Algeria's shifting gas export strategy: Between policy and market constraints

Hakim Darbouche[*]

NG 48

March 2011

[*] I am grateful to Ali Aïssaoui for the useful comments he provided on an earlier draft. The editorial comments of John Elkins helped refine the final version of this text. Any mistakes, in fact or interpretation, remain my own.

ISBN

978-1-907555-21-3

Preface

Given the importance of Algeria as a supplier of gas and LNG to Europe, there is a surprising lack of accessible research on the country's gas industry and prospects. This paper deepens and updates the export dimension of Hakim Darbouche's chapter in the Institute's recently published book on Middle East and North African gas markets. Hakim is fast establishing himself as the leading academic on North Africa gas issues and this paper is a welcome addition to the Gas Programme's research on the region.

Jonathan Stern, Oxford March, 2011

Introduction

Under former energy minister Chakib Khelil, Algeria's flagship gas export targets of 85 Bcm/yr by 2010/2013 and of 100 Bcm/yr sometime thereafter were the focal point of intense gas industry commentary, especially in the wake of the 2006 amendment of Hydrocarbon Law 05-07. This scrutiny was the corollary of the widespread view that Algeria's ambitious export expansion policy was likely to face added challenges in the context of the post-2006 legislative reversal, which in part had led to a conspicuous disconnect between the upstream and downstream gas business segments. That perception was also somewhat fuelled by the Khelil administration's voluble communication strategy, which brought more confusion than reassurance over the prospects for achieving those export targets.

Just as it became evident towards 2007-8 that, under the prevailing conditions, those targets were definitely out of reach, attention shifted towards the impact that the recession-induced fall in European gas demand was having on Algerian exports, as well as towards Sonatrach's response to the emerging shifts in the fundamentals of gas trade on the European market. With Khelil and his team apparently unable to devise a convincing gas marketing strategy in the face of these changing market conditions, the uncertainties facing the Algerian gas (and energy) sector were thrown into sharper focus, warranting a change of internal direction at the helm of Sonatrach and the energy ministry.

Going forward, a string of gas sector challenges (still) await new energy minister Youcef Yousfi,[i] as well as the new management team at Sonatrach. These pertain to the need for investment, particularly in the upstream and midstream segments, and require urgent policy action, especially in relation to exports. Algeria's gas export performance in 2010 raised many questions about its short- to medium-term gas marketing strategy, relative to issues of oil-indexation in Continental European gas supply contracts, market share, spot prices and producer cooperation, LNG sales, and capacity utilisation, official answers to which remain in short supply. This paper attempts to shed light on the most important of these questions, revisiting the main drivers of Algeria's gas marketing strategy and identifying the policy choices the new energy administration has been, and will be, confronted with in the years ahead.

Algeria's gas export policy under Chakib Khelil

It is well known that Algeria's hydrocarbon potential has invariably been more "gassy" than "oily", with natural gas representing two thirds of the country's hydrocarbon reserve base. From the late 1990s, gas has accounted for 40-50% of total hydrocarbon exports by volume and 25-45% by value. In turn, hydrocarbons account typically for 97-98% of Algeria's export revenues. This has meant that exports of natural gas have constituted a key variable in Algeria's macroeconomic balance, in addition to bearing added geostrategic significance for the country's international relations.

Upon coming to office in 1999, the administration of President Abdelaziz Bouteflika, of which Chakib Khelil was a prominent figure, decided amongst other things to ramp up hydrocarbon output and exports, as part of a wider plan to reconstruct the economy and restore Algeria's international standing following a decade of internal civil and political turmoil. As far as natural gas was concerned, the objectives set by Khelil consisted of increasing exports to 85 Bcm/yr by 2010, from the newly-achieved level of 60 Bcm/yr, and to 100 Bcm/yr by 2015. These targets were to be reached by, on the one hand, expanding existing and constructing new capacity downstream and, on the other, by encouraging increased investment in the upstream, particularly from international oil companies (IOCs).

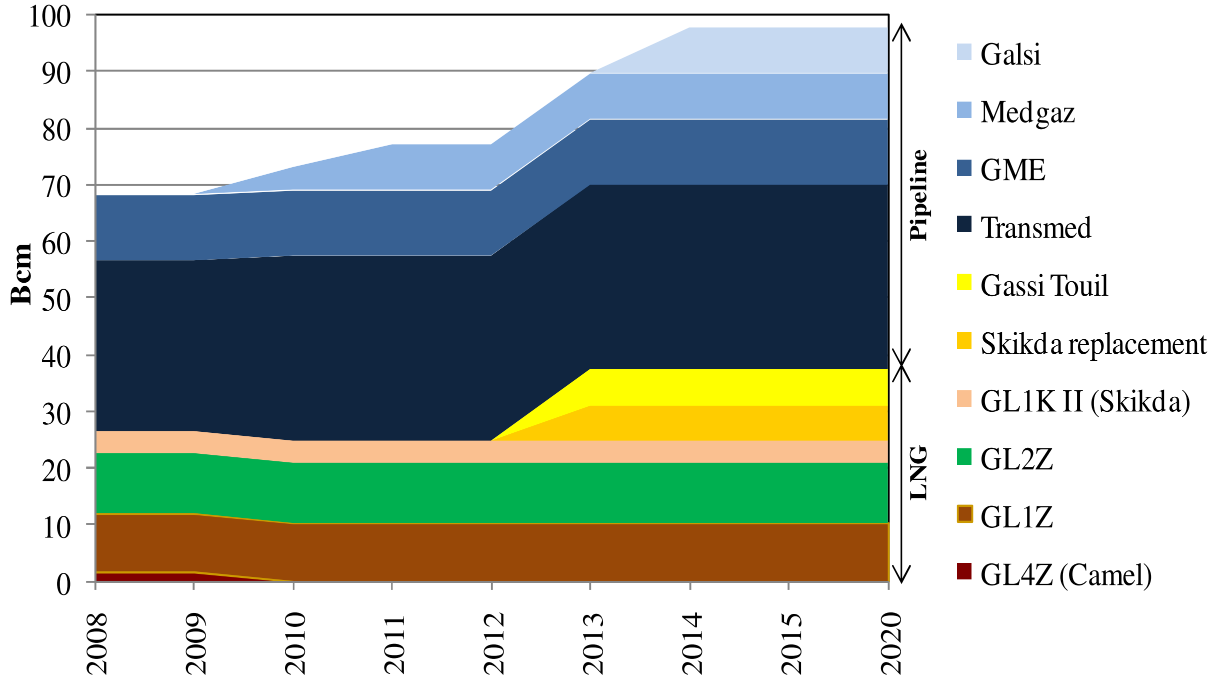
Another important dimension of Khelil's gas export policy concerned Algeria's national oil company Sonatrach and its vertical integration along the gas value chain, both domestically and in export markets. Prior to the 2000s, Sonatrach exported most of its gas, both pipeline and LNG, on a FOB contractual basis, but a notable policy shift occurred under Chakib Khelil as far as this aspect of the national company's gas marketing strategy was concerned. Encouraged partly by the gradual opening up of downstream European gas markets, Sonatrach sought greater access to end-users through the construction of direct subsea gaslines to southern Europe (Medgaz and Galsi), as well as building up an integrated downstream capacity and portfolio in its main markets (Spain, Italy, France, the UK, Portugal, and the US).

