strategy&

Navigating the transformation of the gas market

Adapting to survive in a period of change

pwc

Contacts

London

Andrew Clark
Partner, PwC UK
+44-20-7393-3418
andrew.clark@strategyand.uk.pwc.com

Rui Almeida
Manager, PwC UK
+44-20-7804-9887
rui.f.almeida@strategyand.uk.pwc.com

Adrian Del Maestro
Director, PwC UK
+44-79-0016-3558
adrian.delmaestro@strategyand.uk.pwc.com

About the authors

Andrew Clark is an advisor to executives in the chemicals and oil and gas industries for Strategy&, PwC's strategy consulting business. He is a partner with PwC UK, based in London. He has worked extensively in in Europe, Asia, and the Americas, and specializes in near-term performance improvement strategies, covering issues such as cost, performance, operating model, and human capital management.

Rui Almeida is an advisor to executives for Strategy&'s oil and gas team. Based in London, he is a manager with PwC UK, and focuses on commercial and market advisory to clients in the gas and liquid natural gas market. He has worked with clients on a range of issues, including valuations, contract management, M&A, disputes, and strategy.

Adrian Del Maestro is a specialist in the oil and gas industry for Strategy&. He is a director with PwC UK. He is based in London, where he leads the firm's global research capabilities in the oil and gas practice.

Executive summary

The global natural gas market is going through an unprecedented transformation. Gas is playing a huge role in the transition to a low-carbon world. It is also rapidly becoming a global commodity as its price crumbles on the open market. As recently as 2014, in Europe and Asia, liquid natural gas (LNG) enjoyed a golden age. Profit margins were high, and markets were growing. Sellers could secure long-term oil price–linked contracts and bask in the gains from high crude prices.

Now all of this is changing. With a growing glut in globally tradable LNG, all industry players — buyers, sellers, traders, and governments, to name just a few — will need to adjust their operating models. They should expect lower prices, more short-term trades, and demands for contractual flexibility. The right strategic response will vary from one player to another, and there is a great deal of risk and uncertainty. But any company in this industry can succeed by carving out a focused value proposition and developing the capabilities to deliver it.

Navigating the uncertainty

Much has been said about the collapse of oil prices in the past two years and its effect on big energy producers and buyers. But the recent weakness in global gas prices has been somewhat ignored — and it deserves just as much attention. Starting in 2014, this profitable, optimistic sector suddenly turned into a market in which companies are struggling to survive — and buyers, sellers, and traders must adopt creative strategies to navigate the uncertainty.

Volatility, in itself, is not the problem. It's to be expected in the natural gas industry. Even in good times, unpredictable events can drive prices up or down in this sector. For example, in the wake of the Fukushima earthquake in 2011, the demand for liquid natural gas (LNG) imports in Japan accelerated significantly. This boosted LNG prices to historic highs (*see Exhibit 1, next page*). At about the same time, China began viewing LNG as a way to diversify and clean up its energy mix, which has long been dependent on coal. That, too, created a market for natural gas that led to steady price inflation.

The problem is a structural change that may lead to lower natural gas prices going forward. The shale revolution in the U.S. has led to increased production of gas in North America and ongoing softness in the region's Henry Hub benchmark prices. This disparity created lucrative arbitrage opportunities for LNG sellers that could divert gas from the U.S. to the more attractive Asian markets.

