

# Zanaga Iron Ore Company

Valuation update

## Resetting expectations

Metals &amp; mining

23 October 2013

**Price** **23.6p**
**Market cap** **£66m**

US\$1.52/£

Net cash (US\$m) as at June 2013 35.1

Shares in issue 278.8m

Free float 25%

Code ZIOC

Primary exchange AIM

Secondary exchange N/A

### Share price performance



%	1m	3m	12m
Abs	2.2	119.8	(40.9)
Rel (local)	0.4	116.0	(49.2)

52-week high/low 40.0p 9.7p

### Business description

Zanaga Iron Ore Company (ZIOC) owns 50% less one share in the Zanaga iron ore project (ZIOP) in Congo (Brazzaville), which has JORC-compliant resources of 6.8bn tonnes at 32% Fe and proven and probable reserves of 2.5Bt at 34% Fe. ZIOP is managed by Glencore Xstrata, which has brought it to the FS stage.

### Next events

Feasibility study	Q114
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Glencore Xstrata and Zanaga Iron Ore Company (ZIOC) have agreed to revise the scope of the Zanaga iron ore project (ZIOP), which will now be advanced on a staged development basis. The lower capex requirement and higher capital efficiency have substantially reduced the project's execution risk. The feasibility study, due in late Q114, will now focus on a 12Mtpa pellet feed project, also incorporating an early-stage 1-2Mtpa DSO operation (total 14Mtpa), which will provide near-term cash flow. As the iron ore fundamentals remain strong, ZIOC shares should be supported by the upcoming FS results and the expectations of the investment decision.

Year end	Revenue (US\$m)	EBITDA (US\$m)	PBT* (US\$m)	EPS* (US\$c)	P/E (x)	Yield (%)
12/11	0.0	(12.4)	(12.2)	(4.4)	N/A	N/A
12/12	0.0	(6.8)	(6.6)	(2.4)	N/A	N/A
12/13e	0.0	(4.5)	(4.4)	(1.6)	N/A	N/A
12/14e	0.0	(4.0)	(3.9)	(1.4)	N/A	N/A

Note: \*PBT and EPS are normalised, excluding intangible amortisation, exceptional items and share-based payments.

## Phased development could be a game changer

ZIOP's feasibility study (FS), due in late Q114, will now focus on a smaller-scale operation to deliver 12Mtpa of a pellet feed product plus 1-2Mtpa of DSO. The phased development is expected to reduce ZIOP's pre-production capital cost by two-thirds, bringing down its capital intensity from US\$245/t to c US\$200/t and making the project's capex more attractive to a potential strategic partner. This should increase the chances of raising project finance while substantially reducing the execution risk. In addition, there is potential for an early-stage DSO project to produce 1-2Mtpa sinter fines, which could be delivered to the market via existing infrastructure. The DSO project may therefore be launched in 2015.

## Modified JV agreement

In addition to ZIOC's commitment to co-finance the project's work programme (US\$17m), which has been extended to December 2014 and incorporates the DSO potential and covers the mining licence application process, the companies agreed to remove the call option that gave Glencore Xstrata (GLEN) an opportunity to buy out ZIOC after the completion of the FS and the Texas auction provision. Importantly, the agreement limits ZIOC's cash contribution to the project's work programme by the agreed amount, which removes dilution risk at the pre-development stage.

## Valuation: Looming FS results to support the stock

Having been re-rated on the project update announcement, ZIOC shares still offer substantial upside at they trade at an EV/resource of US\$0.06/t. The revised scope of the project and the modified JV agreement with GLEN further reduce ZIOP's execution risk and improve short-term value realisation visibility for investors. As the FS results are now some six months away, and as long as the short- to medium-term iron ore market fundamentals remain strong, ZIOC shares should be well supported by the expectation of a positive investment decision on the project.

