

THE PATH TO NAMIBIAN GAS MONETIZATION

A PRESENTATION FOR THE NAMIBIA OIL & GAS CONFERENCE

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SHEPHERDS TREE CORPORATE PROFILE

Shepherds Tree is an internationally experienced local transaction and strategy advisory boutique with global reach.



CORPORATE FINANCE

End-to-end transaction advisory services, including valuations, investment memo writing, capital raises, target origination, deal structuring, local ownership enablement, mergers, acquisitions, divestitures, stock exchange listings, and more.



ADVISORY & RESEARCH

Tap into our many years of research and strategy consulting experience to provide concise input to key business decisions. We also partner with our clients' management teams for seamless strategy implementation.



FAMILY OFFICE & FOREIGN INVESTOR SERVICES

Comprehensive investment facilitation, from research and deal origination to due diligence, cross-border transactions, secretarial/ accounts, portfolio management, and directorships.



NAMIBIAN MARKET ENTRY

We have analysed over 600 Namibian businesses. With our experience setting up shareholding structures to meet local ownership requirements, we're the ideal partner to navigate a Namibian market entry.



PROJECT PREPARATION

Project preparation for large scale infrastructure projects to bankability, capital raising based on project finance principles and offering practical advice to get the projects off the ground.



VENTURE PARTNERING

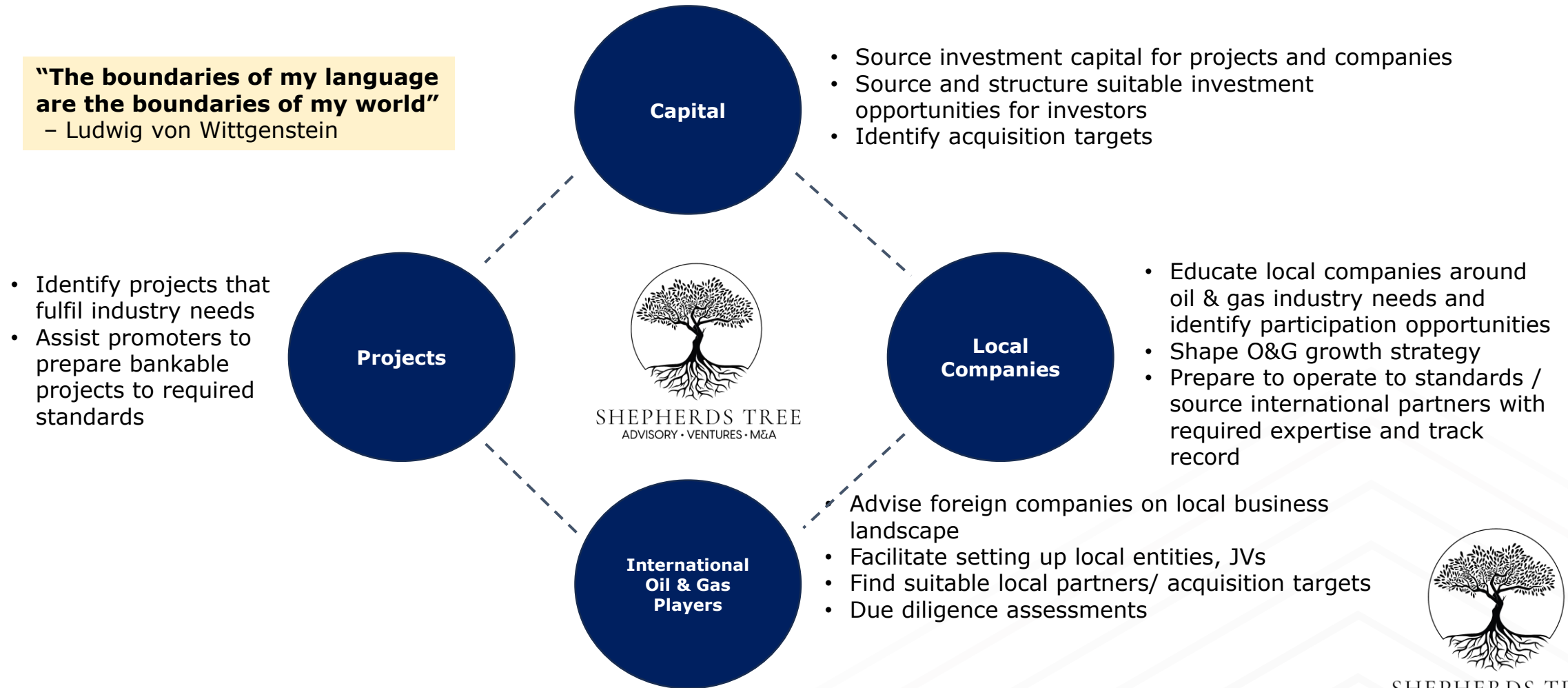
In certain instances, we partner or co-invest with clients to build sustainable businesses in the local operating environment.



