

of the concerns above, if not all, are raised in other regions as well. Nevertheless, for some the issues of climate change and (pro-active) policies do not play a role as much as they do for others.

Many stakeholders participate in the environmental policy debate, addressing issues from local to global policy dimensions. Think tanks and academics offer a mix of views on the extent of the threats posed by climate change and on the most cost-effective ways to build low-carbon economies. Projects to exploit shale gas resources seem to have reignited and have polarised the debate about the sustainability of fossil fuels.

New York State's ban on fracking

On Wednesday 17 December 2014, Governor Andrew M. Cuomo announced that his administration would ban hydraulic fracturing in New York State. The decision followed a December 2014 report by the New York State Department of Health (“A Public Health Review of High Volume Hydraulic Fracturing for Shale Gas Development”, see http://www.health.ny.gov/press/reports/docs/high_volume_hydraulic_fracturing.pdf). This report asserted the existence of significant public health risks associated with fracking. The public discussion in New York State on fracking has been intense. Despite the economic benefits that are evident in other states and which allow fracking, there was, according to The New York Times of 18 December 2014, ‘strong opposition from groups worried about the effect of fracking on the state’s water supply, as well as on tourism and the quality of life in small upstate communities’. Apart from wide protests to influence the state’s decision-making procedures, various communities, not waiting for the state’s decision, had already imposed moratoriums or bans on fracking. In June 2014, the Court of Appeals ruled that towns could use zoning ordinances to ban fracking. Nevertheless, in February 2015, some officials from communities in the southern part of the state announced contemplating seceding from New York State and joining Pennsylvania to allow gas production. Employment was one of the arguments. The debate has been dividing communities in the state.

In the current debate on decarbonisation strategies, few actively promote the policy transition from coal to gas⁵².

International organisations generally recognise the role that gas can have in achieving emission reductions. However, their contribution to the debate falls short of advocating policies favouring gas. Economic considerations and concerns about footprint emissions are some of the reasons for this.^{53,54}

⁵² One example of this is in an article published by *Nature*. Scientists examined the surge in unconventional (shale) gas production (such as in the United States) and found that ‘market-driven increases in global supplies of unconventional natural gas do not discernibly reduce the trajectory of greenhouse gas emissions or climate forcing’. An increased use of gas and possible fugitive methane emissions are mentioned as explanations.

⁵³ In its reports, *Golden Age of Gas* and *WEO2014*, the IEA references the lower carbon emissions of gas while recognising that coal will continue to play a major role in the electricity sector. On the other hand, the IEA also points to well-to-market emissions, notably of methane, simply lumping oil and gas together.

⁵⁴ A similar stance is taken by the International Monetary Fund (IMF). One of its publications (International Monetary Fund, 2014, “Getting the Energy Prices Right – From Principle to Practice”) states that ‘Fiscal policies should be center stage in getting energy prices to reflect the harmful and environmental side effects associated with energy use’. It finds that,

NGOs dealing with the environment are more critical about any role of gas. This is evident in Greenpeace's reluctant acceptance of such a role. The organisation is strongly focussed on RES,⁵⁵ although it acknowledges that such a phasing out cannot be done immediately and that gas can contribute in the process.⁵⁶

Mainstream media tends to give considerable "airtime" to the subject of climate change. Like think tanks and academics, it addresses the scientific uncertainty regarding the consequences of CO₂ emissions and their effect on climate. It also discusses issues that are preventing global agreements on limiting carbon emissions from being made.

As a result of stakeholder scepticism, there is no strong driver for a larger role for gas (to replace coal), unlike there is for RES. In this context, public opinion is unlikely to give vocal support to gas, except in cases where air pollution concerns are strong, making the environmental benefits of gas more visible to local communities.

THE ENVIRONMENTAL IMPACT OF GAS EXTRACTION

Principal stakeholders: policymakers, NGOs, international organisations, think tanks and academics, media, (local) activists.

In most places where gas extraction is under consideration, local activists and environmental NGOs are alert to the threats to ecosystems and the potentially lasting damage to the surrounding environment. For offshore projects combining oil and gas production, oil spills are the primary risk. The Macondo disaster, which occurred in the Gulf of Mexico in April 2010, is a reminder of the reality and extent of such a risk. A gas release and subsequent explosion on the Deepwater Horizon oilrig caused the death of 11 people, and hydrocarbons leaked into the water for 87 days before the well could be capped. Damage to marine and wildlife habitats were depicted in the media mostly in the immediate aftermath of the event and were later investigated in depth by NGOs⁵⁷. Academics⁵⁸, public institutions⁵⁹ and energy companies⁶⁰ themselves have also assessed the various consequences of the accident. They have tried to determine its causes and draw recommendations for safety improvements for offshore oil and gas activities. Regarding the sole extraction of natural

unfortunately, this is not the case for energy prices in many countries. For instance: 'Coal use is pervasively undercharged, not only for carbon emissions, but also for the health cost of local air pollution'. And in the same report, specifically on natural gas: 'Air pollution damage from natural gas is modest relative to that from coal, but significant tax increases [...] are still needed to reflect carbon emissions.'

⁵⁵ : 'The world is clearly at a Point of No Return: either replace coal, oil and gas with renewable energy, or face a future turned upside down by climate change.' Greenpeace (2013), 'Point of No Return – The massive climate threats we must avoid'.

⁵⁶ 'A shift from coal and oil to natural gas in the remaining conventional applications leads to a further reduction of CO₂ emissions' and 'Whilst remaining firmly committed to the promotion of renewable sources of energy, we appreciate that conventional natural gas, used in appropriately scaled cogeneration plants, is valuable as a transition fuel, and can also drive cost-effective decentralisation of the energy infrastructure.' Greenpeace (2012), "Energy [R]evolution – A Sustainable World Energy Outlook".

⁵⁷ See, for instance, National Wildlife Federation (2014), "Four Years Into the Gulf Oil Disaster: Still waiting for restoration".

⁵⁸ See, for instance, Deepwater Horizon Study Group (2011), "Final Report on the Macondo Well Blow-Out".