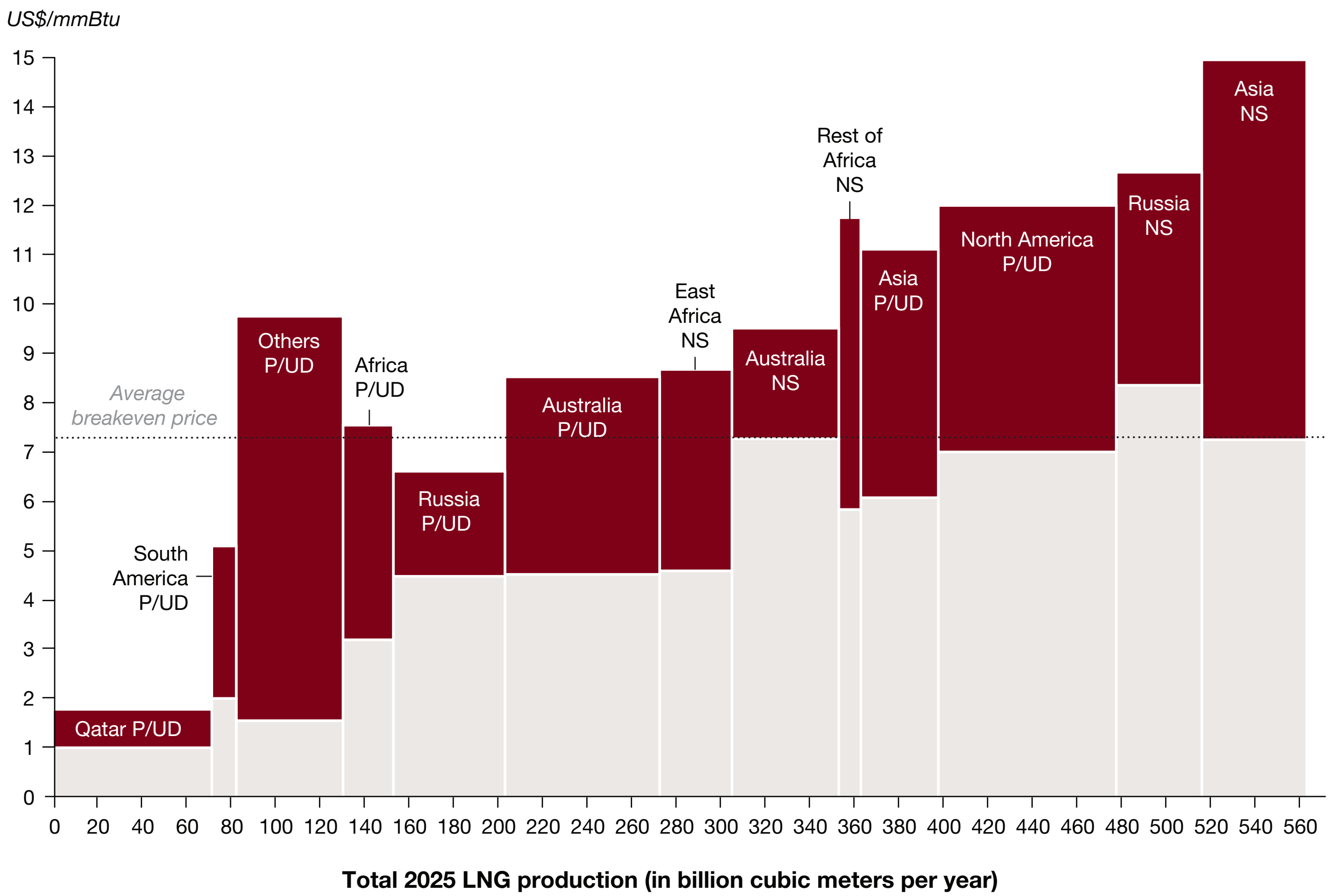
Oil prices are influencing the natural gas market as well, reducing prices further still. Suppliers and buyers routinely sign long-term contracts for pipeline gas and LNG indexed to Brent crude closings. Until recently, this has generated impressive profit margins for producers. When oil hovered around (or exceeded) US$100 per barrel, it supported a healthy average global LNG price of about $14 per million BTUs (mmBtu) in 2014. But when oil prices began their steady decline in 2014, global LNG prices fell in concert — to an average of $10 per mmBtu in 2015 and below $7 in 2016. Not only did that drop practically eliminate any significant regional arbitrage potential, it also made profitability more elusive. The average global price of gas has now slipped below the average LNG exporters' breakeven price of $7.20, excluding shipping costs (*see Exhibit 2, page 7*).

Exhibit 1
Impact of regional trends on gas price

Gas day ahead prices (2009–June 1, 2016)

Source: Bloomberg; Platts; Strategy& analysis

Exhibit 2
Global LNG breakeven price by source (estimated 2025 production)



P/UD: Production/under development

NS: Not sanctioned yet

Note: The breakeven prices are calculated at asset level by estimating the prices that give a net present value of zero based on all cash flows related to future production and costs.