SHEPHERDS TREE OIL & GAS SECTOR SERVICE OFFERING

Shepherds Tree seeks to connect the dots between capital, required projects, Namibian companies and international industry players to enable a thriving ecosystem and local participation in the nascent Namibian Oil & Gas industry.

**"The boundaries of my language
are the boundaries of my world"**
– Ludwig von Wittgenstein



FOUNDER & MANAGING PARTNER: EKKEHARD FRIEDRICH

Ekkehard Friedrich is experienced working as a private equity executive and strategy consultant across Namibia, Sub-Saharan Africa, Europe and the Middle East.

PROFILE

- Ekkehard is a seasoned financier with 16 years of experience across private equity, transaction advisory and strategy consulting.
- He is entrepreneurial in nature having co-founded several successful businesses, holds board positions at leading Namibian companies and has built deeply rooted local and international networks that he can readily leverage.
- Ekkehard founded Shepherds Tree in 2023 with the aim of filling a gap in the market for infrastructure project preparation, sourcing local investment opportunities and advising local corporates on strategy development.

CAREER



RAND Strategy Advisors

accenturestrategy



- He is a former Partner at Eos Capital, Namibia's leading private equity firm. Prior to that he had an international career as a management consultant at Accenture Strategy/ M&A and at Rand Strategy Advisors, where he worked with major corporates

and private equity firms on a variety of assignments across Sub-Saharan Africa, Europe and the Middle East.