⁵⁹ See, for instance, National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling (2011), "Deepwater: The Gulf Oil Disaster and the Future of Offshore Drilling".

⁶⁰ See, for instance, BP (2010), "Deepwater Horizon Accident Investigation Report".

gas, concerns voiced through the media and NGOs tend to be the strongest when projects are located in remote areas with limited human activity.

The Arctic is one these contested frontier areas. NGOs are working together for the protection of the environment in the Arctic region and are actively addressing the issues of environmental impact.

Hydrocarbon developments in the US Arctic

For the US, the main Arctic activity was focused in Alaskan onshore fields, but the drop in production (currently 25% of its peak in 1980s) led the US government to open up the Alaskan Arctic for offshore exploration⁶¹. In 2008, Shell acquired a large number of exploration leases in the Beaufort and Chukchi Seas. The US government's decision was met with strong opposition by environmental groups, which contended that there was no mechanism in place to clean up the Arctic Ocean in the case of an oil spill.⁶² By 2010, the lawsuit brought against the Interior Department halted operations, citing reconsideration of certain aspects of the sale along with further examination of the environmental impact of natural gas development.

In October 2011, the Obama administration announced it would move forward with the leases in the Arctic. Following the approval of its oil spill amelioration plans, Shell continued the development of the projects throughout 2012. However, faced with several legal issues and regulatory hurdles, the company stopped operations the same year. In February 2015, after a three year hiatus, Shell said it plans to resume exploratory drilling in the Chukchi Sea. President Obama's recent executive order to limit Arctic drilling does not impact the leases currently held by Shell.⁶³

Over the past decade, environmental concerns have grown significantly with the development of unconventional gas resources. These resources differ from conventional resources only in terms of extraction method, as they are located in insufficiently permeable rock formations that need to be fractured. The *"shale gas revolution"*, as it is often referred to in the media, has its roots in the US, where the combination of hydraulic fracturing and horizontal drilling was first introduced at the beginning of the 2000s, enabling unconventional gas to be released in commercial quantities. The future of natural gas is now seen as the continuation of the *"shale gas revolution"*, and the environmental concerns around shale gas extraction therefore have a direct impact on the general perception of natural gas.

While shale gas is progressively being developed in different parts of the world, the United-States' production is by far the largest. Much publicity is given to the competitiveness advantage that the US is deriving from the abundance of shale gas but also to the environmental damages that the new extraction processes may cause. As pointed out by the IEA⁶⁴, experts agree that shale gas extraction is an 'intensive industrial process, generally imposing a larger environmental footprint than conventional gas development'. Because it is less concentrated in the rock formation, shale gas has to be released with a larger number of wells with a shorter life span. The extraction of shale gas is therefore more invasive, with a clear and visual impact on the landscape. Such direct consequences, as well as the pollution concerns, have been largely investigated in the media, with the *"Gasland"* documentary possibly receiving the widest audience. This documentary, written and directed by Josh

⁶¹ Oxford Institute for Energy Studies: "The Prospects and Challenges for Arctic Oil Development" (2014).

⁶² <http://www.offshore-technology.com/projects/chukchiseapermit/>.

⁶³ <http://news.nationalgeographic.com/news/2015/02/150205-obama-alaska-oil-anwr-arctic-offshore-drilling/>.

⁶⁴ IEA (2012), "Golden Rules for a Golden Age of Gas".

Fox, was released in 2010 and aimed to draw attention to the environmental and health problems that communities living near shale gas extraction areas have been experiencing. While the accuracy of its findings has been challenged by some⁶⁵, the documentary has been widely distributed around the world and received several awards⁶⁶. Furthermore, it is acknowledged that there is no comprehensive documentation on the impact of fracking in the US. While there are good examples of collaboration between stakeholders that have improved and continue to improve the overall extraction process, a lack of consistent monitoring, the absence of a centralised database of incidents and the non-disclosure of agreements that are sometimes in place between operators and land owners are still issues⁶⁷. This lack of information may also contribute to the perception that US shale gas developments have been made at the expense of the environment. Nevertheless, it is important to note that the shale industry is improving, partly because the technology is still evolving and partly because industry participants are keen to earn a license to operate by improving their track records in extracting shale gas.

As the opportunity to develop shale gas is being considered in many parts of the world, numerous risk assessment reports have been drafted by academics⁶⁸, national and regional bodies⁶⁹ and international institutions⁷⁰. In these reports, and also as confirmed by RFF's survey and statistical analysis⁷¹ of 215 expert views from government agencies, industries, academia and NGOs, a certain set of risks generate an overall consensus. These risks primarily relate to water pollution and depletion of water resources, atmospheric emissions (including local pollution and greenhouse gas emissions), competition with other activities for land use, traffic disruptions and noise in communities, and finally induced seismicity. The existence of such risks is not debated, but stakeholders take different views as to the question of whether the risks identified are unavoidable or if they can be mitigated. For instance, UNEP considered that 'unconventional gas exploitation and production may have unavoidable environmental impacts'. In a more nuanced statement, the IEA put forward 'golden rules' for a successful development of unconventional gas resources. The IEA's point of view is that 'the technologies and know-how exist for unconventional gas to be produced in a way that satisfactorily meets the challenges' and insists that public authorities and the gas industry are deploying sufficient efforts to achieve the highest environmental standards and thus gain their *social license to operate*. On the contrary, all environmental NGOs tend to say that fracking 'poses

⁶⁵ See, for instance, the documentary "Truthland", produced by the Independent Petroleum Association of America as a response to "Gasland".

⁶⁶ Including the Sundance Festival Special Jury Prize.

⁶⁷ EC (2014), Impact Assessment accompanying the Communication on the exploration and production of hydrocarbons (such as shale gas) using high volume hydraulic fracturing in the EU.

⁶⁸ See, for instance, Tyndall Centre for Climate Change Research (2011), "Shale Gas: An updated assessment of environmental and climate change impacts" and Worldwatch Institute (2010), "Report on Environmental Risks for Shale Gas".

