EUROPE

Making Ukraine Europe's new gas supplier

UPSTREAM / Kiev must lower upstream taxes, cut red tape and scrap barriers that deter small investors. Self-sufficiency and even exports would follow / Philip Vorobyov, Kiev

Ukraine's new prime minister, Volodymyr Groysman, wants his country to be energy independent by 2020. The nation still imports over 40% of its natural gas needs, so it's a tall order.

But it's achievable. The government's decision to raise residential gas prices to international market levels from May 2016—a faster target than even the IMF demanded—is an important first step. In one fell swoop, Ukraine eliminated cross-subsidies, which were both a heavy burden on the budget and an opportunity for corruption. Market pricing will drive energy efficiency and reduce consumption. Over the past two years, Ukraine has also been able to significantly diversify its sources of imports and, in 2015, for the first time imported more gas from Europe than it did from Russia.

Self-sufficiency, though, means Ukraine will also need to increase gas production from 20bn cubic metres a year now to around 30bn cm/y. Despite more than a century of gas production, Ukraine's geological potential would allow for this and more. In fact, Ukraine could not only meet its own needs, but become a significant new gas supply source for Europe—as soon as the middle of the next decade.

But all this can only be achieved through massive investment, technology-transfer and knowhow brought in from abroad. And, so far, the government has paid little attention to the reforms that would stimulate private investment in gas production. Ukraine remains uncompetitive from an international investor's point of view, but changes are needed in the taxation of gas production. The government also needs a regime that will draw in private investment from small, independent exploration and production companies and financiers—the kinds of firms behind North America's unconventional energy surge. So Kiev will need to make the upstream more economically attractive, lower the entry barriers for investment and offer new, material opportunities to investors.

Life below

Start with the potential. Ukraine's gas reserves range from 0.6 trillion cm (BP's estimate) to 1 trillion cm (the government's). At current production rates that yields up to 50 years of reserve life, far more than the 11 for the US or 15 years for the EU. Doubling Ukraine's reserves-to-production ratio in the next ten years would allow for output of 40bn cm/y from its existing reserves base—and this doesn't even include the full conventional resources number (up to 5 trillion cm) or Ukraine's technically recoverable unconventional potential, which might be 10 times as great as conventional reserves. A 2011 study from IHS Markit reckoned Ukraine could produce as much as 70bn cm/y by 2030—levels not seen since the 1960s.

The physical characteristics of the conventional reservoirs that dominate Ukraine's reserves base are promising: offering permeability between 10 and 100 times higher than those of the main shale plays that drove the US' recent hydrocarbon production surge. Yet the productivity of Ukrainian rigs can be five to 10 times lower than those in the US.

While the potential is great, Ukraine's current resource base is mature: the Carpathian basin in the west and giant Dnepr Donetsk basin in the east have been producing for a century. Giant fields like Shebelinka, producing since the Soviet era, are rapidly declining. What remains are hundreds of relatively small fields and exploration prospects, with complex geology, and often at great depths (up to 7,000 metres).

Combined with a poorly developed oilfield-services sector, this difficult geology will make many upstream projects relatively high-cost, as technology and skills will need to be imported. Special kinds of investors will be needed—small, independent E&P companies able to focus on opportunities from wildcat exploration to mature-field redevelopment to unconventional gas. So far, Ukraine's strategy has not focused on these kinds of firms or private capital. Fortunately, higher gas prices in the 2006–14 period encouraged private investors, and their production has nearly doubled. But state-owned or controlled companies—whose output has been stagnating—still dominate Ukraine's gas sector: they produced 80% of the country's 20bn cm in 2015.

The country needs to encourage small investors further. Hopes that big international oil companies would do the job have been dashed—the big projects for offshore and unconventional exploration pursued by Shell, Chevron, Eni and ExxonMobil in 2011–13 have all been scrapped, victims of the conflict with Russia and the oil price.