QUALIFICATIONS

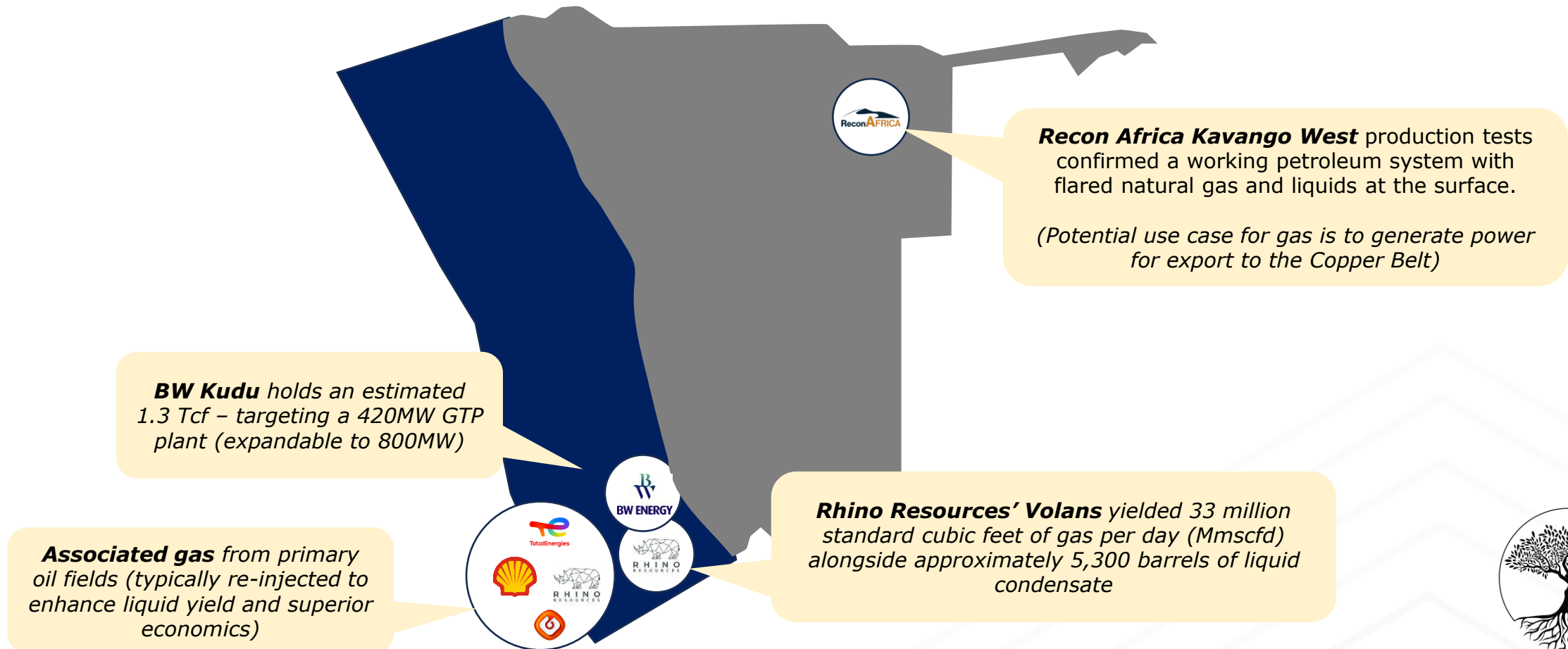
- Ekkehard holds BEng (Industrial-Mechanical) and MSc (Engineering Management) degrees from Stellenbosch University and is a CFA Charterholder.

NOTABLE CLIENTS/ DEALS / ASSIGNMENTS



NAMIBIAN GAS STATUS

Ongoing Orange Basin exploration and appraisal efforts have yielded sizeable ultra deepwater associated gas volumes, recently also in shallower waters (Volans) and some finds onshore (Kavango West); Kudu holds 1.3 Tcf proven non-associated gas reserves and Namcor estimates 2.2 Tcf overall proven reserves.