⁶⁹ See, for instance, the German Federal Environment Agency (2012), "Fracking and Its Environmental Impacts, in Particular to Groundwater"; Poland (2011), "Environmental Aspects of Hydraulic Fracturing Treatment Performed on the Łebień LE-2H Well", France (2011), Report to the Ministry of Ecology and the Ministry of Energy, "Les Hydrocarbures de Roche-mère en France"; and the US Environmental Protection Agency, scientific papers published as part of the ongoing study on the potential impact of hydraulic fracturing for oil and gas on drinking water resources.

⁷⁰ See, for instance, IEA (2012), "Golden Rules for a Golden Age of Gas" and UNEP (2012), "Gas Fracking: Can we safely squeeze the rock?".

⁷¹ Resources For the Future (2013), "Pathways to Dialogue: What the Experts Say about the Environmental Risks of Shale Gas Development".

unacceptable risks to people and the environment⁷² and recommend that the shale gas option should not be considered ‘until all these problems are adequately addressed’⁷³.

Air quality issues in China

Environmental governance has surpassed corruption to become the greatest concern of the Chinese public, according to a survey by the state-run *China Youth Daily*. Swathes of northern China, including Beijing, are frequently blanketed by hazardous smog, with toxicity being more than 20 times higher than the levels considered safe by the World Health Organisation. Research studies warn of rising incidences of lung cancer and detrimental impacts to agricultural output. Ma Jun, one of China’s most prominent environmentalists, said mounting public dissent across China over air and water quality has forced the government to act in order to maintain social stability.⁷⁴

The development of shale gas is the aspect of the gas industry which generates more public interest than any other, and it is not positive. The combination of local NIMBY-ism and broader environmental concerns brings individuals into action to resist the development of shale gas in various parts of the world. With these open questions on the actual environmental risks and the possibilities for mitigating them, policymakers are facing hard choices. As a precaution, national and local governments in many parts of the world have decided to introduce moratoria or legal bans on the use of hydraulic fracturing in shale formations. In areas where shale gas is being developed or is considered, new regulations are being introduced. One example is the US Environmental Protection Agency’s issuance of updated air pollution standards for oil and natural gas production in 2012⁷⁵ and its current development of new rules to address discharges of wastewater pollutants⁷⁶. Similarly, in January 2014 the European Commission issued a recommendation to EU Member States on minimum principles for the exploration and production of hydrocarbons using high-volume hydraulic fracturing.

In addition to these legal initiatives, other actions have been taken to improve the transparency of shale gas activities and the measurement of their impact on the local environment. For instance, the “*Frac-Focus*” web registry was launched in 2011 as a joint project of the Ground Water Protection Council and the Interstate Oil and Gas Compact Commission in the United States.⁷⁷ Its objective is to provide public access to the reported fluid products used for fracking in all locations, along with their compositions and purposes. The International Association of Oil & Gas Producers launched a similar web initiative in June 2013 with “*ngsfacts*”. The website provides information on hydraulic fracturing and includes voluntary disclosures of chemical additives on a well-by-well basis in the European Economic Area.⁷⁸

⁷² WWF (2013), “Position on Shale Gas in the EU: Keep the Pandora’s box firmly shut”.

⁷³ Food&Water Europe, Friends of the Earth Europe, Greenpeace, Health&Environment Alliance (2012), Position statement on shale gas, shale oil, coal bed methane and fracking.

⁷⁴ <http://www.smh.com.au/world/public-concern-forces-beijing-to-act-on-environment-20140305-hvga5.html>.

⁷⁵ Final EPA rules for the oil and natural gas industry published on 17 April 2012. Source: EPA website.

⁷⁶ EPA proposed amendment to the Effluent Limitations Guidelines and Standards for the Oil and Gas Extraction Category, to be published in early 2015. Source: EPA website.

⁷⁷ <https://fracfocus.org/welcome>.

⁷⁸ <http://www.ngsfacts.org/>.

Despite these efforts, public opinion is likely to remain sceptical. For a radical shift in perception of gas to occur, the industry and governments will have to produce more reliable evidence of the conditions that ensure environmentally safe procedures.

Algerian anti-shale gas protests

While Algeria holds the third largest shale gas reserves in the world, according to EIA surveys, the first exploration project launched in January 2015 in the south of the country has been facing fierce opposition from local stakeholders. After the government announced positive results from the pilot project to test for shale gas in the Ahnet Basin, protests started in the town of In Salah, located 1600 km south of Algiers. Daily sit-ins have been organised to alert the public to the risks that hydraulic fracturing could pose to the environment and public health, in particular because water is in short supply in the region. The movement has spread to other towns in the region and even led to a nation-wide protest in favour of a moratorium on fracking, which took place on 24 February 2015. Opposition to further drilling has gained major importance in the political debate, with demonstrators receiving support from the coalition of opposition parties. On the local stage, protests turned more violent when clashes broke out with police forces in late February 2015, after an assault on a base run by Halliburton. Until now the Algerian government has contested a moratorium, insisting on risk management and the economic opportunities that shale gas could represent for the country. Nonetheless, officials confirmed that a decision on exploiting the gas field would only be taken once the exploration stage is finished and the extraction costs are known.

THE SOCIAL IMPACT OF GAS PRODUCTION ACTIVITIES

Principal stakeholders: policymakers, local communities, NGOs, international organisations, think tanks and academics, media

In addition to protecting the environment in which they operate, extractive companies are expected to build trust and obtain their “social license to operate”. This type of license is ‘outside of the government or legally-granted right to operate a business. A company can only gain a social license to operate through the broad acceptance of its activities by society or the local community’.⁷⁹ The metaphor was first used in a World Bank sponsored meeting on mining and the community in 1997, before gaining traction and spreading to other industries.⁸⁰ The key idea is that extractive companies should engage with local communities and not just with governments and national partner companies. As many have observed⁸¹, economic and social expectations are rising in resource-rich countries, and the role of extractive companies is no longer seen as restricted to direct payments to the state and scattered philanthropic actions; it extends to developing strategies on how to deliver real and lasting benefits on the ground. Ensuring that their activities are well integrated in the local context has thus become a key condition for companies to secure stable and long-lasting relationships with host countries and is also a strategic element for their global reputation.