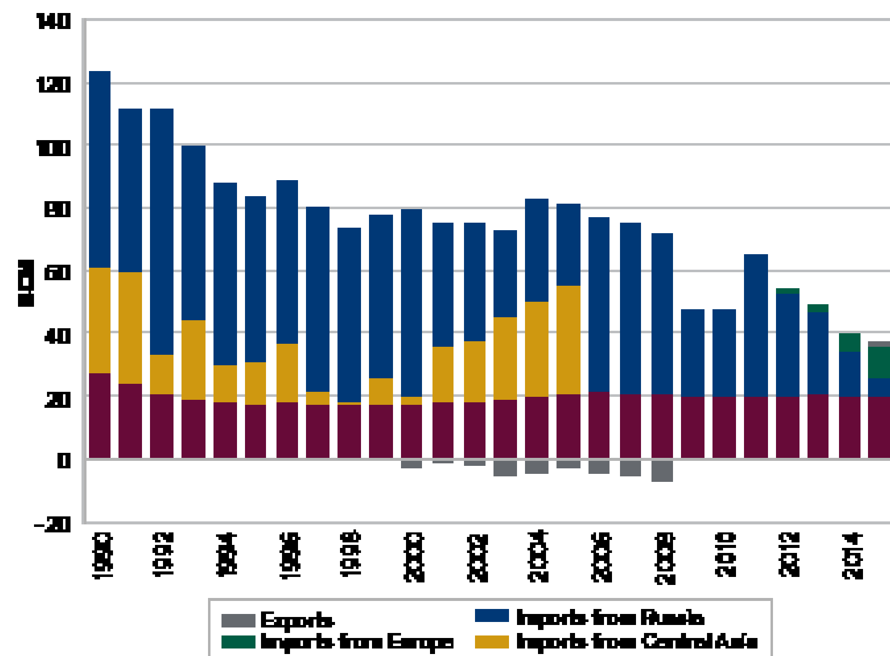

FIG. 1: Westward leaning: Ukraine's gas sources, 1991–2015. Source: Infotek; Energorynok

Even if they return, these companies will want production-sharing agreement-type projects, which will take years to negotiate. Ukraine's state-owned firms will contribute, but are too big and unwieldy to simultaneously direct investment and technology to hundreds of projects that differ greatly in their individual technical characteristics.

Attracting, and keeping, the kinds of dynamic small firms that led the US renaissance—instead of waiting for the majors to come back—will depend on Ukraine offering an attractive, transparent and stable fiscal regime for the upstream. At present, Ukraine's production tax rates aren't just uncompetitive, they're uneconomic. At prevailing prices, maximum royalty rates of 29% for gas and 45% for liquids production just don't work.

Reforming reform

The government has changed some of the rules. But last January's reduction in taxes on gas production for private producers from a maximum of 55% to 29% was, in reality, just a return to the rates set before August 2014, before the previous government dramatically raised taxes to support the budget. Moreover, the subsequent fall in gas prices since 2015 has meant that producers haven't improved—and there isn't enough interest to spur investment in new projects (including exploration and appraisal). The breakeven price for Ukraine's relatively small and technically difficult fields ranges from $100 to $200 per 1,000 cm, say the Association of Gas Producers of Ukraine and IHS. But that's more than producers now earn. At the very least, taxes should fall in line with the drop in prices and netbacks. The Association of Gas Producers argues that, in the short term, a simple royalty of 12% (in line with the global average), assessed on the basis of transparent European gas-hub pricing, would make investors start to pay attention again.

More than that, two of the percentage points from this 12% royalty should be directed towards hydrocarbon-producing regions—a way to coax more support from local people for increased upstream activity nearby. At present, locals in Ukraine's main gas-producing regions like Poltava, Kharkov and Dnepropetrovsk see no direct benefit from gas production, because most of the tax revenue goes to the central budget. Ukraine should also apply this tax rate to all investments, instead of the current system that offers different taxes based on the well's depth. So, for example, projects of 5,000 metres or less get taxed at 29% (gas) and 45% (liquids). Anything deeper gets 14% and 21%, respectively. But a large share of Ukraine's existing reserves are found at 3,000–5,000 metres, where costs are not significantly lower than for the projects that get the discounted rate. That creates temptation for graft, in borderline projects, and eliminates 25–30% of reserves and resources from investors' radar.

This tax change would have a surprisingly small impact on Ukraine's budget. In 2017, the budget receipts from gas taxation are expected to account for just 5% of the total. Private producers account for less than 1%. So the proposed reduction would account for just 0.5% of the total budget. The additional investment and production as a result of this tax cut, however, would be net-positive for the budget within two to three years as Ukraine's tax base expands.