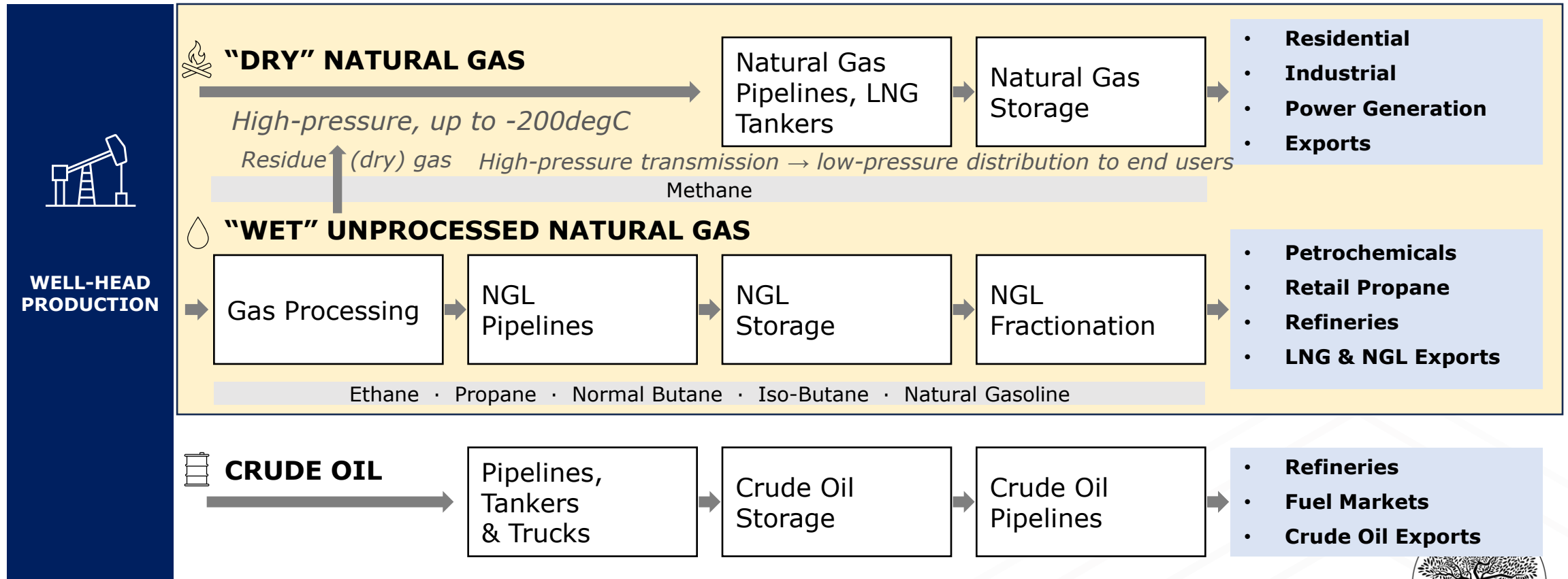


Sources: BW Energy, Rhino Resources, Recon Africa, Namcor



COMPLEXITY OF GAS VS. OIL VALUE CHAIN

The gas value chain is more complex and costly than the oil value chain and differs for Natural Gas and Natural Gas Liquids (detail for illustrative purposes only).



GAS PROJECTS TAKE LONGER TO DEVELOP THAN OIL

Oil monetises on a tanker; gas needs a buyer, a pipeline or an LNG train before it can be sanctioned — so gas follows oil, it rarely leads it.

4–6 years

Conventional oil: discovery to first oil

10–12+ years

Gas: discovery to first gas, where an LNG or pipeline route is required

≈ 6 years

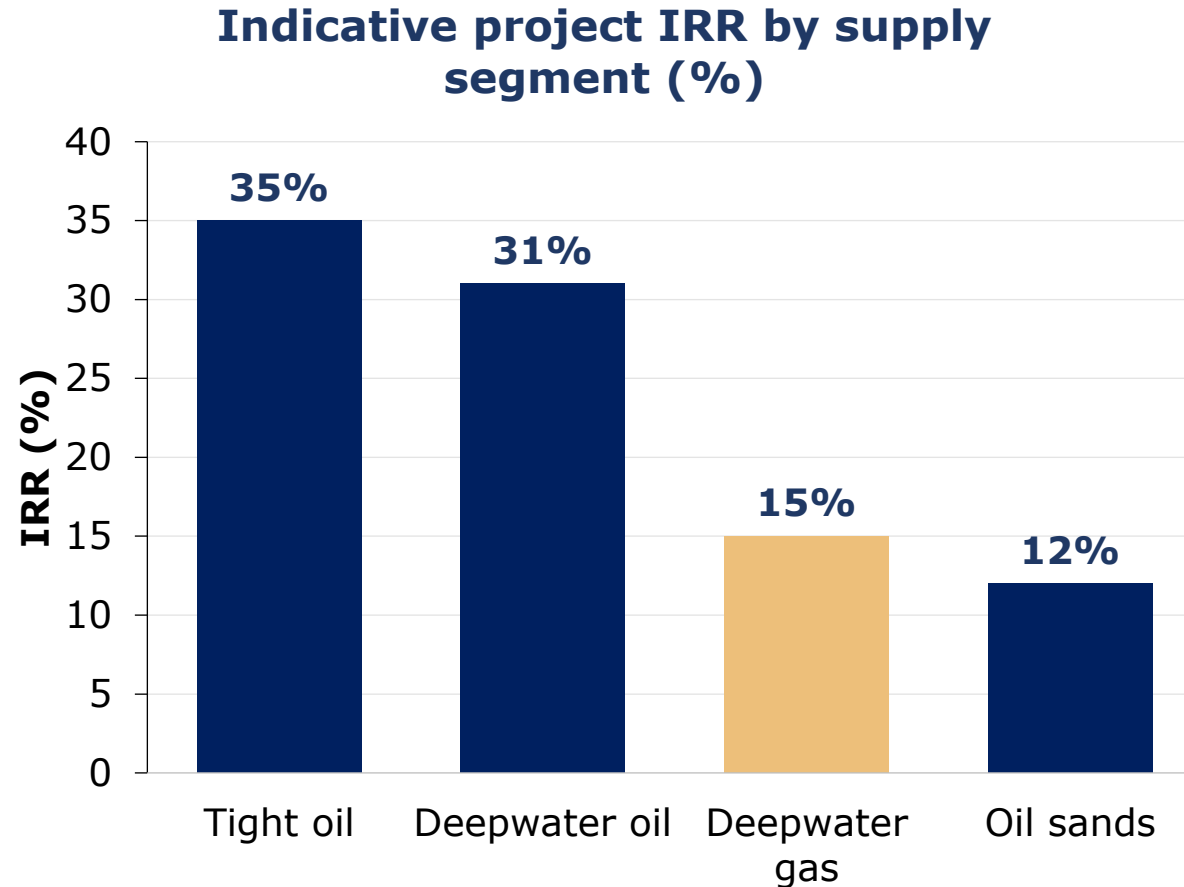
Typical additional lag for gas in the same basin