Commercially, this change of strategy aimed to allow Sonatrach, in the face of fast-unfolding EU gas market liberalisation and greater supply competition, to capture higher margins from its gas exports and secure its position on southern European markets and the Atlantic Basin. It was met with notable successes in the early period of its implementation. During the tight global LNG market of the mid-2000s, up to 15% of Sonatrach's LNG was sold on the spot market, with valuable financial rewards accruing to the company. But its limitations soon became too apparent, especially as the new strategy appeared to have diverted policymakers' attention away from the "bigger picture" of how the Algerian gas sector should be organised post-2006.

In terms of upstream development, the new hydrocarbon law that was introduced by Chakib Khelil in the early 2000s was central to his plans to unlock Algeria's increasingly challenging upstream gas potential and ultimately ramp up production and exports. No significant *new* reserves of gas had been discovered and developed in Algeria since the 1990s,[ii] and it had become clear that, in a context of ambitious gas export and aggressive depletion policies, action was needed to both enhance the E&P capabilities of Sonatrach and attract the foreign investment necessary to achieve the desired objectives. The new hydrocarbon law aimed to achieve both but, by Algerian energy-sector standards, it took things too far in the way of reform. The envisaged liberalisation of the upstream and other segments of the hydrocarbons industry, the proposed radical changes to Sonatrach's traditional state-entity role and the far-fetched prospect of its (partial) privatisation met with fierce resistance both from within the Algerian energy industry and from the political class more generally.

The eventual rescinding in 2006 of these reform efforts, in favour of a more "nationalist" approach, leading within production sharing contracts to tougher fiscal terms and a reinforced role for Sonatrach as the state-owned national oil & gas company, dealt a serious blow to the gas development plans of the Khelil administration. These were further undermined by the two-year hiatus in the enactment of the amended Law 05-07, as well as the hold-up caused by the Gassi Touil LNG-project delays.[iii] In the face of these upstream setbacks, to which one might add the earlier loss of liquefaction capacity at Skikda in 2004,[iv] Algeria still maintained its gas export targets, albeit with the 85 Bcm/yr objective pushed back to 2013 (Figure 1).

Figure 1: Planned expansion of Algeria's gas export capacity



Source: Sonatrach and own estimates

This raised many questions, considering that the resulting disconnect between upstream activity and downstream objectives meant that, even as early as 2013, gas supply was unlikely to be sufficient to meet fresh export commitments and growing domestic gas requirements – the latter had been growing at a faster rate in the 2000s (about 4% per annum on average). What's more, from a national economic perspective, Algeria no longer urgently needed additional revenue from gas exports because its hydrocarbon revenues had increased significantly as a result of the higher oil prices, allowing the country to pay off almost all of its $25 billion external public debt by 2006 – although admittedly, of course, Sonatrach's investment decisions are also driven by market and commercial considerations, which involve longer timeframes than national political and economic policy agendas.

Concretely, this meant that final investment decisions for the expansion of the Transmed pipeline to Italy and the construction of the Medgaz direct subsea gasline to Spain went ahead in late 2006. Even with the absence of foresight by decision-makers on the delayed enactment of the amended hydrocarbon law, the subdued results of the upstream licensing rounds in 2008-09, and the impact these setbacks had on the development of new gas fields, it must have been evident back then that, if completed on schedule, the new pipeline capacity would risk being under-utilised – or completely unutilised – given the time it would take anyway for first gas to be brought on stream from fields in the remote southwest "frontier" of the Algerian upstream. With hindsight, these decisions look even clumsier, given the impact of the recession-induced decline in European gas demand on Algerian exports.

Algeria's gas export performance in 2009

Before the admitted slippage in the schedule of the 85 Bcm/yr gas-export target, 2009 had been expected to see the completion of Medgaz, the Gassi Touil integrated LNG project, and the expansion of the Transmed pipeline's capacity to 32.5 Bcm/yr. But that was not to be. Instead, 2009 was the year in which Algerian gas exports fell to just over 52 Bcm, their lowest level in a decade.

The abrupt 11% year-on-year drop recorded in 2009 was caused in large part by the decline in gas demand on Sonatrach's main European export markets, which in turn was due to the economic recession that was triggered by the 2008 financial crisis. Gas demand in OECD Europe was down by over 5% on 2008 levels, with consumption in Spain and Italy falling by about 10% and 8% respectively. As a result, Algerian pipeline shipments to its main outlets, Spain and Italy, were reduced by over 17% and 12 % respectively, with overall exports to Europe dropping by over 7% compared to 2008 levels.