⁷⁹ Ethical Fund (2009), “Learn the Lingo”.

⁸⁰ R.G. Boutilier, L.D. Black and I. Thomson (2012), “From Metaphor to Management Tool – How the Social Licence to Operate can Stabilise the Socio-Political Environment for Business”.

⁸¹ See, for instance, McKinsey (2014), “Riding the Resource Wave: How extractive companies can succeed in the new resource era”.

Community opposition to a gas power plant project in Canada

On the eve of provincial elections in Oakville, Ontario a 1000 MW gas power plant was cancelled due to a war waged against its construction by a community group of high profile residents, including several Fortune 500 ex-CEOs. The government had ultimately caved in and cancelled the project. Through legislative committee hearings, it became clear that the decision was not made by the Minister of Energy, but rather by the campaign team and the Premier himself. Computer files were ordered to be erased in response to a currently ongoing criminal investigation. The total cost of the cancellation exceeded \$1 billion.

The “local content” theme paper⁸² shows how increasing efforts are being made to create productive links between the oil and gas activities and the rest of the domestic economy. Numerous initiatives have been launched to ensure that despite being capital-intensive and reliant on highly specialised skills and technologies, oil and gas companies do not work as enclaves in the host country but actually provide job opportunities and engage with local suppliers. The trend is for governments to establish more detailed frameworks and for companies to elaborate more comprehensive action plans in this field. In addition, the success and challenges of local content are now being widely discussed at the global level, for instance with the annual Local Content Forum or World Bank events. One of the lessons learnt from past experiences is that local content strategies are more likely to be successful when implemented in a collaborative approach. While companies have a clear interest in providing advice to public authorities as a way to ensure that the legal requirements will be manageable and fit for purpose, public authorities benefit from this dialogue as well, because getting views from the ground can only improve the efficiency of their policies. Creating an enabling environment is also a key factor for the success of local content strategies, and O&G companies can provide highly valuable contributions in this field by mobilising their expertise to facilitate access to energy.

Eni’s project to facilitate access to energy in Congo

After the acquisition of the M’Boundi oil field in the Republic of Congo, Eni engaged in the construction of an electric power station (Centrale Electrique du Congo) with an installed capacity of 300 MW, while also doubling the capacity of an existing station (Centrale Electrique de Djeno) from 25 to 50 MW. These two stations, representing 60% of the installed capacity in Congo, are fuelled by associated gas extracted from the M’Boundi field by Eni. As a complement to the installation of these new generation units, the high voltage network between Pointe Noire and Brazzaville has been renewed and the electricity distribution network of Pointe Noire has been extended.

This initiative contributes to extending the electricity supply in Congo. Electricity consumption in Pointe Noire has risen by 60% over the last three years, and 40% of the city’s population is now connected to the grid. In addition, the use of associated gas as a fuel for power generation helps to reduce flaring and limits the adverse effects of greenhouse gas, sulphur dioxide and methane emissions on public health and the environment. Furthermore, ENI promotes electrification for use by schools, health centres and drinking water supply projects. This is part of a larger programme called the Integrated Hinda Project (PIH), which aims to improve the living conditions of the inhabitants of the M’Boundi area.

⁸² Local content strategies in the Oil and Gas sector: *How to maximize benefits for the hosting communities?*, Marie-Claire Aoun and Carole Mathieu IFRI, IFRI/CIEP project for TF3 IGU, May 2015.

Another key pillar of social license relates to establishing regular exchanges with the communities living in the surrounding areas. “Community engagement” is seen as a way to create constructive relations and avoid social tensions, which could delay or even threaten the execution of projects. As reported in their CSR reports, companies commit to holding regular consultations with the communities throughout the life-cycle of the project and to using the feedback received to adapt the operations and limit disruptions. In addition, such dialogue gives companies insight into the specific concerns and needs of the local population. This can be used to better design and target their social investments. IPIECA, the global oil and gas industry association for environmental and social issues, is also working on best practice reviews and the development of engagement toolkits for its members.⁸³ Since 2006, the International Finance Corporation, the World Bank’s private sector, has introduced *Policy and Performance Standards on Environmental and Social Sustainability*⁸⁴. These include guidance on community engagement and relations with indigenous people, which must be followed by the IFC’s clients if they want to secure their funding. In the case of the *Equator Principles*, which are widely used by financial institutions to assess environmental and social risks in projects, the fifth principle relates to stakeholder engagement and the sixth describes the grievance mechanisms that should be put in place to facilitate the resolution of concerns.⁸⁵ This topic is also being investigated by research institutes, which assess whether the existing laws and standards are leading to real changes in companies’ practices.⁸⁶

Peru’s LNG Project

In 2003, Peru LNG (PLNG), a consortium of companies also involved in the operation of Camisea I – the country’s largest producing gas field – announced plans for the second phase of the project, named Camisea II. Apart from the construction of a liquefaction plant on the coast and a connecting pipeline from the gas fields, the plans included the enhanced development of the Camisea gas fields. The project was met by strong opposition from conservation groups, due to its location in a sensitive part of the Amazon reserve.⁸⁷ In January 2005, a protested public hearing of the environmental impact assessment delayed the project for four months and the Inter-American Development Bank’s loan disbursement to the project for 18 months.⁸⁸

With the assistance of IFC Advisory Services, PLNG implemented social investment programmes. By establishing a partnership with a local NGO, the company was able to monitor environmental and social aspects of the project and turn them into action plans.⁸⁹ In one instance, their efforts to minimise the impact on the forest and wildlife was recognised by some environmentalists.⁹⁰ Through this process, PLNG was able to

⁸³ See, for instance, IPIECA (2013), “Improving Environmental and Social Performance: Good Practice Guidance for the Oil and Gas Industry”.

⁸⁴ http://www.ifc.org/wps/wcm/connect/c8f524004a73daeca09afdf998895a12/IFC_Performance_Standards.pdf?MOD=AJPERES.

⁸⁵ http://www.equator-principles.com/resources/equator_principles_III.pdf.

