

**INDUSTRY** Invictus Energy Ltd (IVZ) **MCAP** \$150.7m \$0.20/share Date: 6<sup>th</sup> July 2022

**RECOMMENDATION** Speculative Buy (*unchanged*) and PT \$0.34/share (*upgraded from \$0.32/share*)

**EVENT** Upgrading its giant Mukuyu Prospective Resource; *with more prospects to come*

### KEY POINTS

An imminent onshore 2-well Zimbabwean frontier petroleum exploration program – including the mega-sized Mukuyu prospect:

- Upgraded Mukuyu to 20 TCF of gas and 845 mm bbl of liquids prospect on *gross unrisksed Mean Resource* estimate.
- This equates to 4.3 billion bbl oil equivalent (boe), up 159% from the previous estimated Mean Resource of 8.2 TCF and 247 mm bbl of condensate. IVZ has an 80% interest, a net of 3.44 billion boe, *prior to a government 10% back-in right*.
- Key change was adding an 8<sup>th</sup> target horizon, the shallow ~850 metre Post Dande labelled the 200 Horizon. Reprocessing old Mobil and its own new in-fill seismic has enabled better definition and a Resource estimate upgrade of other horizons.
- Seismic amplitude anomalies often associated with in-place hydrocarbons, have both increased the potential size and confidence of the Mukuyu prospect. This has led IVZ to raise its Chance of Success to ~18.7%, from ERCE's 13.1%
- Our valuation rises 8% and our Target Price by \$0.02/share to \$0.34/share on enhanced project confidence.

**Near term share price catalysts** include gazettal of the 7x expansion of acreage, a farmout on superior terms to the last reported offer, drilling operations starting and potential for hydrocarbon shows in one or more of 7 horizons drilled in Mukuyu.

*Investors should be aware that this basin is undrilled and presents explorers many unknowns. See page 2 for assessment of chance of success. Risks are partly compensated by the large prospect size and Mukuyu well is engineered to target 7 horizons.*

**Market capitalisation implied unrisksed prospect value – is around \$A0.02/mcf**

**Market capitalisation implied prospect value** is a cheap at A\$0.05/boe or A\$0.01/mcf of gas equivalent on an unrisksed Mean Resource size. This is based upon IVZ's *post-govt back-in* and using \$0.20/share or \$150m fully diluted capitalisation.

Our favoured measure is the *Best Estimate* that still show a compellingly cheap estimate of A\$0.11/boe or A\$0.02/mcf of gas. *The "Best" estimate represents an assessed 50% probability that the Resource could be bigger than stated.*

Table 1 – Mukuyu's multi-horizon unrisksed prospect size for gas and condensate with contrast to previous Mean estimate.

SG 4571: Cabora Bassa Project			Prospective Resource - Gas bcf				Condensate mm bbl - (unrisksed)				Previous Mean estim			
Formation	Horizon No.	Depth m.	Low	Best	High	Mean	Low	Best	High	Mean	Gas	Condensate		
Top Dande	200	850	152	828	4,252	1,871	4	28	174	77	0	0		
Intra Dande	250		83	465	2,488	1,075	2	16	104	44	0	0		
Intra Dande	350	1,200	273	1,498	7,951	3,387	7	51	315	137	400	0		
Forest	400	1,800	418	2,077	9,923	4,488	11	70	412	183	1,600	0		
Pebbly Arkose	500	2,300	169	1,014	5,635	2,469	5	35	239	102	1,400	60		
Upper Angwa	600	2,700	139	835	4,578	1,996	4	28	193	83	4,400	181		
Upper Angwa	650		172	929	4,886	2,135	5	37	228	99	0	0		
Lower Angwa	700	3,500	228	1,190	5,818	2,591	7	48	280	120	400	6		
Total Gross Resource in bcf & mm bbl			1,634	8,836	45,531	20,012	45	313	1,945	845	8,200	247		
Total Gross Resource: mil. bbl oil equiv:			327	1,836	9,795	4,295					1,661			
<b>Total Net IVZ</b>			<b>72.0%</b>	<b>equity</b>	1,176	6,362	32,782	14,409	32	225	1,400	608	5,904	178
Gas+ Cond.: mil bbl oil equivalent			235	1,322	7,053	3,093					1,196			
Gas + Cond.: bcf equivalent			1,364	7,669	40,905	17,937					6,935			
<i>Mkt Cap</i>		<i>Valn per boe</i>	\$0.64	\$0.11	\$0.02	\$0.05								
<i>IVZ share price</i>		<i>Valn per mcf</i>	\$0.11	\$0.02	\$0.00	\$0.01								
<b>\$0.200</b>		<b>\$150.7</b>												

Source: Invictus release 5<sup>th</sup> July 2022; Prospective Resources are potentially recoverable but bears discovery and project risks.