By contrast, Algeria's 2009 LNG exports to Europe were up 6.6% on 2008 levels, representing an additional volume of 1.3 Bcm. This growth was driven mainly by a more than threefold increase in sales to the UK (+1.3 Bcm) and by 5.9% to Spain (+0.3 Bcm). However, overall Algerian LNG exports dropped by 4.4% in 2009, as sales to the Far East fell to 0.24 Bcm from their 2008 level of 2.5 Bcm.[v]

This does not correspond to the statement made by Chakib Khelil in October 2009, asserting that Algeria had cut its LNG output by 10% because of reduced offtake on its main markets rather than force majeure or other issues.[vi] The dip in Sonatrach's 2009 LNG sales compared to a year earlier was more important for spot markets in Asia than for long-term contracts with European buyers. And it is important to note that, after peaking in 2007, Sonatrach's spot LNG sales had been falling steadily, especially following the decision that was made that year not to sell flexible LNG volumes to the US market for as long as Henry Hub prices remained relatively weak. Thus, a decision may have been made to reduce LNG production, with implications for and reflecting slightly lower shipments under long-term contracts with ENI, DEPA and Botas. But it appears that the main cause of the fall in Algeria's 2009 LNG exports originated in the force majeure issues that were reported in the first half of the year as a result of midstream problems relating mainly to feed pipelines. It has become well-known that chronic underinvestment has led to recurrent problems of corrosion and infrastructure integrity, with parts of Algeria's extensive gas pipeline network unable to handle the growing throughput of sour gas.[vii]

In reality, it was Algeria's pipeline gas exports that suffered the most from slack demand in Europe in 2009. As mentioned above, pipeline shipments to southern European buyers fell by more than 14%, from just over 35 Bcm in 2008 to 30 Bcm in 2009. According to Cedigaz, Spain's Gas Natural lifted 6.94 Bcm through the GME pipeline, while Italy's ENI and ENEL received 21.37 Bcm through the Transmed. Portugal and Slovenia imported 1.33 Bcm and 0.38 Bcm, respectively.

What appears to have happened is that, in the cases of Spain and Portugal, Sonatrach allowed its long-term contract customers, Gas Natural and Transgas, to lift less than the minimum take volumes without incurring payment liabilities for the shortfall. The Annual Contract Quantity (ACQ) in Sonatrach's sales and purchase agreements (SPA) with Spain's Gas Natural is believed to be 9 Bcm. 6.94 Bcm is only 77% of the ACQ, in other words well below the assumed 85% minimum take-or-pay volume stipulated in the contract. Similarly, the 1.33 Bcm imported by Portugal's Transgas represents just over 56% of the ACQ stipulated in its 1997 SPA with Sonatrach.

Quite apart from being a response to changing gas market conditions in these countries, the flexibility shown in 2009 by Sonatrach in relation to take-or-pay clauses in its long-term gas pipeline supply contracts to some extent also reflected the tight gas supply-demand balance prevailing in Algeria and – concomitantly perhaps – an inclination to withhold gas from an oversupplied European market. This was an early indication of Sonatrach's marketing strategy in the post-recession European gas market – a strategy that began to play out more clearly in 2010.

Algerian gas at a crossroads

For Sonatrach, 2010 began with a major investigation into allegations of corruption targeting the national company's top management. Suspicions of wrongdoing in relation to a number of procurement contracts led to the suspension and, in some cases, arrest of more than a dozen Sonatrach executives, including the CEO and three of the company's four executive vice-presidents.[viii] No sooner had the investigation by the Algerian security services been made public than various interpretations of its putative political motives were put forward, pointing for the most part towards a possible power struggle between the military high command and the presidency. While most of these rumours proved unfounded, it remains the case that issues of mismanagement within Sonatrach became increasingly associated with the contested overall governance and policymaking style that had characterised the Algerian energy sector in the 2000s and that a broad-based consensus about the need for change at the helm of Sonatrach and the Energy Ministry had been emerging.

The Sonatrach "scandal", as it became known, eventually cost Chakib Khelil his ministerial position and sent shockwaves through the Algerian national oil company and energy sector more broadly. Besides the reputational damage suffered by Sonatrach, its business activities were also affected, with decision-making structures paralysed for most of 2010. Though the extent of the short-term damage is difficult to assess, it can be safely assumed that the delays in decision-making and the resulting corporate and regulatory changes will have longer-term implications for important projects and policy targets.

Commercially, 2010 saw Algeria and other members of the Gas Exporting Countries Forum (GECF) express growing concern over weak prices of spot gas at the traded hubs in North West Europe and the pressure this has created for removal of the traditional oil-linkage in Continental European long-term supply contracts. As the gap between hub-based and oil-linked gas prices widened in 2009-10, calls began to emerge from within the industry for the need to rethink the rationale of gas pricing in long-term supply contracts and to encourage a transition away from oil product-related pricing and towards a new mechanism that is more reflective of the fundamental changes that have taken place in the European gas market in recent years.[ix] Conflicting views on the issue of changing the price structure have by and large pitted producers against consumers, with on the one hand companies like Gazprom, Statoil, Sonatrach, and Qatar Petroleum opposing any radical moves away from the status quo, and on the other European energy utilities advocating a shift towards hub-based pricing.

Unlike its main competitors, Gazprom and Statoil, which in defence of their market share in Europe agreed with their main buyers to temporarily allow a reported 15% of gas price indexation in their existing contracts to be based on European spot prices, Sonatrach has so far shown much less flexibility on pricing issues. Its main customers in Italy and the Iberian

Peninsula are much less exposed to competition from cheaper supplies from North West European hubs, which is why – at least in the case of Gas Natural – the issue was in the first instance related to weak demand and contractual take-or-pay volumes, to which Sonatrach was more responsive.

In any case, it seems unlikely that Gas Natural would have demanded in 2008-10 any reductions in the price of pipeline gas it receives from Sonatrach because of its dispute over pricing with the Algerian company from 2007. But what is certain is that Sonatrach's position in relation to this issue will have been reinforced by the arbitration court ruling in summer 2010, giving the Algerian company the right to increase the price of gas supplied to Gas Natural through the GME pipeline and to receive a reported $2 billion in compensation, representing under-payment for deliveries between 2007 and 2009.[x] The dispute emerged in 2007 when Sonatrach invoked the price-review clause in its supply contract with Gas Natural, seeking an estimated 20% increase in the price of its pipeline gas in view of the prevailing market conditions at the time (higher oil prices leading to higher gas prices), but the two companies failed to reach an agreement.