Source: Rystad Energy; Strategy& analysis

Four forces to follow

What's next for the natural gas industry? In our view, the current profit margin erosion for sellers is just the beginning. Several converging forces — internal and external to the sector — will weigh heavily on gas prices going forward (*see Exhibit 3, next page*), making the market much more volatile, and risky for any but the most nimble and prepared companies.

First, on the demand side, the **thirst for natural gas has been rising.** Although some slowdown in demand growth is expected as global economic conditions soften, particularly in China, LNG orders are not going to decline anytime soon. According to BP's 2016 Energy Outlook, gas is the fastest-growing fossil fuel, with annual global consumption forecast to increase by 44 percent between 2014 and 2035 compared with only 20 percent for oil. The biggest consumption gains will come from Asia and Africa. During that period, natural gas use in transportation will balloon by more than 200 percent, while demand from utilities will increase by 56 percent and from industry by 42 percent.

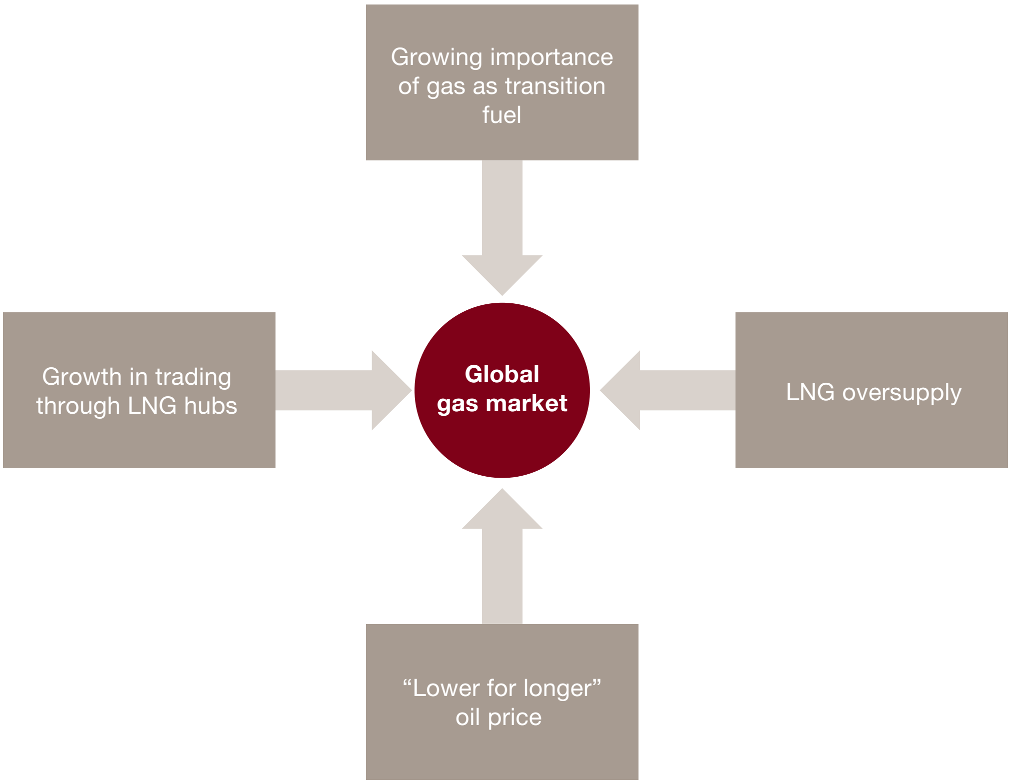
The biggest consumption gains will come from Asia and Africa.

A large part of the renewed interest in natural gas is driven by global environmental initiatives like the 2015 Paris Climate Conference, at which international leaders pledged to curtail carbon emissions growth to stem global warming. Because natural gas emits about 50 percent less CO_2 gas than coal and about 30 percent less than oil, it is viewed as an attractive transition fuel, a placeholder until renewable options are perfected and become more cost-effective. In fact, with this goal in mind, electric utilities worldwide (and particularly in less developed areas) are already becoming major purchasers of natural gas.

Although in most markets, higher demand leads to higher prices, the other three forces affecting the natural gas sector will probably have the opposite effect. Demand pressure could be more than offset by these forces:

Oil prices. Although oil indexation in long-term gas contracts may gradually subside, gas prices will be influenced by oil prices for several years. If oil prices stay low, so will gas prices. Existing contracts linked to oil will have to be worked through first, but even if oil and gas are

Exhibit 3
Convergence of forces affecting gas prices



Source: Strategy& analysis

delinked after these contracts are concluded, inexpensive oil could psychologically have a dampening effect on all energy prices.