And the prize could be significant. On current trends, Ukraine will consume 28bn–30bn cm in 2020. State-owned upstream player UkrGasVydobuvannya plans to increase output from 14.5bn cm/y now to 20bn cm in 2020. That means private companies will have to more than double their production of around 4bn cm/y to plug the gap. That would bring self-sufficiency—but it can't happen without competitive tax rates. Without them, private investors would stop investing and their gas production would stagnate.

Such tax reductions are not, though, on the government's agenda. Last year, Ukraine and the IMF instead agreed a royalty of 20% and a new profits tax surcharge of 15–30%. At best, these changes will be neutral for investors—but, more likely, new income-tax surcharges as early as next year will make the regime more complex and unpredictable, for both investors and

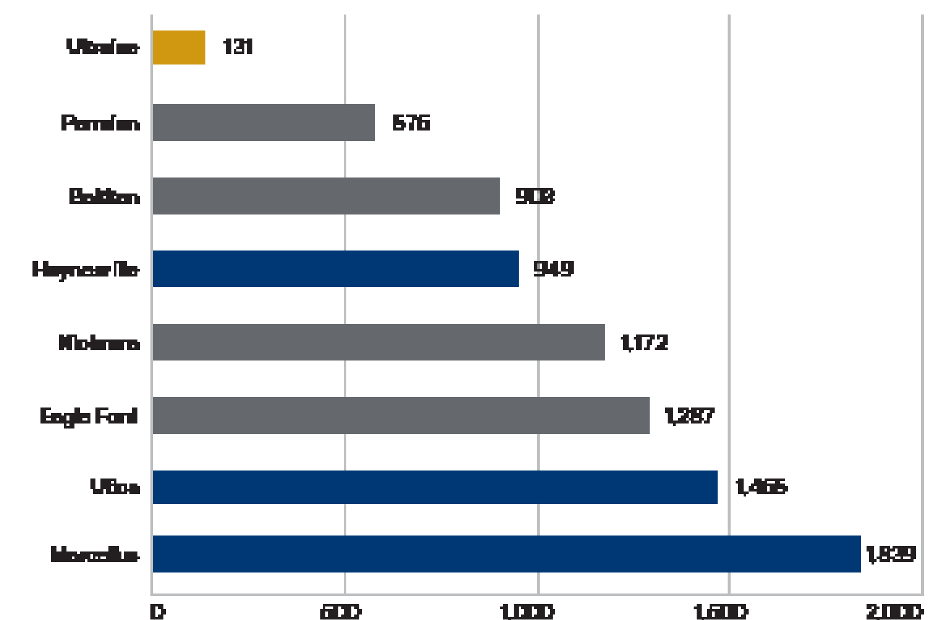

FIG. 2: Laggard wells: rig productivity in Ukraine vs US [boe/rig/day]. Source: Petroskills

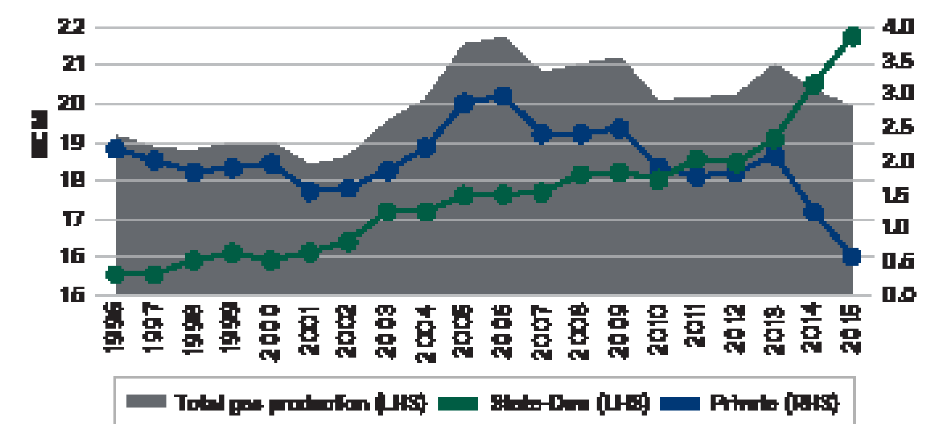

FIG. 3: Spot the growth: Ukrainian gas production, private vs state. Source: Infotek; Energorynok

Ukraine's fiscal authorities.