This pricing dispute is not particularly instructive of Sonatrach's attitude vis-à-vis the broader debate about oil-indexation in long-term gas supply contracts, given the different contexts in which these separate issues emerged. Nevertheless, its outcome in terms of whether Sonatrach will go ahead with raising the price of its GME gas supplies to Spain following the arbitration court ruling will be indicative of its policy towards current gas pricing issues. Talks between the two companies are believed to have been broached shortly after the arbitration panel's decision was made public, but bilateral negotiations risk being protracted.[xi] ENI, for its part, announced that it would begin price negotiations with Sonatrach in the first quarter of 2011,[xii] while GDF Suez appears to have so far failed to find common ground on this issue with the Algerian company.[xiii]

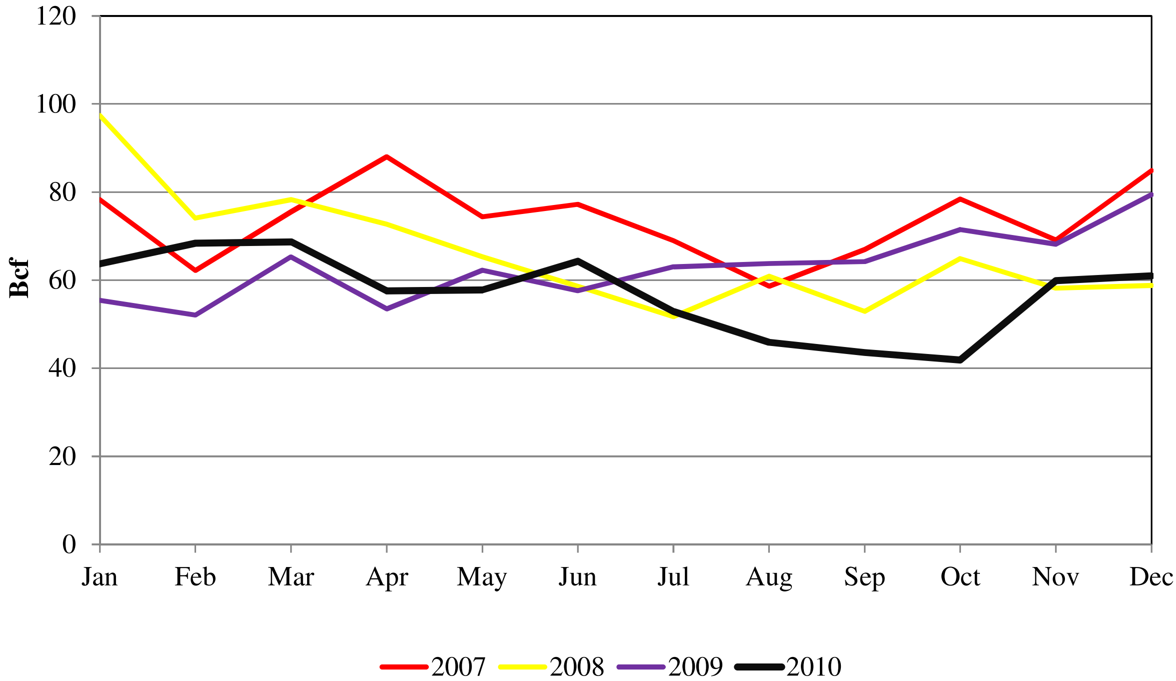
The clearest indication yet of Algeria's attitude towards the growing pressure from buyers to move away from oil-linked gas pricing came in the form of an attempt within the GECF to spearhead coordinated action on spot supply with the aim of restoring balance on gas and LNG markets and achieve "gas price parity with oil".[xiv] Orchestrated by the outgoing Chakib Khelil, Algeria's effort caused widespread fears of the implied emergence of a "gas OPEC", but appear to have failed to gain any traction within the GECF. Key gas exporters Russia and Qatar were prompt to rule out the possibility of withholding supplies from the market,[xv] confirming the existence of diverging interests – in terms of market share, gas export project costs, structures and shareholder priorities – between key GECF players. However, it is important to note that the way in which the Algerian initiative was publicised by the domestically-embattled Chakib Khelil, who appeared to have been more concerned with his fall from favour inside Algeria than the broader reputational implications of his approach, is likely to have made Qatar and Russia's public rebuff inevitable. This faux pas undoubtedly precipitated Khelil's departure from government, but it takes nothing away from the underlying substance of Algeria's concerns, shared by Qatar and Russia,[xvi] over weak spot gas prices and their implications for the future of oil-indexation.

LNG exports in 2010 and Algeria's shifting gas export strategy

With the arrival of Youcef Yousfi in May 2010, Algeria's gas marketing strategy became much more proactive. LNG sales in the first half of the year were up by over 30% compared to the corresponding period in 2009. However, monthly LNG production declined drastically between June and October 2010, falling from about 64 to 42 Bcf (1.8 to 1.2 Bcm), or around half Sonatrach's installed liquefaction capacity. Although monthly LNG output recovered to about 60 Bcf (1.7 Bcm) in the last two months of the year (Figure 2), the drop in the third quarter meant that Algeria's 2010 LNG exports amounted to just under 20 Bcm (compared with an installed capacity of about 25 Bcm/yr), their lowest level in almost 15 years.

Seasonal maintenance alone could not account for the significant fall in Algeria's LNG output, and a number of explanations can be advanced, based on the fact that this unusual LNG export performance by Algeria coincided with three major developments. First, rumours about water encroachment at Hassi R'Mel, Algeria's biggest producing wet-gas field and the linchpin of its upstream gas industry,[xvii] were reported in the Algerian press and relayed internationally, raising many questions about the issue of depletion at the field. Second, the testing phase of the onshore section of the Medgaz pipeline began over the summer,[xviii] resulting in the feeding of unspecified volumes of gas into the pipeline system. Third, the coming into office of a new energy administration was largely expected to translate into changes of gas policy direction, leading perhaps to a reversal of some of the policies pursued under Chakib Khelil.

Figure 2: Algerian monthly LNG exports, 2007-2010



Source: Waterborne LNG

Speculation about the existence of sinister technical problems at Hassi R'Mel was soon refuted by Noureddine Cherouati, Sonatrach's new CEO,[xix] who nonetheless pointed out that the management of a mature field of this size was bound to be challenging. The fact that LNG production recovered to a certain extent in November-December 2010 confirmed that, if the earlier decline was due to a lack of gas feedstock availability, then the latter was clearly not as permanent as would have been the case had Hassi R'Mel's production capacity been severely damaged by water encroachment. At the same time, given the tightness of gas supply in Algeria and the fact that Hassi R'Mel can no longer act as a "swing field" through the process of reinjection and natural gas liquids (NGL) recovery, the start of the Medgaz testing phase will most probably have had a constraining impact on the availability of feedgas for LNG exports. This lends credence to the "Medgaz testing" explanation, but perhaps only to some extent, given that the volumes required by, and the duration of, the operation are unclear.