## Zanaga project update

### Staged development could be a game changer

Glencore Xstrata and ZIOC have reached an agreement to revise the scope of the ZIOP and are now looking to proceed with a staged development of the project. This is expected to result in a visible reduction in ZIOP's capital intensity (from US\$245/t to c US\$200/t), making the project's capital cost much more digestible (revised capex of US\$2.5-3.0bn vs the original pre-feasibility study [PFS] level estimate of US\$7.4bn). This increases the chances of raising project finance and therefore reduces execution risk. The feasibility study, which is due by the end of Q114, will now focus on a 12Mtpa operation delivering a high-grade, low-impurities pellet feed product through a slurry pipeline. At a later stage, the project could be expanded to the originally planned 30Mtpa run rate (Phase 2) using the internal cash flow. The FS and the environmental study (ESIA) will allow for the mining licence application. The successful granting of the licence should further de-risk the project, leading to a final investment decision from Glencore Xstrata and a potential strategic partner. In addition to the pellet feed project, the partners are considering an early-stage direct shipping ore (DSO) operation to produce 1-2Mtpa of sinter fines using simple crushing and screening. Given the availability of infrastructure (we understand that both tyre road and railway are in place to support the 2Mtpa run rate), the DSO project could have a short lead time, with first production likely in 2015. It could therefore provide near-term and relatively low-risk cash flow for future development.

#### Exhibit 1: ZIOP's proposed development schedule\*

Feasibility and ESIA studies completion	End Q114
Mining licence application	Q214
Mining licence award	Beginning Q314
Investment decision on the project	Q414
Commissioning of the DSO operation	H215
Pellet feed project construction start-up	2016
Pellet feed project commissioning and first production	2018

Source: Company data, Edison Investment Research. Note: \*Subject to positive investment decision and project funding.

### Hematite-based project with strong economics

Based on the available scoping and the PFS level information, we believe there is a strong case for developing a 13-14Mtpa iron ore operation to produce a pellet feed concentrate from the higher-grade hematite portion of the project's overall mining reserve (2.5bn tonnes of compliant probable ore reserve grading 34% Fe). The lower-grade magnetite material that dominates the project's resource base could accommodate a subsequent expansion to the originally planned 30Mtpa run rate. The two-stage production scenario would in part mirror the dual processing route initially proposed at the railway scoping/prefeasibility study stage, whereby the softer, higher-grade hematite ore was to be upgraded in the hematite concentrator (yielding some 15Mtpa of sinter fines), while the harder BIF ore was to be fed through the itabirite processing plant (producing 30Mtpa of coarse magnetite concentrate).

ZIOP's hematite ore is free dig and highly friable, which means it could be mined and upgraded at a relatively low cost, providing substantial savings (both on capex and opex) compared to magnetite processing. We note that the early-stage metallurgical test works demonstrated that the project's hematite ore is amenable to a typical gravity separation to produce premium-grade sinter fines at a very coarse particle size of 6.3mm. However, as the pellet feed product is likely to require finer size fractions (typically less than 75µm) to make it suitable for the pipeline transportation, it is expected that the hematite processing will employ a combination of gravity separation (spirals) and flotation. Overall, the Stage 1 hematite operation is forecast to treat c 42% Fe material to produce 12Mtpa of pellet feed grading 66% Fe at a mass recovery in excess of 40%. At a later stage, the project could

be expanded to produce up to 30Mtpa of pellet feed based on the magnetite material, with an estimated saleable grade of 68% Fe. In both cases, the pellet feed product is expected to yield very low impurities, with combined silica and alumina below 4%. The low level of deleterious elements suggests that ZIOP's product is likely to command a price premium to the Australian benchmarks and could also provide an attractive blending opportunity to improve the quality of the inferior material for the potential off-takers.

### **Digestible capex, improved capital efficiency**

The 13-14Mtpa operation is expected to have a capital cost of US\$2.5-3.0bn, or c US\$200/t, compared to the PFS level estimate of US\$7.4bn (US\$245/t) for a 30Mtpa pellet feed project. This estimate takes into account mining, processing and infrastructure (both port and slurry pipeline). The obvious capex savings come from power, as relatively expensive magnetite processing will be eliminated from the production process at the initial stage. As a result, the required electricity for the Stage 1 operation could be sourced from the grid instead of the dedicated greenfield power plant. Additional cost savings are expected to be made at the infrastructure end, with the potential to avoid costly dredging at the port by using transshipment and the owner-built service harbour. Finally, smaller throughput will result in lower steel consumption to build the slurry pipeline. A larger-scale pellet feed operation will require a standalone power plant, a deepwater port and the expanded slurry pipeline. It is expected that the feasibility study will provide an initial capex estimate for the second stage of the project.