⁸⁶ See, for instance, World Resources Institute (2009), “Breaking Ground: Engaging Communities in Extractive and Infrastructure Projects” and Chatham House (2011), “Revisiting Approaches to Community Relations in Extractive Industries: Old problems, New avenues?”.

⁸⁷ http://www.queensjdiexec.org/publications/qed_dp_227.pdf.

⁸⁸ http://amazonwatch.org/documents/camiseaII_sept2007_web.pdf.

⁸⁹ http://www.ifc.org/wps/wcm/connect/4937c0804f612f0397f2ff0098cb14b9/IFC_LOE_PLNG.pdf?MOD=AJPERES.

⁹⁰ <http://www.trust.org/item/20140129103423-pis8y/>.

improve communication with the stakeholders, mitigate project risks and avoid further conflict. The actual exports of Peru LNG started in June 2010.

In January of 2014, Peru announced plans to expand the Camisea gas operations and projects. The block now open for exploration overlaps with a reserve for indigenous groups, and incited another controversial public debate. Addressing these concerns is a new challenge facing the Peruvian Government and the companies involved.

On the wider issue of economic development in resource-rich countries, the academic literature of the late 1990s and early 2000s has emphasised the importance of ensuring transparency in the management of revenues from extractive activities. It is seen as a way to guarantee accountability and thus promote better management of the resource wealth. With media and civil society organisations raising awareness on these issues⁹¹, the slogan “*Publish What You Pay*” started to receive wide coverage at the turn of the century. As a direct and concrete result of the stakeholders’ mobilisation, the voluntary Extractive Industry Transparency Initiative was launched in 2003, introducing twelve principles on information disclosure related to revenues and payments. As a way to limit the risk of conflict between companies and host governments, it was decided that reporting would take place at a national level, with governments leading the implementation process. Over the years, the EITI standards have been refined and, in many countries, the requirements have been enacted in law. Forty-four countries implement the EITI standards today, and twenty-six have been considered compliant by the EITI Board.⁹² The latest development relates to the adoption of legislation in the US⁹³ and the EU⁹⁴ requiring companies listed in their jurisdictions to disclose payments to governments in all countries where they operate. The logic of the initial “*Publish What You Pay*” campaign is making a comeback, as this new mandatory company reporting now applies to 90% of the world’s major international extractive companies⁹⁵.

The future of gas production in the Netherlands

For many years the area over the Groningen gas field has suffered regular earthquakes, as a consequence of the depletion of the field. The resulting damages have been compensated by the producer. On 16 August 2012 the area experienced a 3.6 earthquake, the strongest one to date, causing substantial damage to the surrounding buildings. As the concerns about the safety of inhabitants in the region grew, the Ministry of Economic Affairs, a stakeholder in the gas sales from the large Groningen field, started an investigation. As a result, in February 2014 Dutch gas production was capped at 42.5 bcm. Studies investigating the geology of the field and the precise cause of the stronger earthquakes were started but did not bring quick results. In light of mounting protests from the population against continued gas production, as long as their safety could not be guaranteed, the minister lowered the maximum production per year for the Groningen field to 38 bcm in December 2014. Growing action by local residents led to further national media attention and mobilised political and public pressure. In light of mounting protests from the population against continued gas production, and learning from a report by the Dutch Safety board that human safety had not been an integral

⁹¹ See, for instance, *Global Witness* (1999), “A Crude Awakening”.

⁹² <https://eiti.org/eiti/history>.

⁹³ Article 1504 of the Dodd-Frank Wall Street Reform and Consumer Protection Act 2008.

⁹⁴ Directive 2013/34/EU of the European Parliament and of the Council of 26 June 2013 on the annual financial statements, consolidated financial statements and related reports of certain types of undertakings.

⁹⁵ According to Transparency International EU, quoted by Reuters, <http://www.reuters.com/article/2013/04/09/us-eu-transparency-idUSBRE9380XZ20130409>.

part of the decision-making process, the minister lowered the maximum production further in January 2015 to 16.5 bcm until June 2015, when a new decision on production is expected. Conclusive scientific evidence of the correlation between the severity of earthquakes and the volume of gas production is still lacking, but in the public debate this connection has been made, forcing the government into decision-making prior to the completion of its studies.

On these different aspects of social license, it is interesting to see how the call for action often emerges from stakeholder initiatives, progressively gains traction and sometimes leads to global consensus. When this stage is reached, the call for action can translate into international guidance and even be complemented with legal requirements, which will frame the way extractive companies operate in host countries.

ENERGY DEPENDENCE

Principal stakeholders: politicians, media, think tanks and special interest groups

Resource-poor countries rely on international markets and thus other countries to supply their energy needs. The fact that fossil fuels are a vital part of every developed economy implies that dependency on supply from abroad is considered to be an economic and political risk, especially because of the fear of supply disruptions. Domestic energy resources are therefore often seen as important to balancing imported energy sources in the energy mix. Moreover, domestic energy supplies can also be important for employment and balance-of-payment reasons. Energy imports are often part of diversification policies which ensure that supplies are purchased from various sources. The ability to diversify imports in terms of energy source and geography depends on the level of internationalisation of the energy market, but also on the organisation of the energy sector in the country in question.

Supply security is particularly important in the natural gas trade because most natural gas is transported by pipeline infrastructures which physically connect supply and demand, also across borders. The inflexibility of these infrastructures reinforces the dependence of the importing country. The association of natural gas with the “dependency” of some stakeholders contrasts with that of others who see gas as an abundant energy source that can help diversify energy portfolios and increase security of supply. The internationalisation of the previously regional gas market due to the emergence of more (LNG) suppliers has lifted some of these concerns, but certain countries remain heavily dependent on only one or two suppliers. The addition of LNG as a source of supply typically has taken place in South America. Chile, Brazil, and even Argentina have turned to importing LNG to reduce security of supply risks in times of limited regional supply.⁹⁶

China has carefully diversified its supplies. After importing pipeline gas from Turkmenistan and LNG from various countries, the country has now also started importing pipeline gas from Russia.