Project / basin	Hydrocarbon	Discovery	First production	Lag
Liza – Stabroek, Guyana	Oil	2015	2019	< 5 years
Bakté, Mexico (early production)	Oil	2023	2024	~ 1 year
Gorgon, Australia	Gas (LNG)	1981	2016	~ 35 years
Aphrodite / Cronos, Cyprus	Gas	2011	2028 (target)	17+ years
Kudu, Namibia	Gas	1974	Not yet sanctioned	50+ years
Bonny LNG, Nigeria	Gas after oil	1960s oil first	1999 LNG	Oil funded gas

Orange Basin oil targets first production around 2030 — Kudu and the Venus / Mopane associated gas could realistically follow in the mid-2030s unless aggregation and an export route are locked in early.

DEEPWATER OIL VS DEEPWATER GAS: THE RETURNS GAP

Indicative project economics — deepwater oil earns roughly twice the IRR of deepwater gas selling into spot (equity like), but gas tends to have more long-term stable contracts which may make it interesting for governments (bond-like).



Why gas returns lag oil

- Deepwater oil: ~US\$43/bbl breakeven, ~6-year payback (Rystad)
- Deepwater gas: South-East Asia's >US\$20bn "Deepwater 2.0" wave clusters at ~15% IRR
- Gas sells into domestic or contracted markets, not Brent-linked pricing, and needs midstream built before first revenue
- Gas needs anchor demand and fiscal risk-sharing to clear oil's hurdle

Source: Rystad Energy (oil segment IRR, at US\$70/bbl); Wood Mackenzie Lens Upstream Valuations (deepwater gas IRR). Indicative.