### **One of the lowest industry opex unlikely to be significantly challenged**

On the opex side, we believe the hematite processing cost could be as low as US\$7-8 per tonne of product (c 30% less than that for magnetite), due to the soft and incompetent nature of the ore, which requires less energy to crush and grind. On the other hand, lower throughput, transshipment and external power consumption point to higher transportation and electricity costs. In addition, it is likely that the smaller-scale operation will be based on contractor operated mining, which would result in a higher cost. Clearly, in light of a massive reduction in capex and the lower capital intensity, some opex pressures are unavoidable. Having said that, we would not expect any major cash cost escalation for the scaled-down project. While the company guides a combined Stage 1 (12Mtpa pellet feed plus 1-2Mtpa DSO) life-of-mine opex of US\$37-40/t (on an FOB basis), we understand that the cash cost for the pellet feed component of the project is likely to be closer to the US\$30/t level (compared to the PFS-level estimate of US\$23/t for the 30Mtpa operation). A visible upwards bias is caused by the higher-cost DSO production. This suggests that the Stage 1 project should still be very opex competitive and favourably positioned on the industry cost curve.

### **Early-stage DSO potential**

The partners believe that the project has potential for an early-stage DSO operation to produce 1-2Mtpa of sinter fines grading 60-62% Fe with low impurities. According to ZIOC, some 6Mt of high-grade weathered material has already been identified to support the DSO project, with an additional 30-40Mt of ore potentially amenable to similar low-cost crush and screen processing. The saleable product could be either trucked (1Mtpa) or trucked and railed (2Mtpa) to the existing deepwater port of Pointe Noire using the available tyre roads and the railway line. The overall transportation route would extend for c 450-80km, with the railway running some 100km from the proposed mine. Given the lack of infrastructure constraints, the DSO project is expected to have a short lead time and could be rolled out in six months following the granting of the mining licence. The capital cost is likely to be below US\$100m, while opex could be roughly estimated at about US\$70-80 per saleable tonne. Assuming a 62% Fe product and no penalty/premium for the iron content and impurities, we estimate that the DSO project could generate c US\$30-40/t in cash margin based on

the current spot iron ore price of US\$131/t (CFR China, 62% Fe). This would mean a US\$60-80m per year EBITDA operation for the 2Mtpa case, before any large-scale project investment.

## **Financing and financials**

The project debt finance is expected to be a substantial part of the overall funding package, with both GLEN and ZIOC pledging to collaborate on the potential funding options. The investment decision on the project is expected to be based on the results of the FS, which is due in late Q114. The bankable feasibility study will also form the basis for a mining licence application. The reduced capital cost and increased capital efficiency of the project substantially reduce its execution risk and coupled with the potential GLEN involvement also significantly increase the chances of raising the required project funding.

In the meantime, having revised the JV agreement, GLEN and ZIOC agreed to extend the project's work programme from March 2014 to December 2014 to incorporate the mining licence application process. As a result, ZIOC agreed to contribute US\$17m to the development budget. We have updated our model to incorporate this cash outflow, which will be financed from the company's existing cash balance. Given that ZIOC has US\$35m in cash as of June 2013, we estimate that by the end of 2014 the company's cash position could stand at around US\$12m (this takes into account a forex loss of US\$2.2m booked in H113).

## **Modified JV agreement**

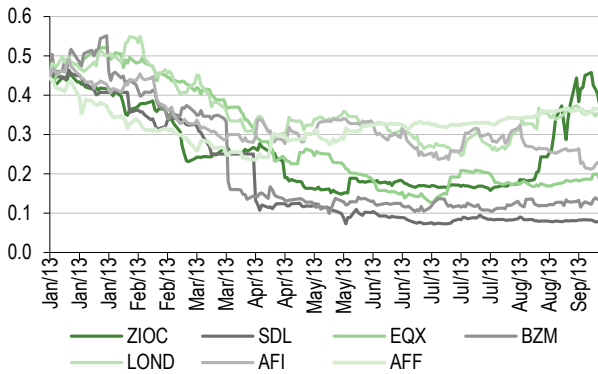
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Along with the decision to revise the scope of the project, ZIOC and GLEN have agreed to modify the joint venture agreement (JVA) between the companies. In addition to ZIOC's commitment to co-finance the extended work programme (US\$17m), which will now also incorporate the project's DSO potential, the companies have agreed to remove the call option that gave Glencore Xstrata an opportunity to buy out ZIOC after the completion of the feasibility study. The partners have also agreed to remove the Texas auction provision that gave ZIOC an opportunity to buy Xstrata's interest in the project or sell its own stake to the JV partner at a chosen price due to the change of control provision. Importantly, the agreement limits ZIOC's cash contribution to the project's work programme by the agreed amount. This significantly reduces the dilution risk at the pre-development stage.