The dependence on LNG supplies also comes with security of supply concerns regarding bottlenecks in naval routes. These routes are the same as those featured in oil supply security documents, but very often LNG trade is not (yet) mentioned. Given the growing import dependency of Asian

⁹⁶ Uruguay will replace its pipeline gas imports from Argentina by LNG supplies, as soon as it finalises the construction of its regasification facilities in the River Plate, to be commissioned in late 2015 and early 2016.

countries, China, for instance, is exploring possibilities to reduce its dependence on the Strait of Malacca by developing a canal through Thailand. At the same time, Chinese investors are involved in the expansion of the Panama Canal and are exploring transport options through Nicaragua.

The European Commission (EC) has also voiced its concerns about the vulnerability of the EU to external energy shocks and the related adverse effects on consumers and industries.⁹⁷ Evidence of such vulnerability is perhaps the 2009 winter gas shortage experienced by several Southeastern Member States, with Bulgaria having to close public schools at the height of the winter due to a lack of heating. In 2014, the EC published a plan to reduce EU energy dependency and conducted “stress tests” to simulate a gas supply disruption for the winter of 2014/15.⁹⁸ In 2015, The Council accepted the Energy Union.

The seriousness with which (European) governments consider the issue of energy dependence is further exemplified by the rise of “energy security” in NATO terminology. Being a Western military alliance dedicated to protecting territories of its Member States against military invasions, NATO now gives increased attention to the increased “international security dimension” of energy.⁹⁹ Speaking at a conference amidst the Ukraine crisis in 2014, former NATO Secretary General Anders Rasmussen said that a better functioning European energy market could resolve the risk of one single energy supplier blackmailing one single nation.¹⁰⁰ The same trend can be seen with the G20. In November 2014, under the Australian Presidency, the organisation issued nine principles for energy collaboration among members and highlighted the importance of ‘enhancing energy security through dialogue and cooperation’¹⁰¹.

Very few stakeholders challenge these concerns or offer opposing views.

Not surprisingly, special interest groups, such as the International Gas Union (IGU), stress the abundance of natural gas in the world, point to the expanding LNG trade and global gas infrastructures and the role that unconventional gas resources can play in securing (regional) gas supplies.¹⁰² The European Gas Advocacy Forum (EGaF) holds that ‘future supply outlook for Europe is now fully transformed’, thanks to the growth of LNG infrastructure, new pipeline systems and more interconnections.¹⁰³ It states that security of supply fears are misplaced, as ‘80% of the world’s gas

⁹⁷ EC, Member States’ Energy Dependence, April 2013. URL:

<http://ec.europa.eu/economy_finance/publications/occasional_paper/2013/pdf/ocp145_en.pdf>.

⁹⁸ EC, “In-depth Study of European Energy Security”, 2 June 2014. URL:

http://ec.europa.eu/energy/doc/20140528_energy_security_study.pdf.

⁹⁹ See, for example, the NATO publication, “NATO’s Role in Energy Security”, updated 13 August 2014. URL: <

http://www.nato.int/cps/en/natolive/topics_49208.htm#>.

¹⁰⁰ Comments by Anders Fogh Rasmussen during a Chatham House conference, “The Future of NATO: A Strong Alliance in an Unpredictable World”, 19 June 2014. URL:

http://www.chathamhouse.org/sites/files/chathamhouse/field/field_document/20140619RasmussenQ%26A.pdf.

¹⁰¹ https://g20.org/wp-content/uploads/2014/12/g20_principles_energy_collaboration.pdf.

¹⁰² See, for example, the presentations by Mr Jérôme Ferrier, President of IGU, 22 October 2013, Beijing, and by Mr Hans Riddervold, Director of IGU, 4 July 2012, Caspian Gas Forum, Istanbul. URL: <http://www.igu.org/igu-presentations>.

¹⁰³ EGaF, “The Future Role of Natural Gas”, April 2013, p. 10 URL:

<http://europeangasforum.files.wordpress.com/2013/04/egaf-natural-gas-brochure-03-april-2013.pdf>.

reserves are located within a 5,000 kilometre radius of the EU' and natural gas from unconventional resources is 'widely dispersed geographically and thus will aid in supply diversification'.¹⁰⁴

Research shows that (energy) dependency is not something that can be phased out in the short-term,¹⁰⁵ although the often dramatic and alarming headlines of newspapers and websites suggest otherwise. Mainstream press tends to quickly link political events to energy dependency.¹⁰⁶ Because of the editorial constraints, the complexities and dimensions of energy relations are often not fully reflected. Think tanks and research institutes have long pointed out and discussed the geopolitical features of the (inter)dependence between energy exporters and importers. Some cases illustrate that the pipeline business is subject to a multiplicity of risks that can ultimately create discord between governments, such as commercial or technical incidents specific to pipelines, transit problems or pricing issues.¹⁰⁷ Yet contrary to these, some argue that dependence on gas supply by pipeline does not have to be perceived negatively per se, as the long-term nature of this business has always required 'governments to establish robust conditions for uninterrupted supply over a very long period'¹⁰⁸. This does not only apply to pipelines; Japan, for instance, has always actively pursued good diplomatic relations with its LNG suppliers, contributing to bilateral stability.¹⁰⁹

GAS AND COMPETITIVENESS

Principal stakeholders: policymakers, media, think tanks and special interest groups

Despite having very diverse uses, including heating, vehicle transport, electricity production and industrial processes, natural gas is not the single or even predominant fuel for any of these. Because consumers have the ability to switch from gas to other energy sources, the level of gas demand is largely dependent on whether gas is cheaper or more expensive than its competitors, as well as on seasonal (demand and supply) variations and constraints. In addition, natural gas is not traded on a global market, although LNG is contributing to the globalisation of gas exchanges. It implies that there is no single price for gas but many regional prices, determined according to different supply and demand balances and different pricing schemes. Debates on the competitiveness of gas are therefore based on regional specificities and revolve around the key question of whether price levels are appropriate, not too low or too high compared to the other energy sources and regions.