LNG oversupply. The global LNG market is about to become inundated with new suppliers. A wave of investment in LNG liquefaction capacity will see Australia surpass Qatar as the world's largest LNG producer. Meanwhile, LNG exports from the U.S. are on the rise (the first cargo from the U.S.'s Sabine Pass in the Gulf of Mexico arrived in Brazil in March 2016). According to JPMorgan estimates, LNG capacity is set to grow at about 8 percent annually for the next few years while annual demand growth will top out at about 4 percent. A supply glut is thus forecast to continue and will exacerbate LNG commoditization. Oversupply will force sellers to seek alternative markets and share more risk with traders hoping to exploit arbitrage opportunities. Furthermore, some producers will likely cut prices to defend market share against LNG imports.

Increasing trading volumes on natural gas hubs. This is happening in Europe and the United States as well as regions that did not previously have significant distribution centers. Singapore, for example, is positioning itself as an Asian LNG center, supporting global as well as local markets. The presence of these hubs and the concomitant increase in available natural gas supplies have attracted new LNG buyers from as far away as the Middle East and North Africa — among them, Jordan, Pakistan, and Egypt. This evolution in global trading is producing more natural gas liquidity, price transparency, longer-term forward contracts, and gas-on-gas competition, which ultimately reduce contractual risk and facilitate hedging. In short, by globalizing the LNG market, these hubs could increase commoditization.

Strategic options

No company, in any part of the gas value chain, will be insulated from these disruptions. To prepare for these changes, companies must carefully consider their strategies and capabilities. Here are some practical considerations for natural gas players — on the buy and sell sides — to take into account.

Buyers, be bold

Obviously, LNG is a buyer's market now, but with that has come much uncertainty. In the past, natural gas purchasers would be locked into long-term contracts. Often these were indexed against oil prices; though sometimes costly, given oil price volatility, the situation provided a degree of stability. Companies knew what they were purchasing and how much they were paying over a period of time and had very little leeway to haggle for better terms. Now, with a glut of natural gas on the market, in order to optimize their portfolios, buyers must improve their trading capabilities — or in many cases develop them for the first time.

If you are a buyer, you should use your newfound leverage to revise contracts and renegotiate prices, gaining flexibility and the ability to respond to changing conditions. Link prices to increasingly liquid spot gas markets, and not to oil — thus reflecting more realistically the value of natural gas. According to estimates from the International Group of Liquefied Natural Gas Importers (GIIGNL), in 2015 about 15 percent of all LNG trade was conducted on a spot basis. Make your volume and delivery contractual terms adjustable based on your company's actual needs and portfolio objectives — these will depend on unpredictable economic conditions, such as seasonal demand patterns and fluctuating requirements at different facilities.

Look into purchasing partnerships. Purchasers of LNG have banded together to ensure consistent supply to a region — for example, Japan's Jera is a joint venture between utilities Chubu Electric Power and Tokyo Electric Power. In this environment, scaling up purchasing power could extract better terms and pricing than operating alone.

In short, use this time as an opportunity to optimize your portfolio. Drive greater agility into your contracts and orders, and reduce your exposure to oversupply and excess costs. Reposition your organization to improve your trading capabilities — specifically, to be able to thread the needle between spot and long-term markets and weigh the benefits among short- and long-term contracts. Even if supply diminishes and prices spike, you will gain the capabilities to manage market volatility.

Sellers, be disciplined

For many LNG providers, this is an especially difficult time. If you are one of them, the collapse in natural gas prices has been painful; even some of the larger international oil companies counted on gas and LNG for a large portion of their profits. Considering that the capacity glut as well as other supply-side trends will keep natural gas prices low for some time to come, you must develop a strategy that addresses the challenges of a global commodity.

Start with portfolio optimization. To the degree that you can, delay projects for which a final investment decision has not been made. In the oil and gas sector recently, some $380 billion worth of projects have been deferred or canceled. This isn't an advantageous time to throw good money after bad. An "invest on the dip" approach for sellers is a risky choice and will probably hurt more than help.