## Activity update and near-term market sensitive events

On the 5<sup>th</sup> of July 2022 IVZ released the independent findings of ERCE, a consultancy specialist in petroleum reservoir evaluation. ERCE have significantly upgrades the unrisks resource potential of the giant Mukuyu prospect. This is located in Northern Zimbabwe in the undrilled Cabora Bassa Basin, where IVZ have an 80% equity within the original boundaries of 100,000 ha SG 4571 licence.

- The well pad, sited on the southern flank of Mukuyu has been completed and the Exalo rig will be progressively mobilised through July after clearing customs in Tanzania and Mozambique. Drilling is estimated to now start in mid-August 2022.
- The expect gazettal of a 7-fold licence expansion in coming weeks to 709,300 hectares – where IVZ has already shot seismic and will be delivering interpretation of potentially *five or more* Basin Margin Play prospects.
- IVZ will select and drill one of the several identified Basin Margin leads. While likely to be much smaller size than Mukuyu's Basin-Centre play, the Basin Margin prospects diversify chances of a discovery. In analogue African rift basins, once identified Basin Margin prospects have better than 80% wildcat discovery rate.
- Also, in coming weeks we anticipate that IVZ will announce a farm-in partner(s). While the Mukuyu exploration well is fully funded, a farmout will be designed to complete funding of the 2nd well and facilitate a follow-on program, upon success
- New farm-in partners can bring capital and new marketing or technical skills to enhance project development.

## Chance of Discovery adjusted Resource valuation – market pricing only \$0.04 to \$0.15/mcf versus \$0.65/mcf potential

Consultants ERCE have attached a volume-weighted 13.1% chance of success chance of discovery and subsequent development. In Table 2 – ERCE attached a chance of success of 14% for the upper hozison targets and 12% for the lower horizon potential reservoirs. Table 2's final line calibrates the overall volume-weighted chance of success for ERCE and IVZ.

ERCE's estimates were focussed upon estimating the various reservoir units' volumetric recovery. However as IVZ noted, ERCE estimates of chance of success, did not take into account the presence of seismic amplitudes anomolies that sometimes indicate presence of hydrocarbons.

IVZ have incorporated the amplitude anaomolies which adds to conviction that reservoir may contain hydrocarbons. In Table 2 this sees a higher 18.5% chance of success for the Best Posperspective Resource Case and 18.7% for the much larger Mean Prospective Resource. Table 2 looks at implied market valuation of at \$0.20/share and netting out government back-in rights.

Table 2: Examining the "Best" and Mean Measure of Prospective Resource – adjusted for chance of success

SG 4571: Cabora Bassa Project			Chance of success %		Best - bcfe		Best- bcfe		Mean - bcfe		Mean- bcfe	
Formation	Horizon No.	Depth m.	ERCE	Invictus	ERCE	Invictus	ERCE	Invictus	ERCE	Invictus	ERCE	Invictus
Top Dande	200	850	14%	31%	139	307	324	718				
Intra Dande	250		14%	31%	78	173	186	412				
Intra Dande	350	1,200	14%	14%	251	251	585	585				
Forest	400	1,800	14%	14%	348	348	777	777				
Pebbly Arkose	500	2,300	12%	30%	146	365	367	918				
Upper Angwa	600	2,700	12%	21%	120	209	297	520				
Upper Angwa	650		12%	15%	137	172	325	406				
Lower Angwa	700	3,500	12%	10%	176	147	394	329				
Total Gross Resource in bcf & mm bbl					1,395	1,972	3,257	4,667				
Total Gross Resource: mil. bbl oil equivalent					240		562					
<b>Total Net IVZ</b>			<b>72.0%</b>	<b>equity</b>								
Gas+ Cond.: mil bbl oil equivalent					173	245	404	579				
Gas + Cond.: bcf equivalent					1,004	1,420	2,345	3,360				
Mkt Cap		Valn per boe			\$0.87	\$0.62	\$0.37	\$0.26				
IVZ share price		Valn per mcf			\$0.15	\$0.11	\$0.06	\$0.04				
\$0.200		150.7			13.1%	18.5%	13.1%	18.7%				
Overall - Chance of Success %					13.1%	18.5%	13.1%	18.7%				