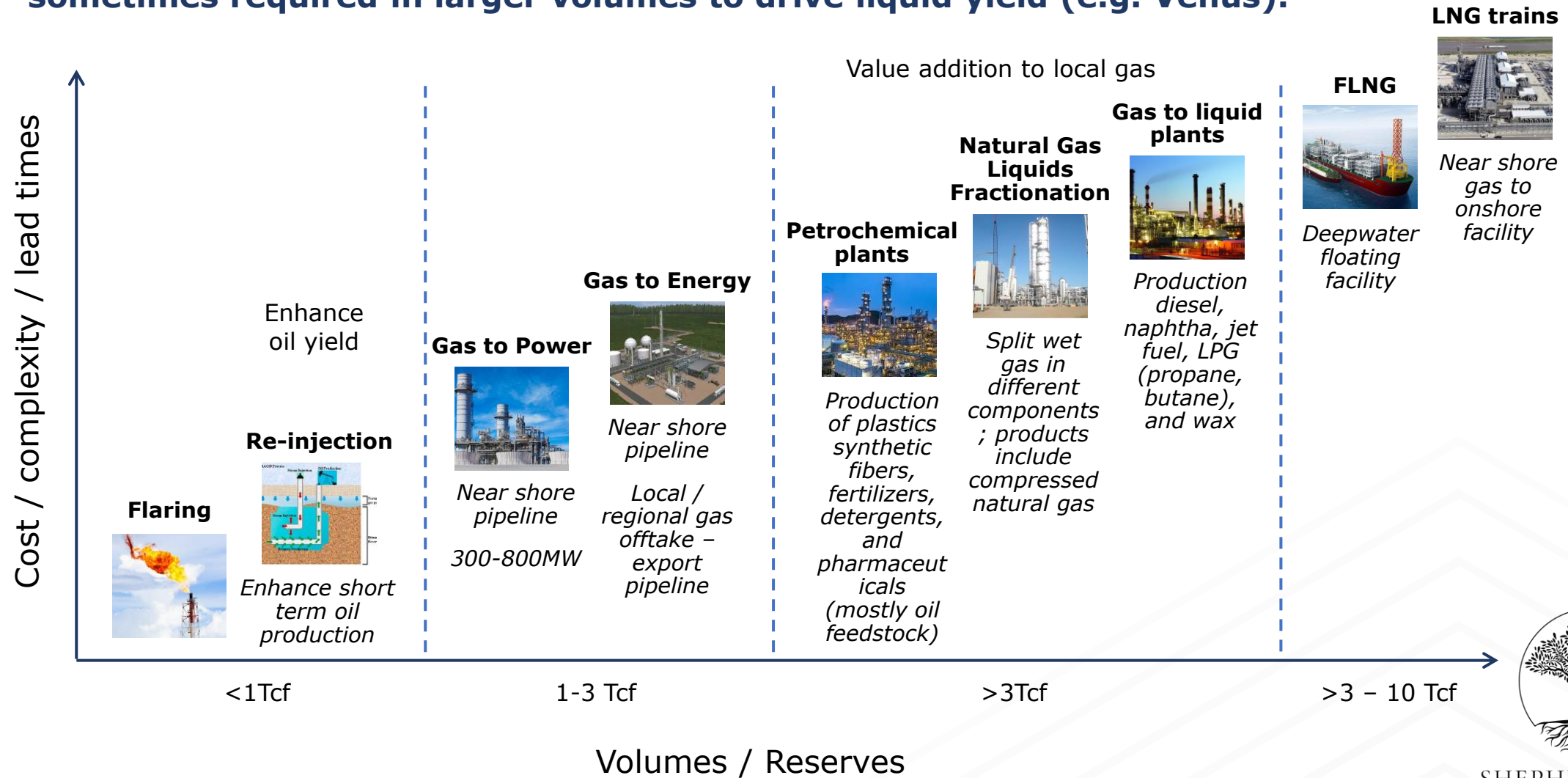


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SUPPLY CONSTRAINTS OF POSSIBLE GAS USE CASES

CONCEPTUAL

Different gas use cases are possible but differ for available gas volumes; re-injection is sometimes required in larger volumes to drive liquid yield (e.g. Venus).



EXPORT REVENUE: Mozambique LNG projects

Mozambique started with FLNG for fields with reserves >3Tcf and cost >USD7bn; Onshore LNG is typically built for >60Tcf and cost >USD20bn with longer development times.