The last piece of Algeria's declining LNG export puzzle slotted into place when Ali Hached, Algerian Energy Ministry official in charge of gas policy, confirmed that a decision had been made by Youcef Yousfi's administration to show more decisiveness on the issues facing Algerian gas exports. "We're not selling on the spot market…that's all. Why should we make the effort so others reap the benefits of the situation [of weak hub prices]", he told reporters in October 2010.[xx] This appeared to make sense to some watchers of the Algerian gas market, who argued that domestic demand growth in 2009-10 was slower than previously anticipated (3-4%) because of delayed downstream projects. Thus, it could not have caused major feedgas problems, especially since pipeline exports had not fully recovered in 2010. They added that the midstream problems that hampered LNG production in 2009 were largely resolved by the end of that year. This view was supported by reports that Sonatrach had requested its upstream IOC partners to reduce their share of production,[xxi] reflecting its decision to hold back exports and at the same time avoid paying IOCs for gas it would otherwise have to sell domestically at a lower price or to re-inject in oil/gas fields.

Indeed, data from Waterborne LNG shows that, in the second half of 2010, Sonatrach only sold six cargoes on the spot market, sending three to the UK's Isle of Grain terminal – compared to an average of 2-3/month in the first half of the year as well as in the corresponding period in 2009 – and the other three, for the first time ever, to Chile. Only one spot cargo was sent to the Far East (Japan) in the entire year. In addition to this, with the exception of Greece and Italy, LNG sales on long-term contracts with European buyers (France, Turkey and Spain) also fell compared to 2009 levels, although apparently not below minimum take-or-pay levels.

Other observers questioned the viability of the decision enunciated by Hached, referring to healthier netbacks in Asia and the UK in the third quarter of 2010 ($6-8/MMBtu) and the fact that Sonatrach had shown willingness in the past to trade spot LNG in similar market conditions and that it had indeed sent a cargo to the Isle of Grain in December 2010 (two months after Hached's statement).[xxii] Hached did not say *all* spot LNG sales were suspended, but his assertion raised the following question: what is the threshold price below which Sonatrach would not sell spot cargoes, and does it apply to all markets or just the European market? Given the new LNG export capacity coming online in Qatar and the amount of surplus gas floating around in the market, there were also doubts about the effect on gas market fundamentals and prices that Sonatrach's apparently single-handed supply cuts could have.[xxiii]

However, it would seem that Sonatrach's spot marketing strategy is not exactly aimed at changing the fundamentals. It would be aware that nowadays its actions could only have a limited effect on prices, if any, with suppliers like Qatar bringing huge new volumes to the market. Rather, the rationale behind this decision would be as follows: given the tight domestic gas supply situation and the declining reserves-to-production ratio in recent years, gas should either be kept in the ground or used for reinjection purposes for as long as selling it on the spot market is perceived to be less rewarding. This attitude is informed by the fact that:

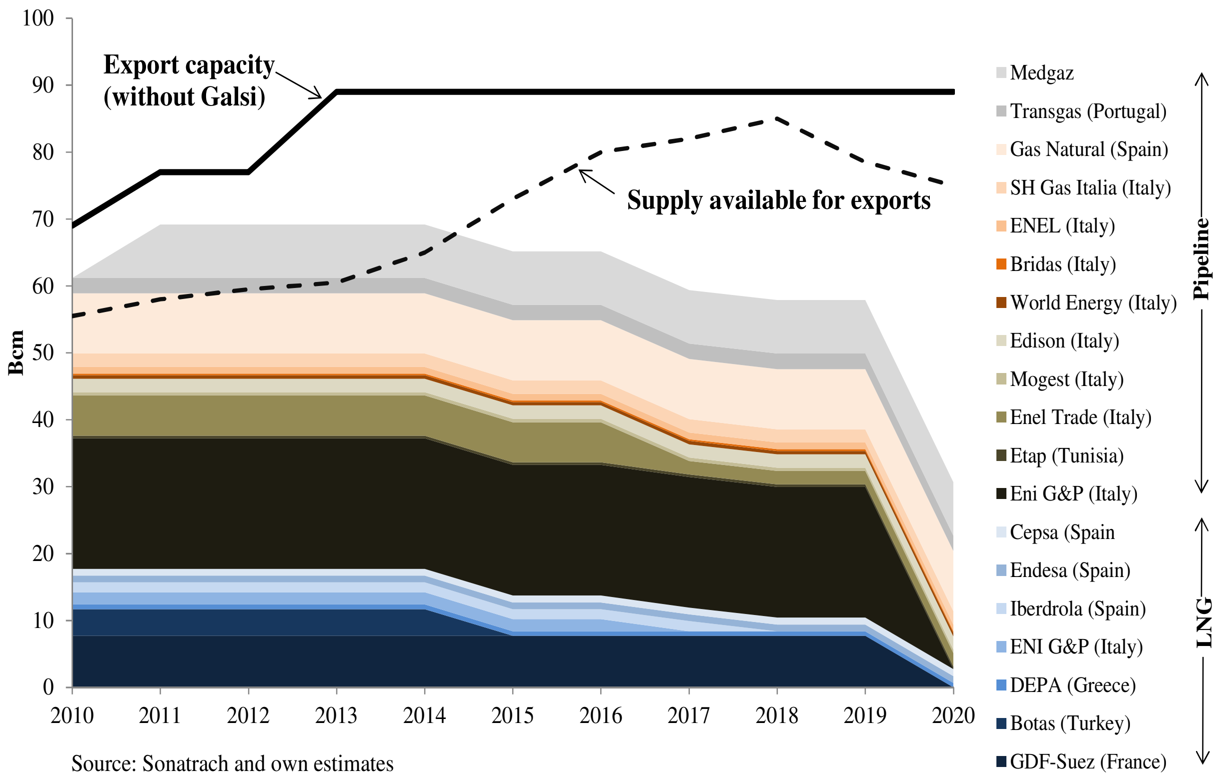
a) most of the existing LNG infrastructure in Algeria has been amortised;
b) Sonatrach owns the gas feedstock and the entire LNG value chain;
c) the margins realised from LNG sales on long-term contracts, representing around 65% of nominal capacity, cover all factor costs and provide sufficient income for future investment; and
d) the Algerian state's finances are sufficiently healthy.