Using ERCE's Chance of success factor the valuation implied is A\$0.15/mcf and \$0.06/mcf for the Best and Mean cases respectively, based upon *gross resources* of 1,395 bcfe (*equivalent includes condensate*) and 3,257 bcfe respectively..

Using IVZ's Chance of success factor the valuation implied is just A A\$0.11/mcf and \$0.04/mcf for the Best and Mean cases based upon upon *gross resources* of 1,972 bcfe and 4,667 bcfe 1,395 bcfe and 3,257 bcfe respectively.

## Comparing our ~A\$0.65/mcf equivalent on success case on a 1.0 TCF development case

Extracting from our own analysis in the IVZ initiation report, developing a 1,000 bcf field with associated condensate would generate a unit NPV of ~A\$0.65/mcf equivalent.

See page 4 [RR IVZ 2022 03 30](#) – of 22-page *Initiation Report*. The 1.0 TCF case estimates a unit NPV of \$0.75/boe at 20% risking. This translates to an unrisks \$3.75/boe or A\$0.65/mcf equivalent converting at 5,800 mcf = 1 bbl oil equivalent.

This means on a discovery case there is plenty of valuation upside from current implied valuation of just A\$0.04/mcf to A\$0.15/mcf outlined in Table 2.

**Valuation Upgraded 8% from \$0.32/share to \$0.346/share; new price target \$0.34/share – is up \$0.02/share**

We have reviewed our valuation case from the initiation report and have increased our valuation 8% from \$0.32/share risked valuation to \$0.346/share. Our new price target is \$0.34/share, up 6.3% from \$0.32/share. See *Tables 3 and 4 below*.

Table 3 Updated detailed valuation of Invictus Energy – Source is PAC estimates

Invictus Energy Ltd	\$0.200	Petroleum	Gas Sales	Confidence	Risked	Risked	Deliveries	Unrisked	Unrisked	Deliveries
Diluted No. sh.	Ownership	Sales	Only	Factor	Valuation	Valuation	Valuation	Valuation	Valuation	Valuation
804.6	%	mm boe	bcf	%	A\$m.	A\$/sh	A\$m/boe	Valn A\$m.	A\$/sh	A\$/boe
Bloc Prospectivity	100.0%	1,672	8,200							
Assume discovery	100.0%	615	2,988	37%						
1.5 TCF Case	49.5%	152	740	25%	121.3	0.15	0.80	485.1	0.60	3.19
1.0 TCF Case	49.5%	101	493	25%	99.4	0.12	0.98	397.6	0.49	3.92
Basin Margin C	49.5%	25	123	20%	23.9	0.03	0.94	119.3	0.15	4.71
Basin Margin D	49.5%	25	123	20%	23.9	0.03	0.94	119.3	0.15	4.71
Projects Valuation	49.5%	304	1,479	24%	268.4	0.33	0.88	1,121.3	1.39	3.68
Net Cash				100%	14.8	0.02		14.8	0.02	
Net ST Liabilities				100%	-0.1	0.00		-0.1	0.00	
Options Exercise				100%	10.2	0.01		10.2	0.01	
Other incl. Corporate Cost				100%	-14.8	-0.02		-14.8	-0.02	
Financials & Corporate		NetDeliveries			10.2	0.01		10.2	0.01	
Total Valuation		304	1,479	25%	<b>278.6</b>	<b>0.346</b>		<b>1,131.4</b>	<b>1.41</b>	

Our valuation of IVZ includes two gas projects with associated liquids; a 1.5TCF project plus a further 1.0 TCF development.