An "invest on the dip" approach for sellers is a risky choice and will probably hurt more than help.

In aligning your portfolios to market conditions, you have a few ways to diversify them. Take advantage of new entry points into the market — for example, expanding re-gasification terminals and pipelines — that can help you reach more potential customers in more regions.

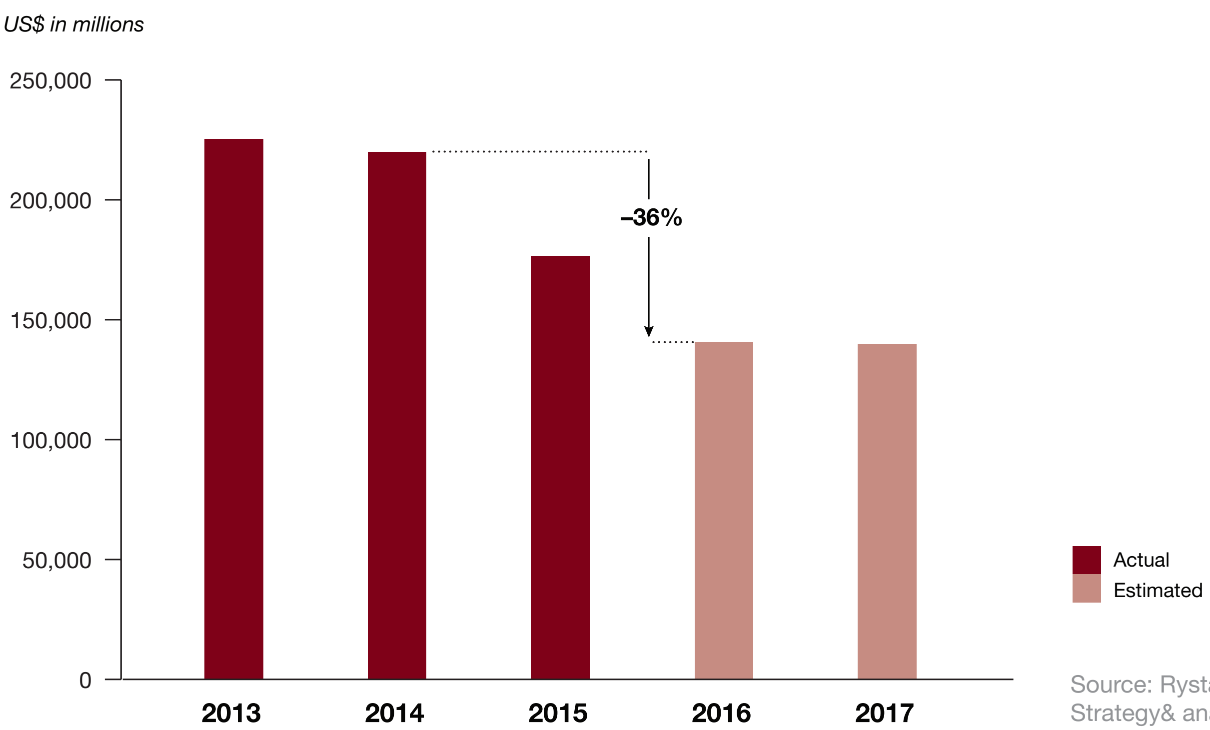
You may be tempted to protect market share in areas where you are particularly strong by starting a price war with new competitors. Although price wars are dangerous because they collapse profit margins, under the right circumstances this approach could be a winner. For one thing, it might persuade the interlopers to look elsewhere for orders and allow you to hold your customers. In addition, the outcome could pay off handsomely if gas prices rebound even a small amount. This approach appears to be behind recent moves by traditional pipeline exporters Gazprom and Statoil to "flood" the European market with cheap gas to discourage U.S. LNG exports to the region.

Most important, companies must target cost reduction. Attack expenditures across the value chain. To a degree, the natural gas sector has already begun to focus on capital expenditure reduction: Global investment levels in upstream gas are down by nearly 40 percent from 2013 to 2016 (*see Exhibit 4*).