Taxation based on profits, not revenue—the norm for hydrocarbon taxation in the West—should be the long-term goal. Such a system is more flexible and better reflects the widely differing economics of multiple projects in mature basins (everything from exploration of relatively small and deep fields to old-field redevelopment and proving up of unconventional resources). But such a regime can only be adopted when Ukraine is ready. First, the country also needs to implement full-scale and transparent IFRS-based accounting, train new staff and reorient the industry's regulatory approach. This would assure investors that the government would apply the new regime fairly and transparently.

But that's not all. Ukraine's official gas-sector reform plan, announced in April 2015, contained a section on the reform of antiquated upstream regulation. While several reformist deputies in parliament pushed forward this least known part of the reform programme, it wasn't given strong external or internal backing, and the results have been minimal.

This is a problem, because Ukraine's sprawling web of often duplicating and contradictory permitting and monitoring requirements—which hydrocarbon producers must follow at the central, regional and local levels—is a major barrier to new entrants in the upstream. The government eliminated a number of these rules in the past year and several draft laws have been put before parliament, to further simplify regulation. But, in essence, the system remains unreformed, unwieldy and, for an investor, risky.

Digging deep

To be fair, Ukraine's hydrocarbon licensing procedures have been modestly updated: auctions are now more transparent. But the ultimate goal of creating a functioning secondary market for licences remains a distant prospect. Such a secondary market is critical for raising financing, because it makes licences themselves viable collateral for banks: at present, a bankruptcy of a licence-holder leads to a recall of the licence by the state.

Field-development rules inherited from the Soviet era, with super-giant fields in mind, and little regard for economics or modern technology—also need an overhaul. Basic techniques used around the world, like underbalanced drilling and multiple-zone completions, remain illegal. Stringent requirements for forecasting production (5% margin of error) and getting state approval for the number of operating wells mean a constant need to update and change production plans. It all consumes time and capital. A draft for new field-development rules has actually been made—but it remains incomplete and stuck in what seems to be an endless approval process.

Another major investment barrier has been the lack of transparency in upstream data. It's a legacy of the Soviet penchant for needless secrecy and—in the not-so-distant past—the urge of corrupt bureaucrats to keep information under wraps. Some headway has been made, and basic information about existing licences and fields is now available. But much critical technical data—like field seismic data, necessary for reprocessing and subsequent reinterpretation, or information about drilled wells—are expensive to buy or simply deemed a commercial secret. Ukraine needs to develop an integrated upstream data base that could be accessed at little cost by existing and potential investors. Well information should be made public after a limited period after completion (as is the case in North America, the UK and Norway). Some policymakers have tried to do all this in the past two or three years, but without much success.

Finally, the gas-sector reform process itself is adding problems for investors. Over the past year Ukraine made several changes to the regulations so it could meet EU regulations (in particular those in the 3rd Energy Package). So Kiev has passed the Gas Market Law, which commits Ukraine to a market-based gas sector by unbundling transportation from supply along with other measures to encourage transparency and competition. Yet many of the changes have added to business costs and lumped on more risks for private producers and wholesale-gas traders.

For example, producers and wholesale traders wishing to supply end-users must keep a share of their gas in storage and provide financial guarantees to the system operator as a hedge against any failure of physical gas deliveries. These directives are now some of the most onerous in Europe and have been estimated to add $5–10/'000 cm to the supply cost.

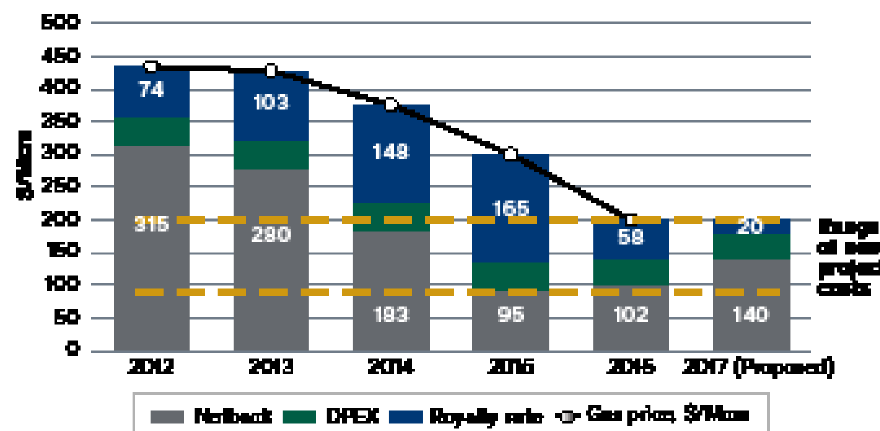

FIG. 4: Break uneven: netbacks vs project costs, 2012–16. Source: NKREKU; Association of Gas Producers of Ukraine; IHS Markit; JKX Oil&Gas