Unrisked, the equivalent in billion of cubic feet including condensate comes to 2,972 bcf for PAC's projects. ERCE's "Best" Case is rated as a 50% probability outcome is 10,651 bcfe of Unrisked Prospective Resource. This means ERCE's estimate is 3.6x PAC's project simulation. *We see plenty of head room for our assumed projects. See Table 5.*

PAC assigned a 25% confidence factor to risk-adjust the projects for the 1.5 TCF case. *We formerly had only a 20% confidence factor for a 1.0TCF project. We now boost that confidence factor to 25% for the 1.0 TCF project.* This added \$23m to our valuation or \$0.02/share fully diluted. The reason was that even on ERCE's conservative "Chance of Success" metrics, their estimate of Risked Prospective Reserves is 1.9x our updated risked project assessment. We note IVZ is 2.7x PAC's simulation. Again our risked assessment of possible projects is well covered by both ERCE and IVZ's field estimates adjusted for Chance of Success.

We also adjusted for extra capital raising during JunH22 and added exercise of in-the-money options.

Table 4 Change in NPV valuation components since initiation report

DCF BASED VALUATION					
DCF after project risking	Disc Rate %	A\$m	\$/share	Risked %	
1.5 TCF Case	50%	0.0%	4.4	\$0.00	0%
1 TCF Case	50%	0.0%	22.9	\$0.02	5%
Basin Margin C	50%	0.0%	0.9	\$0.00	0%
Basin Margin D	50%	0.0%	0.9	\$0.00	0%
<b>Projects Valuation</b>	<b>50%</b>		<b>29.1</b>	<b>\$0.02</b>	<b>2%</b>
Net Cash	est.	JunH'22	9.9	\$0.01	0%
Net ST Liabilities	est.	JunH'22	0.1	\$0.00	0%
Options Exercise	est.	JunH'22	-3.9	-\$0.01	0%
Other incl. Corporate Cost		JunH'22	-1.9	\$0.00	0%
<b>Total Valuation</b>			<b>33.3</b>	<b>\$0.026</b>	<b>0%</b>

Table 5 Implied Unrisked and Risked Resources: PAC compared to ERCE and IVZ

PAC Partner Project simulation	100% Field Equity Unrisked Projects		100% Field Equity Risked Projects	
	mmboe	bcf e	mmboe	bcf e
1.5 TCF Case	308	1,785	77	446
1.0 TCF Case	205	1,188	51	297
<b>Total</b>	<b>512</b>	<b>2,972</b>	<b>128</b>	<b>743</b>
ERCE Best Case	1,836	10,651	240	1,395
IVTG's Best Case	1,836	10,651	340	1,972
ERCE compared to PAC	3.6	3.6	1.9	1.9
IVZ compared to PAC			2.7	2.7

Price Target: 12-months

**\$0.020**

## Comparison of Reconnaissance Africa Limited and IVZ on implied value of Prospective Resource

Reconnaissance Energy Africa Ltd (TSXV: RECO) is a Canadian oil and gas company engaged in the opening of the newly discovered deep Kavango Sedimentary Basin, in the Kalahari Desert of northeastern Namibia and northwestern Botswana, where the Company holds petroleum licences comprising ~8.5 million contiguous acres. This is Southern African rift-basin play that has some similarities to IVZ's position further to the east in northern Zimbabwe.

Recon Africa is an operator currently engaged in a 4-well program to drill seismically defined targets. Both the seismic and the current well program followed reconnaissance wells to gather stratigraphic information and that encountered oil shows. In April 2022, Recon Africa filed its first Prospective Resource report for certain leads in the Kavango Basin, onshore Namibia, with an effective date of December 31, 2021.

We summarise their Prospective Oil & Gas Resource (unrisked) and also their Risked Best Estimate of Prospective Oil & Gas Resources in Table 3 below:

Table 3: Recon Africa's market implied valuation for Unrisked and Risked Prospective Resources

Reconnaissance Energy Africa Ltd. Kavango Basin, Onshore Namibia	Prospective Oil & Gas as at 31 dec2021			Risked Oil & Gas as at 31 dec2021			
	mm bbl	bcf	total boe	mm bbl	bcf	total boe	
Price CAD	\$5.12						
no. shares m.	201.23						
Capitalisation	\$1,030.3						
AUDCAD	0.885						
Capitaln A\$m	\$1,164.2						
Equity %	90%						
		Gross	Gross	Gross	Gross	Gross	
		999	1,423	1,244	74	32	79
		Net Recon	Net Recon	Net Recon	Net Recon	Net Recon	Net Recon
		899	1,281	1,120	63	28	71
		Market cap implied value in A\$/boe			Market cap implied value in A\$/boe		
				\$1.04			\$16.36
		Market cap implied value in A\$/mcf equiv			Market cap implied value in A\$/mcf e		
				\$0.18			\$2.82