Project	Operator (Key Partners)	Recoverable Reserves (Tcf)	Estimated Cost (USD bn)	FID	First production
Coral South FLNG	Eni (ExxonMobil, CNPC, ENH)	~3.4	8.0	2017	2022
Coral North FLNG	Eni (CNPC, KOGAS, ENH)	~3.4	7.2	2025	2028
Mozambique LNG (Area 1)	TotalEnergies (Mitsui, PTT, KOGAS, ENH)	60	20.0	2019	Suspended: 2021 (insurgency); Resume: 2025;
Rovuma LNG (Area 4)	ExxonMobil (Eni, CNPC, ENH)	85	21.9	Awaiting	Late 2020's



LOCAL MARKET SUCCESS: Brazil developed the local market first

Imports created the market, oil revenues funded the infrastructure, domestic pre-salt gas then displaced the imports.



PHASE 1 · 1999 – 2010s Imported first

- GASBOL pipeline from Bolivia on stream 1999: 3,150 km, up to 30 MMcm/d
- Imported molecules seeded gas-fired power, industry and city-gas demand
- Grid, tariffs and offtake contracts matured around a secure import supply
- By the 2010s Brazil had gas demand and a grid, but little domestic supply



PHASE 2 · 2010s – 2024 Fund from oil

- Campos and Santos pre-salt oil cash flow funded gas pipelines and plants
- Mexilhão (2011), then Routes 1 and 2, evacuate associated pre-salt gas
- Route 3: 355 km, 18 MMcm/d; Boaventura UPGN 21 MMcm/d, live Nov 2024
- Divestment of TAG and NTS opened third-party access to the pipeline grid



PHASE 3 · 2025 onwards Switch to local

- Domestic pre-salt gas injected at Cabiúnas into the GASBOL / TAG / NTS grid
- Bolivian imports fall away as local volumes displace them

The market came before the molecules – demand, grid and contracts were established on imported gas, oil revenues then paid for domestic offshore gas and infrastructure, and local supply was switched into a market that already existed.

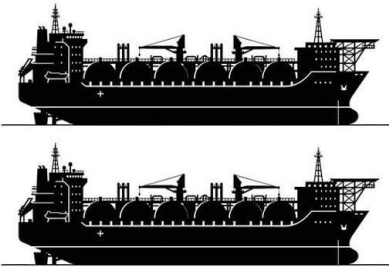


COSTLY SOCIAL PROJECT?: GUYANA GAS TO ENERGY

Pipeline plus two plants now guided at c. USD2bn – Guyana's largest-ever infrastructure spend - exceeds the country's total 2018 national debt, is riddled with delays and controversies and may sacrifice oil production yield.



**Liza & Destiny
FSPOs**



Operating (2019 onwards)
Currently re-inject
associated gas



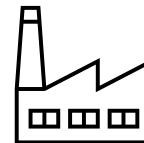
**USD1 bn 220km offshore
30km onshore pipeline**



Completed by Exxon 2024
(lying idle plugged waiting
for GTE/GTP)