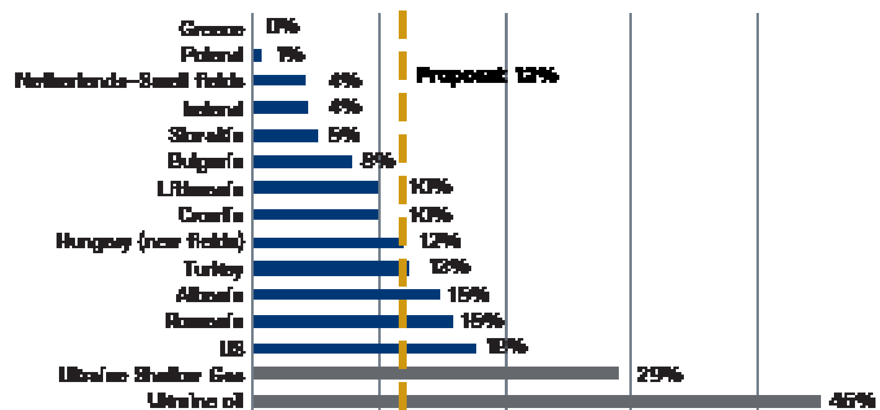

FIG. 5: Hard squeeze: Ukraine's royalty rates vs peers'. Source: Deloitte; JKX Oil&Gas

The new entry-exit transportation tariff system mandated by EU rules will shift up to a third of the cost of transporting gas from consumers to producers. The new rules—once fully implemented—require the sale of all gas at Ukraine's new Virtual Trading Point, which means paying a transportation-capacity entry fee. This is common practice in Europe, but transportation fees in Ukraine are double to triple those in many west European countries. Meanwhile, the process of setting transportation tariffs remains opaque because the cost base of the system operator, Ukrtransgas, remains bundled inside state monopoly Naftogaz.

The new Network Code has introduced new requirements for gas quality and metering. The trouble is that not one company in Ukraine today meets those requirements, which could result in arbitrary enforcement of the rules. A clear transition period for upgrading processing and metering facilities is needed.

All this creates a key risk: that rising costs and tougher regulatory requirements will see the industry consolidate around the strongest existing players, reducing competition. Ukraine need only look at the gas industry in several Central and East European countries, where EU-prescribed reforms have hardly increased competition or private investment. Ukraine should seek to avoid, not replicate, those examples.

So, in its quest for energy independence, Ukraine faces a fundamental dilemma: how does it rapidly reduce its reserves-to-production ratio—making good on its abundance of gas potential? In three ways. First, it must make its upstream projects more attractive to private investors by reducing taxes in the short term and, in the longer term, bringing its tax system in line with those used in the West. Second, it must remove the barriers to investment that lurk in outdated upstream regulation—and not inadvertently erect others through the otherwise logical and positive gas-sector reform programme. Finally, Ukraine must embrace private property in its energy sector, start privatising state-owned assets and, in doing so, offer material new opportunities to qualified investors.

The prize for Ukraine—and other countries—would be large. Self-sufficiency in gas would save as much as $3bn in gas imports between now and 2020. Investment and technology would flow into Ukraine, providing economic growth and employment. A doubling of Ukrainian production would also allow for some exports—giving Europe a new unexpected source of supply by the middle of the next decade. Ukraine could even provide a market for spare services capacity that has accumulated in North America, where efficiency gains have sharply reduced the rig count. But Ukraine also needs to understand that time to reform is running out. Advances in energy technology are putting increasing pressure on the hydrocarbon industry. Inaction and state paternalism over the industry would mean a large share of Ukraine's natural riches remain buried forever. **PE**