But this is not enough. Conduct internal cost audits and eliminate expensive sacred cows that haven't proven to be of real value. Standardize functions, systems, and procedures. Renegotiate contracts with operations and maintenance teams to better reflect the stagnation in natural gas prices. If your breakeven point for natural gas sales is $7 per mmBtu, is it possible to lower the profit threshold to $6 by cutting costs?

At the same time, prepare to defend your company against attempts by buyers to rewrite existing contracts. You cannot rely on a one-size-fits-all strategy; instead seek to be flexible in meeting demands from critical customers, while protecting your own organization's financial future. One typical example of these recrafted deals: Qatar's RasGas cut LNG

Exhibit 4
Global upstream gas capex 2013–17



Source: Rystad Energy; Strategy& analysis prices to market spot levels, a discount of almost half, in a 25-year contract with India's Petronet. The Indian firm, a major RasGas customer, had threatened to get out of the contract by paying the penalty if an adjustment was not made reflecting the sharp drop in gas prices. For its part, RasGas was not willing to forsake the long-term benefits of keeping such a large buyer.

As an LNG provider, you have a strong advantage in your trading capabilities. Most sellers enjoy a long history of hammering out complex global deals and are well suited to maneuver through a difficult commercial landscape. That is a critical skill now because you face a greater counterparty risk than you have for a long time. As your more trusted buyers lower their volume purchases, shop around for better prices, or make burdensome contract demands, other sellers will find themselves seeking orders from companies with less-than-stellar credit records. You will have to use your trading skills to determine which second-tier or worse customers are worth the gamble because they are sufficiently stable and the contractual terms are more lucrative than those acceptable to higher-quality buyers.

Most sellers enjoy a long history of hammering out complex global deals and are well suited to maneuver through a difficult commercial landscape.

Traders, be shrewd

Currently, trading companies account for only about 10 percent of global LNG deals. But that percentage is expected to rise substantially during the next decade. As sellers shy away from counterparty risk, you can pick up their slack, squeezing small margins out of these transactions. If you are a trader, your business itself will act as a downward force on prices. As an intermediary and not a producer, you can successfully navigate a lower price environment than many sellers could.

Take advantage of the potential demand growth by buying or securing long-term access to assets, such as storage capacity in terminals strategically located to supply critical markets, to back your deals. Consider investing in upstream gas suppliers and chartering or acquiring LNG ships to generate some production and shipping profits.

Other stakeholders

Other key players in the natural gas market will also need to adjust to the new gas market. These include midstream asset owners and governments. Governments have a fundamental challenge to address: namely, balancing their different policies regarding domestic market regulation, environment, and national energy security of supply.

Conclusion

In a recent report, "New Energy Futures," we argued that the energy sector is going through a period of sweeping transformation. This is especially true for natural gas. Given the pivotal role gas will play in the transition to a low-carbon world, combined with the tide of commoditization that is sweeping the sector, you must prepare for change. You will need to muster all the intelligence, resources, and creativity that your firm has on board. In a future where risk levels, liquidity, and price volatility will increase, the certainties underpinning long-term supply contracts will ebb away. Lower margins and uncertain trading outcomes will replace them. To prosper, you will need to be ready. Those who aren't ready will fail.

Strategy& is a global team of practical strategists committed to helping you seize essential advantage.

We do that by working alongside you to solve your toughest problems and helping you capture your greatest opportunities.

These are complex and high-stakes undertakings — often game-changing transformations. We bring 100 years of strategy consulting experience and the unrivaled industry and functional capabilities of the PwC network to the task. Whether you're charting your corporate strategy, transforming a function or business unit, or building critical capabilities, we'll help you create the value you're looking for with speed, confidence, and impact.

We are part of the PwC network of firms in 157 countries with more than 208,000 people committed to delivering quality in assurance, tax, and advisory services. Tell us what matters to you and find out more by visiting us at strategyand.pwc.com.

www.strategyand.pwc.com

© 2016 PwC. All rights reserved. PwC refers to the PwC network and/or one or more of its member firms, each of which is a separate legal entity. Please see www.pwc.com/structure for further details. Mentions of Strategy& refer to the global team of practical strategists that is integrated within the PwC network of firms. For more about Strategy&, see www.strategyand.pwc.com. No reproduction is permitted in whole or part without written permission of PwC. Disclaimer: This content is for general purposes only, and should not be used as a substitute for consultation with professional advisors.