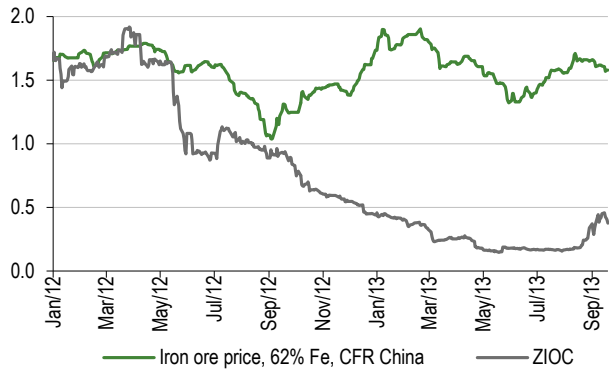
## **Valuation: Looming FS results to support the stock**

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Having been under severe pressure for most of this year on the back of the general deterioration in investor sentiment and the uncertainty surrounding the merger between Xstrata and Glencore (with the latter known for its negative stance towards greenfield projects), ZIOC shares have recently enjoyed a strong recovery on the project update announcement. While the stock has been re-rated to an EV/resource multiple of US\$0.06/t, we believe it still offers a substantial upside. The revised scope of the project and the modified JV agreement substantially reduce ZIOC's execution risk and improve visibility on the value realisation for investors. As the feasibility study results and the mining licence application are now about six months away and as long as the short- to medium-term iron ore market fundamentals remain firm (which we believe is highly likely, despite the prevailing downside risks to pricing due to the gradual increase in supply and seasonality), ZIOC shares should be well supported by the expectation of a positive development decision on the project. A subsequent project finance raise, which should be assisted by Glencore Xstrata's involvement in the project, could be an additional catalyst for the share price.

**Exhibit 2: ZIOC peer group performance (rebased)**


Source: Bloomberg

**Exhibit 3: ZIOC vs iron ore price (rebased)**


Source: Bloomberg

**Exhibit 4: West African iron ore valuation comparison**

	Development stage	Price, US\$	Market cap, US\$m	EV, US\$m	Attributable resource, Mt	Iron content, % Fe	Contained Fe, Mt	EV/resource
African Minerals	Production	2.65	878	1,159	12,851	31.2	4,010	0.29
London Mining	Production	1.85	256	462	2,106	33.1	697	0.66
Sundance	Exploration	0.07	203	173	2,306	42.2	973	0.18
Afferro	Exploration	1.36	143	63	2,619	32.5	850	0.07
Zanaga	Exploration	0.38	105	70	3,400	32.0	1,086	0.06
Equatorial	Exploration	0.64	78	26	767	31.9	245	0.11
Bellzone	Production	0.07	52	21	4,630	25.9	1,199	0.02
<b>Average</b>								<b>0.20</b>

Source: Company data, Bloomberg

### NPV: Lower scale countered by the reduced execution risk

All things considered, we estimate that the combined 12+2Mtpa pellet feed and DSO project could fetch some US\$1.1bn in an NPV<sub>10</sub> on a 100% basis, or US\$541m on an attributable basis (post US\$17m cash injection and assuming zero government participation). This is based on our long-term iron ore price assumption of US\$90/t and a 10% discount rate (both in real terms). The obvious risk to our valuation and the project's execution is a deterioration in iron ore prices, which could deter the development decision on the project. That said, while ZIOP's valuation is highly geared to commodity pricing (see discussion below), we believe that the project's high-quality resource base and robust economics provide some downside protection from the potential weakness in iron ore pricing.