The exceptionally low and volatile price of gas in recent years stirred up a lively debate in North America. Some stakeholders (wind and solar industries, but also sections of civil society and important opinion makers) are worried that low gas prices will lead to higher CO₂ emissions by

¹⁰⁴ Idem.

¹⁰⁵ In the case of EU on Russia, see OIES, "Reducing European Dependence on Russian Gas: Distinguishing natural gas security from geopolitics", October 2014, which concludes that 'there is limited scope for significantly reducing overall European dependence on Russian gas before the mid-2020s'.

¹⁰⁶ See, for example, *The Economist*, "Conscious Uncoupling", 5 April 2014, URL: <http://www.economist.com/news/briefing/21600111-reducing-europes-dependence-russian-gas-possible-but-it-will-take-time-money-and-sustained>.

¹⁰⁷ See, for an overview, Is natural gas green enough for the environmental and energy policies?, IFRI: Marie-Claire Aoun, Aurélie Faure; CIEP: CIEP staff, May 2015.

¹⁰⁸ CIEP, "Gas: Sustaining Future Global Growth", 25th WGC, 2012, p.7, URL:<http://www.clingendaelenergy.com/inc/upload/files/Geopolitics_and_natural_gas_KL_final_report.pdf>.

¹⁰⁹ CIEP, "Japan: Nieuwe agenda voor energieveiligheid", *Internationale Spectator*, August 2007.

making it outcompete renewables. There are several examples of calls for government intervention and lobbying attempts to ensure that renewables remain competitive with gas.¹¹⁰ On the other hand, other stakeholders (e.g. in the oil and gas industry) dismiss the claim that cheap gas is driving renewables out of the energy mix.¹¹¹

Many actors in the US underline the positive contribution of abundant gas and low gas prices as a “domestic energy renaissance” and a competitive advantage in manufacturing. The energy-intensive industry, echoed by some media, strongly opposes LNG exports on the ground that these may hamper the competitive advantage acquired by the US.¹¹² On the other hand, the oil and gas industry has consistently pushed for exports.¹¹³

The debate is completely different in Europe. Many stakeholders, in particular energy-intensive industries, complain that gas is too expensive and urge governments to seriously consider Europe’s loss of competitiveness relative to the US.¹¹⁴

Oil-based pricing mechanisms have been increasingly questioned in Europe, and some have blamed oil indexation for being one of the main factors that has kept gas prices at high levels. In recent years opposition to oil indexation in Europe has rested on a solid consensus between consumers, regulators, politicians, some academics and wholesale energy companies.¹¹⁵ On the other hand, external suppliers have defended oil indexation as the best available pricing mechanism, in particular because, in their view, market-based pricing mechanisms lack substance in some markets, are too volatile and may put long-term investments at risk.¹¹⁶ Following the renegotiations of long-term import contracts, the gap between hub-linked and oil-linked prices has largely closed in northwest Europe and some neighbouring countries. Moreover, given the recent drop in oil (and oil-indexed) prices, the push for hub indexation in other parts of Europe may have lost momentum for now.

Apart from discussions on pricing mechanisms, there is a broader debate in Europe about the competitiveness of gas in the energy mix, especially against coal. The gas industry frequently

¹¹⁰ ‘The price [of gas] is so low, there’s so much being produced, and it’s perverting the effort to move renewables into the marketplace [...]. The government has a role. The government has always picked winners and losers in energy [and] is there to benefit the general population. They need to work to balance things [to meet] the long-term benefit of the State and the nation.’ [Russel Smith, Executive Director of the Texas Renewable Energy Industry Association.](#)

¹¹¹ ‘We don’t expect that natural gas is going to be killing renewables, in fact we think there is a dynamic partnership there and that they are perfectly complementary.’ Andre Peterhans, Manager of Strategic Planning at Chevron, see <http://breakingenergy.com/2012/10/24/chevron-strategist-predicts-end-of-too-cheap-2-natural-gas/>.

¹¹² ‘Natural gas represents a tremendous competitive advantage for American industry that must be nurtured. Actions that threaten to return natural gas prices to parity with global oil will jeopardize this once-in-a-lifetime opportunity [...].’ Press releases from Dow Chemical(1) and (2).

¹¹³ ‘Liquefied Natural Gas: Exports - America’s Opportunity and Advantage’, American Petroleum Institute, <http://www.api.org/policy-and-issues/policy-items/lng-exports/liquefied-natural-gas-exports-americas-opportunity-and-advantage>.

¹¹⁴ ‘The European gas consumers pay 2 - 4 times more than their North American competitors. This situation is not sustainable and actions are urgently needed. IFIEC urges EU leaders to take all necessary steps to enable a competitive gas market where the price is set by gas supply and demand instead of oil indexation.’ [International Federation of Industrial Energy Consumers.](#)

¹¹⁵ ‘The damaging effects on European gas demand [...] have been caused, at least in part, by maintaining gas prices at artificially high levels linked to oil.’ [Jonathan Stern, Oxford Institute for Energy Studies.](#)

¹¹⁶ Sergei Komlev, “Pricing the Invisible Commodity”, Discussion Paper, Gazprom Export, January 2013.

indicates that policymakers are not doing enough to ensure that carbon is priced in such a way that allows gas to play a positive contribution in CO₂ emissions reduction efforts. This claim often comes in association with the suggestion that the ETS system does not work and that policymakers should increase carbon prices. Restoring the competitiveness of gas in the power sector is presented as being a key requirement for the EU to develop a low-carbon energy system cost-efficiently.¹¹⁷ Some representatives of the European Commission have expressed a different view, showing that the coal industry manages to be competitive within the ETS system and calling on the gas industry to take the necessary steps to address the issue of prices.¹¹⁸

In Japan, the cost of LNG supplies, its ‘large negative impact [...] in terms of a large trade deficit’ and the ‘heavy burden on the people and energy-intensive industries’¹¹⁹ are strong issues of concern which pushed the government to develop a new gas strategy in April 2014. After the Fukushima disaster in 2011, the role of gas has significantly expanded for mid-load power generation. This additional need for LNG imports has contributed to tightening the global LNG market and, combined with the rise of oil prices, has led to a sharp increase of the LNG import price to Japan. Acknowledging stakeholders’ concerns about the “Asian premium”, the government has put forward a series of initiatives to review the LNG procurement framework. These include encouraging Japanese companies to invest in upstream projects or to conclude strategic alliances to reinforce their bargaining power, such as the one signed between TEPCO and Chubu Electric. The oil price drop since mid-2014 brought excellent news for Japanese buyers, but because it might only be a brief respite the fuel procurement review remains a key pillar of Japan’s economic policy known as “Abenomics”.