Source: 12 May2022 Recon release

Based on Recon Africa's **Unrisked Prospective Resource** and its current capitalisation and currency conversion: the valuation is A\$1.04/boe or \$0.18/mcfe (equivalent). This compares to IVZ's "Best" Unrisked Resource valuation of A\$0.11/boe and A\$0.02/mcfe, which is much cheaper.

Recon Africa's **Risked Prospective Resource** at current capitalisation and currency conversion see the unit valuation at A\$16.36/boe or \$2.82/mcfe. This compares to IVZ's "Best" Risked Resource valuation of A\$0.87/boe and A\$0.15/mcfe based upon ERCE's assumption on chance of success.

Using IVZ's higher chance of success upon the Best Risked Prospective Resource the implied valuation is even lower at A\$0.62/boe or A\$0.11/mcfe

Clearly the market is rating Recon Africa far more highly than IVZ to the extent that on Unrisked Prospective Resource the valuation is 9-time higher. Recon Africa's Risked Prospective Resource the valuation is between 18 to 26 times higher.

Relative performance chart of IVZ versus Recon Africa – IVZ overall upward trend over the 1st year

Recon Africa should be expected to trade at a unit of resource premium to IVZ at this stage of the companies exploration programs. This is because Recon Africa have drilled stratigraphic wells that enable more accurate time to depth conversion for the later seismic they acquired. In addition, live oil samples were recovered in these wells. This suggests an active petroleum system is at work. An additional reason is that Recon Africa is more likely than IVZ to find a larger percentage of liquids (oil and condensate) versus gas, and this may lead to higher NPV per boe of Recoverable Resource.

While acknowledging Recon Africa's exploration milestones, the 9.0x to 26-times premium appears very large. It suggests that IVZ's 2-well program is relatively undervalued.

IVZ.ASX@AUX / RECO.TSXV@TSXVD: 0.0342



Perhaps Recon Africa's high market rating may be reflected in IVZ if it locates an active petroleum system.

**Mukuyu prospect – the proposed exploration well path is designed to test 7 intervals down to the 650 level**

The planned well path for the Mukuyu-1 well is designed to be roughly parallel to, and on the upthrown side of a distinctive fault.

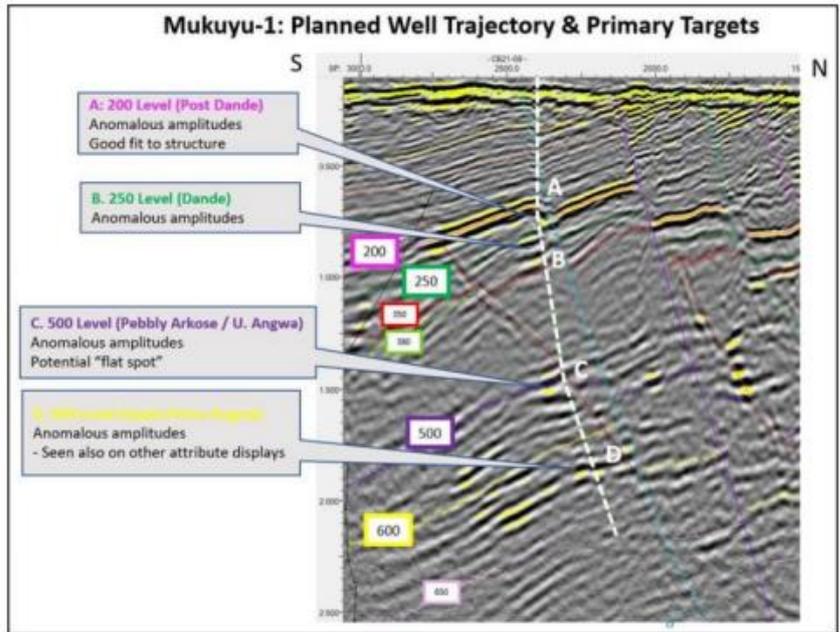
The well aims to penetrate at structurally favourable positions in a number of the seven named horizons on the diagram on right. These range from the 200-level down to the 650 level.