### Our valuation is based on the following main assumptions:

- A long-term benchmark iron ore price of US\$90/t (62% Fe, CFR China), which translates into ZIOP's very conservative realised FOB price of US\$80/t for pellet feed. We assumed the current market premium of US\$2.5 for one Fe unit and the freight rate of US\$20/t (Pointe Noire-China). The project's valuation is very sensitive to changes in the iron ore price. Based on our simplified calculations and assuming no upward value-in-use adjustment for the low level of impurities, we estimate that at the current spot iron ore price of US\$130/t (CFR China), the project would enjoy a netback FOB price of about US\$120/t of pellet feed. Incorporating this price into our model would produce an NPV estimate of US\$3.4bn on a 100% basis (US\$1.7bn attributable). This is roughly a three-fold increase on our base case valuation. In general, a 10% increase in the benchmark iron ore price boosts our NPV estimate by 50%.
- We modelled the 12Mtpa hematite pellet feed operation based on a head/processed grade of 42% Fe, a saleable grade of 66% Fe and a mass recovery of c 45%. For the DSO operation, we assumed a saleable grade of 62% Fe and a 10% processing loss to convert the ROM ore to the saleable product.

- We assumed life-of-mine (LoM) opex of US\$30/t for the 12Mtpa pellet feed operation, based on the company's guidance and cash cost information available for the similar projects. DSO opex was modelled at US\$75/t for the initial (single) stage, with a gradual reduction to c US\$50-60/t as the DSO project is expected to benefit from the commissioning of a larger-scale pellet feed operation. Overall, we estimate that a 10% increase in opex would reduce the project's NPV estimate by 20%, and vice versa.
- Based on the company's guided capital intensity of c US\$200/t, we estimate that the 12Mtpa pellet feed operation will require some US\$2.5bn in development capex. Given the availability of the rail, road and port infrastructure, we assumed that the DSO project will only require US\$80m in capital cost to launch production and ramp it up to 2Mtpa. Our estimate is therefore at the low end of the range provided by the company. We note that a 10% increase in the overall pre-production capital cost reduces the project's NPV by 15%.
- While we forecast DSO production to commence in H215, reaching a sustainable run rate of 2Mtpa in 2016, we would not rule out the possibility of an earlier start up as the required transport infrastructure is essentially in place. The 12Mtpa pellet feed operation is expected to be launched in 2018, having an initial life-of-mine of 20 years based on the estimated hematite mining inventory of c 550-600Mt. The project's life is expected to be subsequently extended for another 10 years (to 30 years in total) by mining compact itabirite (transitional ore that is not as soft and friable as hematite, but not as hard as magnetite). We understand that this extension has already been incorporated in the project's capital cost estimate.

We note that our valuation is preliminary as it is based on the currently available guidance from the company. We intend to update our valuation following the release of the feasibility study results.

**Exhibit 5: ZIOP NPV (US\$m) sensitivity to changes in the iron ore price and discount rate**

	Benchmark iron ore price (US\$/t)					
	70	80	90	100	110	120
7.0%	492	1,363	2,233	3,104	3,974	4,845
8.0%	258	1,022	1,785	2,549	3,313	4,077
9.0%	71	744	1,418	2,092	2,766	3,440
10.0%	-80	518	1,116	1,714	2,312	2,910
11.0%	-200	333	867	1,400	1,933	2,466
12.0%	-297	181	659	1,137	1,615	2,093
13.0%	-374	56	486	916	1,346	1,776

Source: Edison Investment Research. Note: NPV is on a 100% basis.

## H113 financial results

We have updated our financial model for ZIOC to incorporate the recently released interim financial results. The company's H113 financial performance has been significantly distorted by the non-cash items, with a realised US\$2.2m forex loss arising from the weakening of UK pound (the currency in which ZIOC holds most of its cash) against the US dollar, resulting in an operating loss of US\$4.7m (US\$2.5m in H112). Adjusted for forex, share-based payments and its share of loss in associate (the JV that holds the Zanaga project), ZIOC's G&A expense has come in at US\$2.5m. This is broadly in line with our annualised FY13 estimate. The company reported an end of period cash position of US\$35.1m. Based on the first-half performance, we estimate a full-year cash balance of US\$32.9m (we note, however, that H113 FX loss could be reversed in the second half of the year). Further, following the agreed US\$17m investment in the JV, we forecast that ZIOC's cash position will fall to US\$12m by the end of 2014 (see Exhibit 5).