Following the North American shale gas revolution and the Fukushima disaster, regional gas prices were increasingly disconnected, with the US and the Asian prices at the two extremes, fostering debates on what price levels were appropriate for each market, taking into account the price of competing fuels. Today, the downtrend is visible in all consuming regions and debates are likely to be reformulated. This could ultimately lead to a more global questioning on whether these decreasing prices will actually affect world supplies and investments.

¹¹⁷ http://www.eurogas.org/uploads/media/Eurogas_Press_Release_-_Drop_in_2013_EU_gas_demand_emphasises_need_for_swift_change.pdf.

¹¹⁸ ‘There has been a failure of the gas industry to address the issue of price; no one has dealt with the issue of pricing within the European Union, except indirectly—by saying that the price of CO₂ should rise, so that there is space for gas in the market [...] The coal industry is competitive [and is] working within the emissions trading system (ETS). The fact is, the gas industry with its present pricing, obviously is uncompetitive and still acting within the ETS. There needs to be some reflection by the gas industry about its pricing policies. Statoil is leading the way [...] There’s no appetite for raising the carbon price in this Parliament in order to allow for space for gas to have an indirect subsidy for its operation in the market, and I don’t see that changing.’ Brendan Devlin (DG Energy), see <http://www.naturalgaseurope.com/gasnaturally-gas-week-2013-brendan-devlin>.

¹¹⁹ <http://www.meti.go.jp/press/2013/09/20130910002/20130910002-2.pdf>.

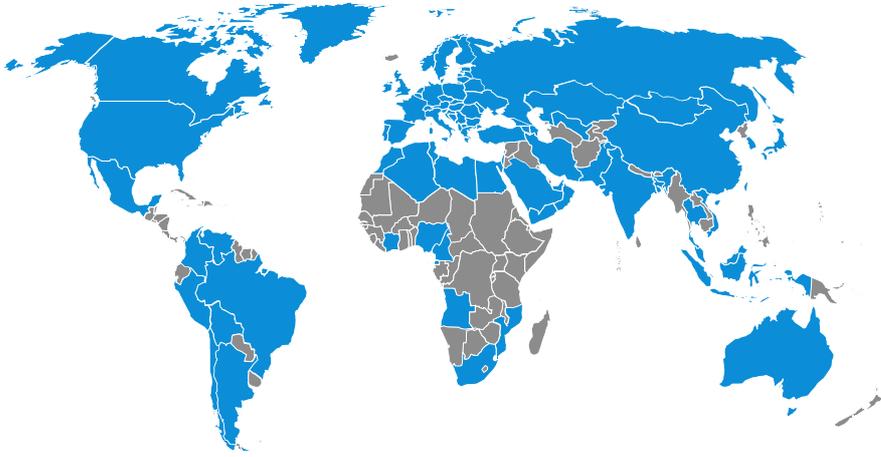
4. CONCLUSION

Since the 2012 report was issued, geopolitics has remained centre stage and has perhaps even gained in importance. The “areas of geopolitical interests” listed above illustrate that in a rapidly changing world, energy continues to play a decisive role in shaping the course of events and remains a key factor in the competition between powers.

The geopolitical dimension of natural gas is evident. As for the other fossil fuels, the unequal distribution of endowment can generate tensions between state actors which each claim the right to control and exploit the resource, as observed in the Arctic and the South China Sea. While the share of natural gas in the world energy mix is rising, strategies to maximise production and exports can be delayed, especially by domestic challenges and security concerns, as seen in Nigeria, Iraqi Kurdistan and North Africa. Recent developments in EU-Russian relations illustrate that regional ties are still strong, despite LNG’s contribution to the globalisation of the gas trade. As a result, security of supply, transit and demand are given significant attention. Because trade in natural gas creates (inter)dependency, it can interfere with broader diplomatic considerations. The negotiations over the removal of the sanctions on Iran are a perfect example of how the potential for trade in gas and energy needs to be assessed in the larger diplomatic context. While natural gas fuels geopolitics, its further development is also contingent upon geopolitical shifts.

Because the world is changing rapidly as a result of globalisation and especially due to the rise of the internet, the geopolitics of gas can no longer be seen as restricted to the interrelations between governments and the national and international companies directly involved in producing or buying gas. The business is increasingly influenced by the actions of other stakeholders who are not directly involved in gas trade but are impacted or concerned by this activity.

While many aspects trigger stakeholder reactions, issues related to the environment generate the most active involvement. Strong arguments can be put forward to promote the role of gas in a long-term strategy towards decarbonisation. However, these do not seem to have found support within stakeholder groups, nor have they significantly been adopted in policies to limit climate change. In this challenging landscape, mitigating adverse stakeholder reactions can only be accomplished through enhanced information dissemination. Open dialogues and greater transparency from the industry is necessary in order to clarify the debate on the environmental impact of gas extraction. It is equally important that the gas industry develop partnerships with international organisations to achieve a greater recognition of the added value of gas. The role of gas in combination with renewables, the development of biogas and technology breakthroughs such as CCS are strong arguments for a transition towards the zero-carbon energy system.



The International Gas Union (IGU) was founded in 1931 and is a worldwide non-profit organisation promoting the political, technical and economic progress of the gas industry with the mission to advocate for gas as an integral part of a sustainable global energy system. The IGU has more than 142 members worldwide and represents more than 97% of the world's gas market. The members are national associations and corporations of the gas industry. The working organisation of IGU covers the complete value chain of the gas industry from upstream to downstream. For more information please visit www.igu.org

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