The deepest reservoir target at the 700 level is not being drilled as the deviated well design makes it impractical to reach it at an optimal point.

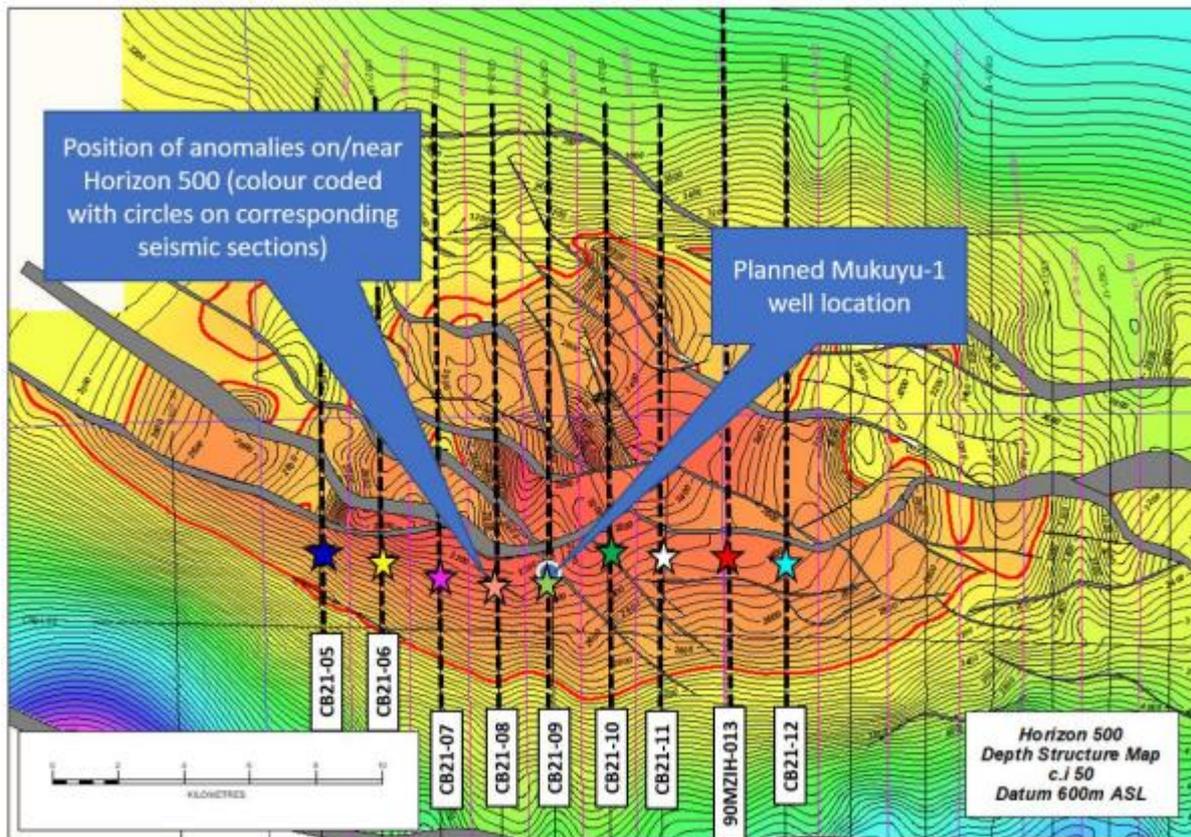
On the seismic section, bright section horizons with flattened bases may be indicative of a phase change (like from gas to water) within an interpreted reservoir unit.

While seismic information is of great value, only drilling and testing will be able to definitively see if the large Mukuyu structure was able to trap and retain large quantities of gas and condensate at this part of the fields complex of fault blocks.

*Diagrams Source: IVZ Presentations 2022*



**The Mukuyu prospect is large at ~200km<sup>2</sup> with the exploration well location on its southern flank.**



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### Recommendation Criteria

#### Investment View

PAC Partners Investment View is based on an absolute 1-year total return equal to capital appreciation plus yield.

A Speculative recommendation is when a company has limited experience from which to derive a fundamental investment view.

Buy	Hold	Sell
>20%	20% – 5%	<5%

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