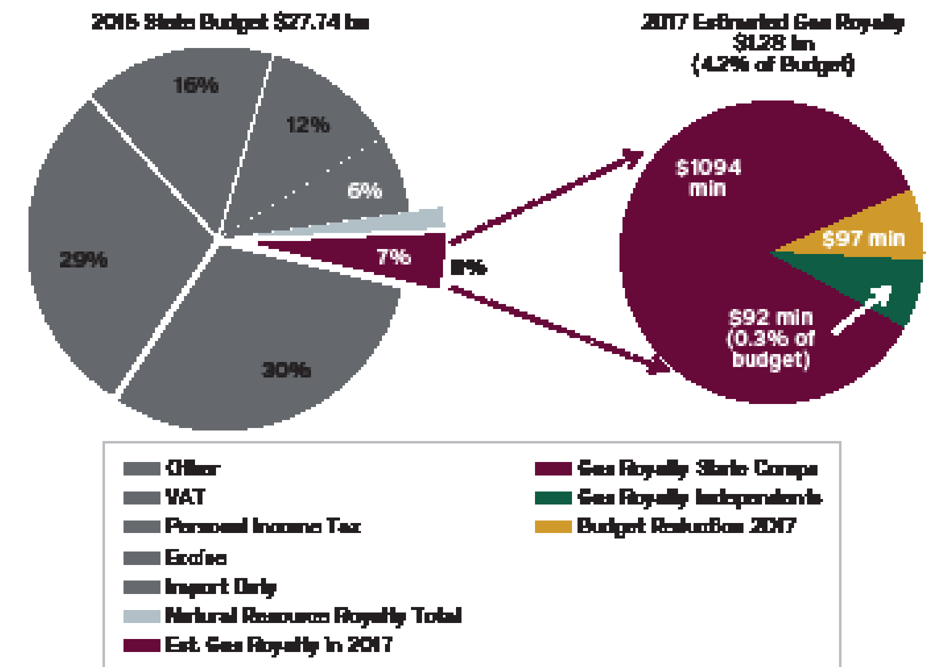

FIG. 6: Small slice: gas revenue as share of Ukrainian budget. Source: Ministry of Finance of Ukraine; JKX Oil&Gas

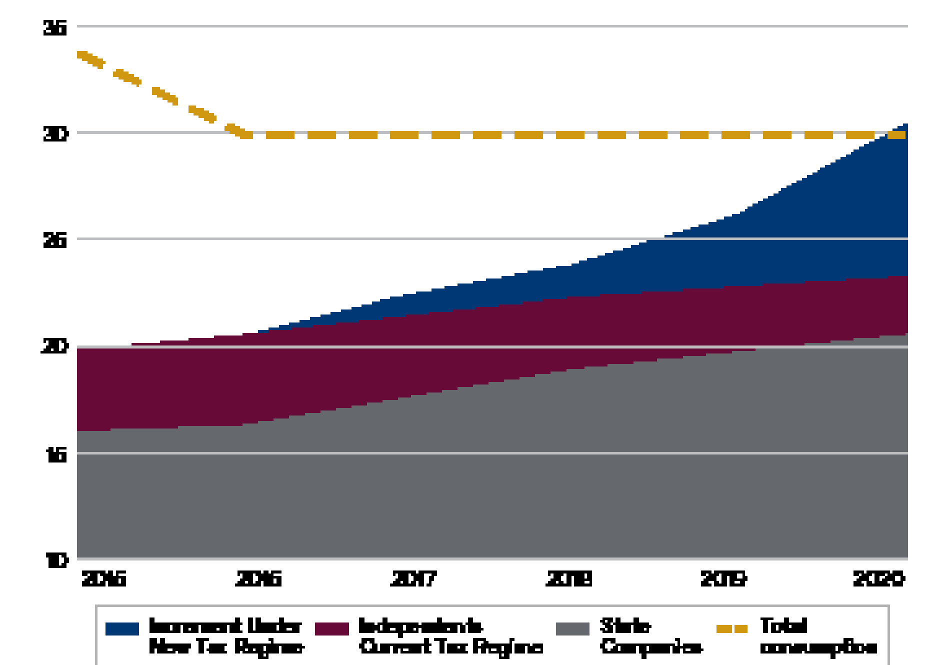

FIG. 7: Private capital unleashed: Ukraine's gas balance by tax regime, 2015–20 Source: JKX Oil&Gas

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