In short, Sonatrach's LNG marketing strategy seems to be partly driven by necessity (tight gas supply) and partly informed by principle (no spot sales below a given price).

Algeria's gas marketing strategy in the early 2010s: Tough times ahead

Up to 2013-14, the gas supply situation in Algeria will not improve significantly. Only one new field, Menzel Ledjmet East, will be brought on stream, bringing an estimated 2.5-3 Bcm/yr of gas to market by 2012. Subsequently, however, a string of new fields (Ahnet, Timimoun, Reggane, Touat, Hassi Bahamou, Hassi Mouina, Zerafa, Djebel Hira, Tinhert, Bourarhet, CAFC, Aïn Tsila [Isarene], Gassi Touil) are expected to enter into production,[xxiv] boosting Algeria's net output of gas by an estimated 40 Bcm/yr by 2018-20 (Figure 3).

Figure 3: Sonatrach's portfolio of gas supply contracts and projected supply



Source: Sonatrach and own estimates

The timely development of these fields depends on foreign investor interest, which in turn hinges on the attractiveness of investment terms, the timely delivery of permits by Alnaft (Algeria's upstream licensing authority), the operational capacity and efficiency of Sonatrach, and its ability to build the necessary infrastructure. Furthermore, the effective management of the depletion of mature fields such as Rourde Nouss, Alrar, Hamra and, most importantly, Hassi R'Mel, will be crucial to Algeria's future production profile, as it will define the amount of gas required for reinjection into these wet gas fields. The development of new oil fields, most notably El Merk, which is expected to come online in 2012, should also lead to a reduced reinjection rate into the mature oil fields. New discoveries in the prolific Berkine Basin and other underexplored areas southwest of Hassi R'Mel are also likely to improve the prospects for Algerian gas production. Domestic demand is expected to grow at an average annual rate of 4-5%, at least until 2014-15. The recent political unrest in North Africa will only reinforce the government's longstanding hesitation to tackle the rationalisation of demand through improved pricing policies.

The resulting gas balance in Algeria will leave Sonatrach with limited options with regard to a set of important gas-marketing decisions, some of which it has already had to make in the recent past, while others will loom large over decision-makers up to 2014-15. These decisions pertain to market share issues, buyer pressure on oil-linked gas prices, the commissioning of Medgaz, LNG supply contracts, and the Galsi final investment decision (FID).

Market share. Confronted with the inability to ramp up exports to Europe as a result of the tightness of its gas supply, Sonatrach knows it will be unable to maintain market share in the face of growing competition from other exporters. This applies to its position in southern European markets – with the exception perhaps of Spain – the UK and other North West European markets. This means that Sonatrach's immediate interests lie in the maximisation of the value of its exports, regardless of the impact that might have on its market share. This represents a significant shift of focus in Algeria's gas export strategy, which in the past was to a large extent predicated on the sacrosanct principle of market share. Concretely, these considerations will define Sonatrach's position towards its current standoff with Gas Natural, in the sense that it will most certainly want to see the Spanish company pay the compensation awarded by the arbitration court, and more broadly towards its customers' demands to revise gas pricing in its long-term supply contracts.

Oil indexation. Following on from the shift towards value maximisation in Sonatrach's gas marketing strategy in the short-term, it is hard to expect flexibility on the issue of oil-indexed gas prices to be shown in relations with pipeline buyers such as ENI, although ultimately it is the costs and benefits of this and alternative strategies that should define Sonatrach's policy in relation to this issue.[xxv] So far, Sonatrach's position has also been informed by the fact that the exposure of Sonatrach's main customers to hub-priced supplies from North West Europe remains relatively limited, as well as the view – not unique to Sonatrach – that hub-based and oil-linked prices are likely to re-couple again as a result of the anticipated tightening of the global demand-supply balance by 2012-14. Until then, Sonatrach may be more willing to show flexibility on minimum contractual volumes, as seems to have happened already with Gas Natural and Transgas in 2009. This would relieve it of some of the supply pressure it is facing and allow it to reallocate its gas among and between domestic and international markets.

Future spot trading patterns should provide a clearer indication of the main drivers of Algeria's LNG marketing strategy. At the same time, it is unclear whether Algeria will seek greater influence on this and other issues within the GECF, but it is certain that it would try to be more discreet about such actions.

Medgaz. Repeated delays in the start up of Medgaz, from the end of 2009 to the second quarter of 2011, were attributed to technical issues, while Sonatrach and other Medgaz shareholders appeared in no hurry to deal with these hiccups. The fall in Spanish gas demand as a result of the economic recession, limited interconnections between Spain and France, and tight gas supply in Algeria meant that the delays in commissioning the pipeline served by default the interests of many stakeholders.

Medgaz supplies will be among the cheapest sources of gas into Spain. The start up of deliveries in 2011 is expected – all things being equal – to lead to the displacement of significant volumes of LNG from the supply stack in Spain. In anticipation of the start of deliveries some of Sonatrach's Medgaz partners have been arranging diversions to other markets of LNG volumes initially committed to Spain. However, as far as Sonatrach is concerned, the start up of Medgaz will put significant pressure on gas supply. In fact, as can be seen in Figure 3, it seems inevitable that Medgaz shipments will eat into other export availability. Sonatrach's room for manoeuvre is limited, but the following mitigating actions can be envisaged:

- Medgaz initial nameplate capacity is 8 Bcm/yr. Sonatrach has a 36% stake, Iberdrola and CEPSA 20% each, and Endesa and GDF Suez 12% each. All partners have signed up for a pro-rata share of Medgaz supply, giving Sonatrach 2.88 Bcm/yr of capacity, Iberdrola/CEPSA 1.6 Bcm/yr each, and Endesa/GDF Suez 960 MMcm/yr each. The volumes self-contracted by Sonatrach have been earmarked to its downstream subsidiary in Spain, Sonatrach Gas Commercializadora. As things stand, it is highly likely that Sonatrach will be unable to use that capacity.[xxvi] As a result, even after the build-up phase, Medgaz is only likely to run at a maximum 65% of nominal capacity, at least until Sonatrach has more supply available for exports.