**Exhibit 5: Financial summary**

	US\$'000s	2009	2010	2011	2012	2013e	2014e
Year end 31 Dec		IFRS	IFRS	IFRS	IFRS	IFRS	IFRS
<b>PROFIT &amp; LOSS</b>							
Revenue		0	0	0	0	0	0
Cost of Sales		0	0	0	0	0	0
Gross Profit		0	0	0	0	0	0
EBITDA		(1,572)	(11,560)	(12,373)	(6,785)	(4,500)	(4,000)
Operating Profit (before GW and except.)		(1,572)	(11,560)	(12,373)	(6,785)	(4,500)	(4,000)
Intangible Amortisation		0	0	0	0	0	0
Exceptional items **		0	(2,307)	(2,151)	950	(2,366)	0
Other		0	0	0	0	0	0
Operating Profit		(1,572)	(13,867)	(14,524)	(5,835)	(6,866)	(4,000)
Net Interest		0	17	173	154	110	67
Profit Before Tax (norm)		(1,572)	(11,543)	(12,200)	(6,631)	(4,390)	(3,933)
Profit Before Tax (FRS 3)		(1,572)	(13,850)	(14,351)	(5,681)	(6,756)	(3,933)
Tax		0	0	0	0	0	0
Profit After Tax (norm)		(1,572)	(11,543)	(12,200)	(6,631)	(4,390)	(3,933)
Profit After Tax (FRS 3)		(1,572)	(13,850)	(14,351)	(5,681)	(6,756)	(3,933)
Average Number of Shares Outstanding (m)		131.6	257.3	274.8	274.7	274.1	274.1
EPS - normalised (c)		(1.19)	(4.49)	(4.44)	(2.41)	(1.60)	(1.43)
EPS - normalised & fully diluted (c)		(1.19)	(4.49)	(4.44)	(2.41)	(1.60)	(1.43)
EPS - FRS 3 (c)		(1.19)	(5.38)	(5.22)	(2.07)	(2.46)	(1.43)
Dividend per share (c)		0.0	0.0	0.0	0.0	0.0	0.0
Gross Margin (%)		-	-	-	-	-	-
EBITDA Margin (%)		-	-	-	-	-	-
Operating Margin (before GW and except.) (%)		-	-	-	-	-	-
<b>BALANCE SHEET</b>							
Fixed Assets		198,439	192,799	182,977	189,009	184,890	201,890
Investments in associate		198,439	192,799	182,977	189,009	184,890	201,890
Current Assets		8,117	49,398	45,151	40,665	33,086	12,128
Debtors		11	80	104	282	145	145
Cash		8,106	49,318	45,047	40,383	32,941	11,983
Current Liabilities		(246)	(1,013)	(892)	(1,647)	(1,148)	(1,148)
Creditors		(246)	(1,013)	(892)	(1,647)	(1,148)	(1,148)
Long Term Liabilities		0	0	0	0	0	0
Long term borrowings		0	0	0	0	0	0
Net Assets		206,310	241,184	227,236	228,027	216,828	212,870
<b>CASH FLOW</b>							
Operating Cash Flow		139	(2,292)	(4,646)	(5,477)	(5,053)	(4,025)
Net Interest		0	0	28	0	0	0
Tax		0	17	173	154	110	67
Capex		0	0	(16)	(90)	(5)	0
Acquisitions/disposals		0	0	0	0	0	0
Financing		23,967	44,595	0	(383)	(328)	0
Other		(16,000)	0	0	(515)	0	(17,000)
Net Cash Flow		8,106	42,320	(4,461)	(6,311)	(5,276)	(20,958)
Opening net debt/(cash)		0	(8,106)	(49,318)	(45,047)	(40,383)	(32,941)
HP finance leases initiated		0	0	0	0	0	0
Other		0	(1,108)	190	1,647	(2,166)	0
Closing net debt/(cash)		(8,106)	(49,318)	(45,047)	(40,383)	(32,941)	(11,983)

Source: Zanaga Iron Ore Company accounts, Edison Investment Research. Note: \*Average number of shares outstanding is net of treasury shares; \*\*Exceptional items include forex and share-based payments.

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