- Sonatrach supplies LNG on long-term contracts to all the Medgaz partners. It has an estimated 7.7 Bcm/yr supply contract with GDF Suez; 1.5 Bcm/yr with Iberdrola; 1 Bcm/yr with Endesa; and 1.03 Bcm/yr with CEPSA. Sonatrach is likely to seek to optimise its LNG commitments with Medgaz buyers with Medgaz pipeline gas. This, in the short-term, should allow it some breathing space on the supply side and in the longer-term to divert those LNG volumes to premium markets. The Spanish partners should also see merit in this, as it would allow them to offset the risk of oversupply on the Spanish market.

LNG marketing strategy. Sonatrach's new LNG trains (Skikda replacement and Gassi Touil) are expected to be completed by the end of 2013, adding a combined 9.2 mtpa (12.6 Bcm/yr) to Algeria's LNG production capacity. Both trains have been built under EPC contracts awarded by Sonatrach without any IOC involvement. The most significant aspect of Sonatrach's decision to proceed on its own in the construction of these LNG plants relates to its opting out of concluding long-term, oil-indexed supply contracts prior to making a FID on both projects. This decision was driven by Khelil's preference in the mid-2000s for short-term LNG trading, which he perceived at the time to offer better flexibility and higher-value sales for Sonatrach. However, with the turning of market conditions and the coming to office of a new leadership at Sonatrach and the energy ministry, the search for long-term buyers has become a priority. This certainly applies to Gassi Touil which, as an integrated LNG project, has dedicated upstream reserves, but is much less certain for the Skikda train.

In a buyer's market and in the face of stiff competition from other suppliers, being able to find markets by 2013-14 is far from being a straightforward task. Whether these outlets are in

Asia, South America or are “niche” markets, Sonatrach will have to compete with Qatar, and a whole host of other LNG exporters (including the US), who may be more likely to be in a position to offer aggressive petroleum product-indexation slopes. If Sonatrach is unable to find new markets, it will most certainly seek to renew its existing long-term supply contracts with buyers in South East Europe (Turkey and Greece).

Moreover, given that Sonatrach is highly likely to be sitting on spare export capacity over the next decade (Figure 3), the marketing of the Skikda volumes will also depend on arbitrage decisions between pipeline and LNG exports. This in turn will hinge on the recovery of demand in southern Europe and how the pricing issue will play out on the European market more generally. Ultimately, the likelihood is that, unless significant new reserves are discovered and developed within the next decade, the new Skikda train will not be fully utilised, with the exception perhaps of when older trains are undergoing maintenance.

Galsi. Based on future Algerian gas supply projections, Galsi is a pipeline project that makes limited commercial sense. Prior to 2020, Sonatrach will be unable to develop enough gas to fill Galsi. Fulfilling the supply commitments made under the recently-completed expansion of the existing Trans-Med pipeline (6.25 Bcm/yr) is, as things stand, in itself highly uncertain. Issues relating to oil-indexed pricing and demand recovery in Italy are likely to complicate this further, although the Italian market has greater interconnection than Spain.

The offshore section of the pipeline is still awaiting FID. Its construction was until early 2011held up by the environmental assessment process on the Italian side. However, the approval by the Sardinian and Tuscan regional governments of the pipeline’s environmental impact study should pave the way for the project to move ahead.[xxvii] The onshore section in Algeria, linking Hassi R’Mel to El Kala on the eastern coast of the country, is under construction and due to be completed by 2012. In addition to Galsi, this 48-inch pipeline is also intended to supply a 1,200MW CCGT power plant at Koudiet Eddraouch.

From the point of view of supply availability, Sonatrach should be inclined not to move forward with the Galsi pipeline project, although this would effectively mean renouncing the 100 Bcm/yr export target. However, considering that it has already sunk in considerable funds in the onshore section (approx. $1.4 billion) and that additional investment would only be required for its share of the offshore section to Sardinia[xxviii] (from where the pipeline becomes part of the Italian national grid), it may end up deciding otherwise. This is especially likely to be the case if Sonatrach – and its Italian partners – is subjected to political pressure to this end. Ultimately, Galsi will only be able to deliver gas into Italy within the next decade if – somehow – non-Algerian supplies (eg. from Libya or Nigeria) transit through the Algerian gas network or if it eats into Trans-Med shipments.

Conclusion

Changing market conditions are increasingly constraining Algerian policymakers' room for manoeuvre in relation to gas export strategy. The policy vicissitudes of Khelil's energy administration left the Algerian gas-export business in a vulnerable position in relation to these changing market conditions. Going forward, redressing this policy legacy can help Sonatrach deal more proactively with the medium- to long-term gas export challenges it will face, but in the short-term policymakers' concerns will be focused on damage limitation.

It has become evident that Sonatrach will not be able to ramp up its gas exports to 85 Bcm/yr by 2013 and, as things stand, will have to renounce any higher export target before 2020. It may be able to export up to 85 Bcm/yr sometime after 2015, but it is uncertain if that level of gas exports can be sustained for long. Chakib Khelil's gas export policy may have had some merits, but it was derailed in 2006 when, as a result of the amendment of the Hydrocarbon Law 05-07, upstream gas development lagged behind downstream expansion, leading to structural incoherence within that strategy. In hindsight, this defect would have been best dealt with by the introduction then of a moratorium on new gas exports, but for many (understandable) reasons that did not happen.

In principle, there is absolutely nothing wrong, or indeed atypical, with revising or deferring policy objectives, especially in the gas industry. But in the case of Algeria's gas export policy it is rather the implicit consequences and challenges of this shortfall that are the main cause of concern. If Sonatrach is unable to fully utilise export infrastructure in which large amounts of public capital have been injected, how is it going to justify the resulting sub-optimal returns from those investments? If the gas supply crunch in Algeria is indicative of the impending depletion of the country's hydrocarbon reserves, what are the likely implications for the Algerian economy, which remains structurally dependent on hydrocarbons?

Until the coming to market of new gas supply in 2014-15, the main driver of Algeria's gas marketing strategy will be the maximisation of the value of exports even if that comes at the expense of market share. In any case, Sonatrach will find it almost impossible to maintain market share in Europe in the short-term. The trouble with this strategy is that it will be played out in a buyer's-market context, so Sonatrach's room for manoeuvre may be more limited than it would otherwise be, and the emergence of major new LNG suppliers could mean that regaining market share subsequently is likely to be more challenging than perhaps initially anticipated.

The new energy administration in Algeria has shown a sense of urgency in trying to address this situation. However, it needs to articulate its policy more clearly, sending unambiguous signals to domestic stakeholders and to foreign partners. If Sonatrach is unable to reach 85-100 Bcm/yr of *Algerian* gas exports within the next decade, it should make clear that this is the basis upon which it is working. The government should also make more concrete its enunciated plans for intensified upstream development of unconventional and offshore gas resources by introducing the necessary adjustments to the investment framework and improving the efficiency of the national oil company. On the demand side, although action has been taken on the deferral of major petrochemical projects, a lot more can be achieved in the way of rationalisation by revising the pricing policy for energy-intensive industries, as well as for the gas-and-power sector. The government spends an estimated $7 billion per year on subsidising gas and electricity for all end-users.[xxix] There is little doubt that a more graduated and targeted pricing policy would help manage gas demand growth more efficiently, while funds currently devoted to subsidies can be put to better use in the mitigation of the effect of higher prices on the poor.

---

[i] Youcef Yousfi, who served as energy minister in 1997-1999, replaced Chakib Khelil in May 2010.
[ii] Ohanet, In Salah, and In Amenas, which were brought on stream between 2003 and 2006, were discovered before the 1990s.
[iii] Gassi Touil is an integrated upstream development and gas liquefaction project aimed at developing an estimated 9 Tcf of gas reserves from the three dedicated fields of Gassi Touil, Hamra and Rourde Nouss, and building a 4.7 mtpa LNG train at Arzew. Sonatrach awarded the project to Spain's Repsol YPF and Gas Natural in November 2004 only to revoke the contract in September 2007 and take exclusive control of the project, invoking a failure on the part of the Spanish consortium to meet its contractual obligations. For more details see: 'Gassi Touil: A failed partnership', *LNG Focus*, No. 14, October 2007
[iv] In January 2004, a deadly explosion at the Skikda LNG plant destroyed about 4 Bcm/yr of LNG production capacity (3 out of the 6 trains). For more details, see 'LNG industry rocked by deadly explosion at Algeria's Skikda plant', *Gas Matters*, January 2004.
[v] Cedigaz (2010) *Natural Gas in the World*, Paris.
[vi] 'Algeria cuts output due to economy: Khelil', *Platts LNG Daily*, 7 October 2009.
[vii] Sonatrach says it has earmarked $5 billion for pipeline infrastructure investment over the next 3-4 years.
[viii] 'Algeria puts on a brave face amid corruption probe', *European Gas Markets*, 28 January 2010.
[ix] See Stern, J. (2007) 'Is there a rationale for the continuing to oil product prices in Continental European long term contracts?' NG19, OIES; Ibid. (2009) 'Continental European Long-Term Gas Contracts: is a transition away from oil product-linked pricing inevitable and imminent?' NG34, OIES; Ibid. (2011 - forthcoming) 'The transition to hub-based gas pricing in Continental Europe'.
[x] 'Sonatrach wins right to increase prices to Spain', *European Gas Markets*, 26 August 2010; 'Sonatrach wins Gas Natural case', *World Gas Intelligence*, 18 August 2010.
[xi] 'Stagnant demand sours southern Europe's supplier relations', *World Gas Intelligence*, 3 November 2010.
[xii] 'ENI seeks to reform, not end, oil indexing', *World Gas Intelligence*, 23 February 2011.
[xiii] 'Algeria just says no to spot sales', *World Gas Intelligence*, 6 October 2010.
[xiv] 'Algeria yet to discuss curbing gas output', *European Gas Daily*, 18 March 2010; 'Algeria warns of price collapse threat', *European Gas Daily*, 31 March 2010.
[xv] 'Oran supply cut impossible: Shmatko', *European Gas Daily*, 9 April 2010.
[xvi] 'Gas producers back oil-indexation', *European Gas Daily*, 1 December 2010.
[xvii] 'Le style Yousfi face à la "crise" du gaz algérien', *El Watan Economie*, 27 September 2010.
[xviii] 'Spain receives first Medgaz deliveries', *European Gas Daily*, 18 August 2010.
[xix] 'Algérie: Les "fuites" sur le déclin de Hassi R'Mel embarrassent les autorités', *Maghreb Emergent*, 2 October 2010.
[xx] 'Algeria just says no to spot sales', ibid.
[xxi] 'Algerian producers told to cut output', *World Gas Intelligence*, 10 November 2010. Between 2005-9, the share of IOCs in total Algerian gas production has amounted to around 22%.
[xxii] 'Algerian LNG Output Plummets on Feedgas, Marketing Problems', *IHS Global Insight*, 11 October 2010.
[xxiii] 'Algeria's shifting LNG sales strategy', *World Gas Intelligence*, 25 August 2010.
[xxiv] For more details, see: Darbouche H. (2011) 'Algeria's Natural Gas Market: Origins and Constraints of Export Strategy', in: B. Fattouh & J. Stern, *Natural Gas Markets in the Middle East and North Africa*, Oxford: OUP.
[xxv] In this respect, the response of Gazprom, Sonatrach's main competitor on the Italian market, to ENI's demands for price revision will weigh particularly heavily on Algeria's policy.
[xxvi] The same applies to the 2 Bcm/yr of capacity booked by Sonatrach for its Italian subsidiary (Sonatrach Gas Italia) on the Trans-Med pipeline after its expansion in 2009.
[xxvii] 'Italy OKs Galsi environment study', *European Gas Daily*, 3 March 2011.
[xxviii] The Galsi consortium comprises Sonatrach (41.6%), Edison (20.8%), ENEL (15.6%), Hera (10.4%), and the Sardinian Sfirs (11.6%).
[xxix] 'Sonatrach investira 60 milliards de dollars entre 2011 et 2015', *El Moudjahid*, 17 January 2011.