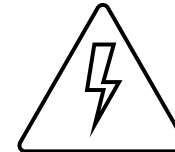
NGL plant



Ph1: 4,000 b/d NGL
Ph1: 6,000 b/d NGL

Delayed and overbudget, expected
to come onstream end 2027

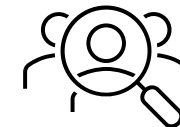
GTP plant



300MW
300MW



**Local & international
offtakers**



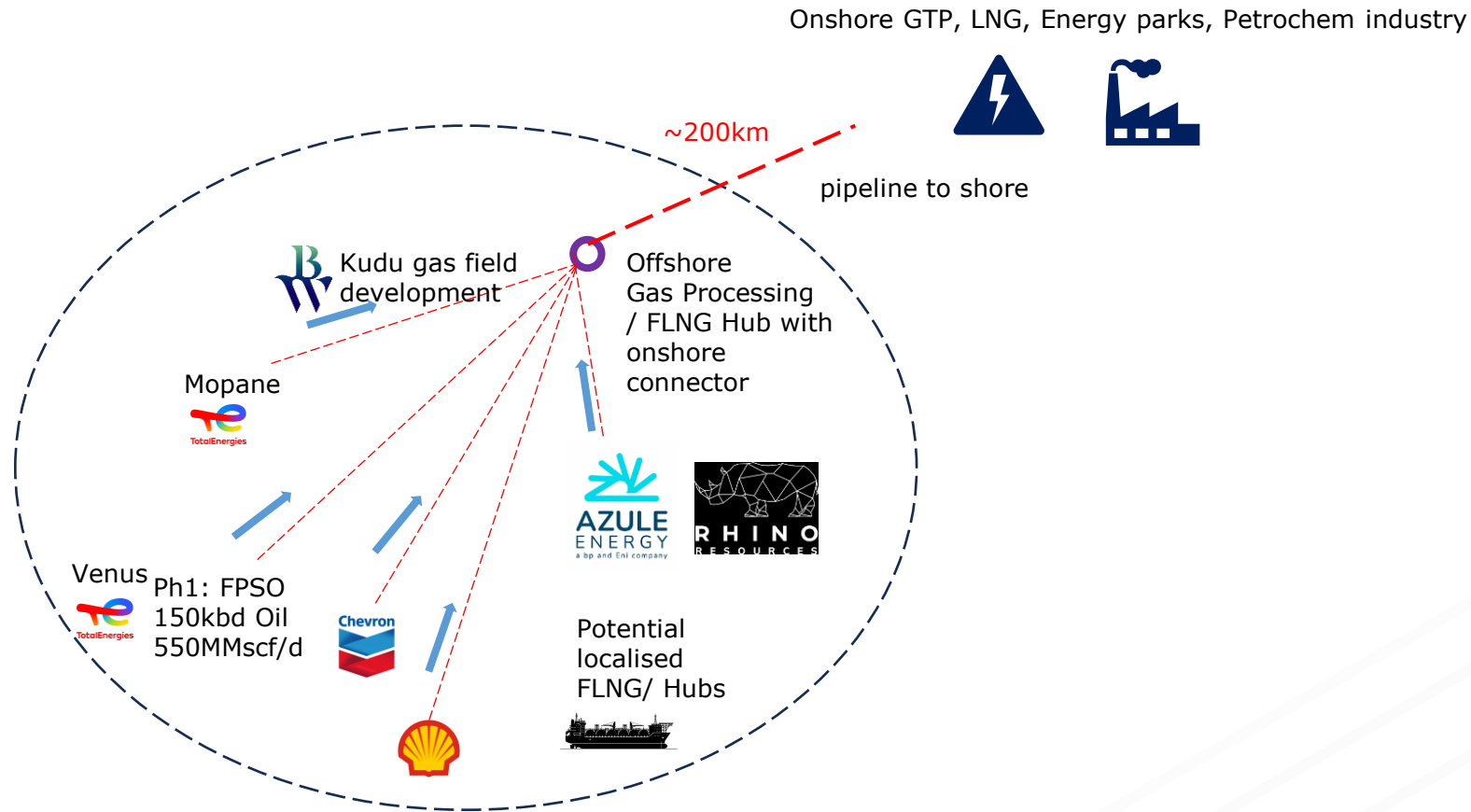
230MW local demand (currently
served through expensive
powerships and other plants)

Consumer off-take terms and final
project financing agreements remain
tightly guarded and subject to ongoing
public scrutiny and legal debates

Most of the overrun was self-inflicted: ground risk was underestimated, delay risk sat with the state, and no one owned integration – THIS COULD HAVE BEEN AVOIDED BY A COORDINATED GAS MASTERPLAN

EARLY NAMIBIAN GAS MONETIZATION CONCEPTS

Ideas to unitize expensive gas infrastructure to unlock associated gas value have been floated– realization of such shared infrastructure requires the development of an integrated gas masterplan.

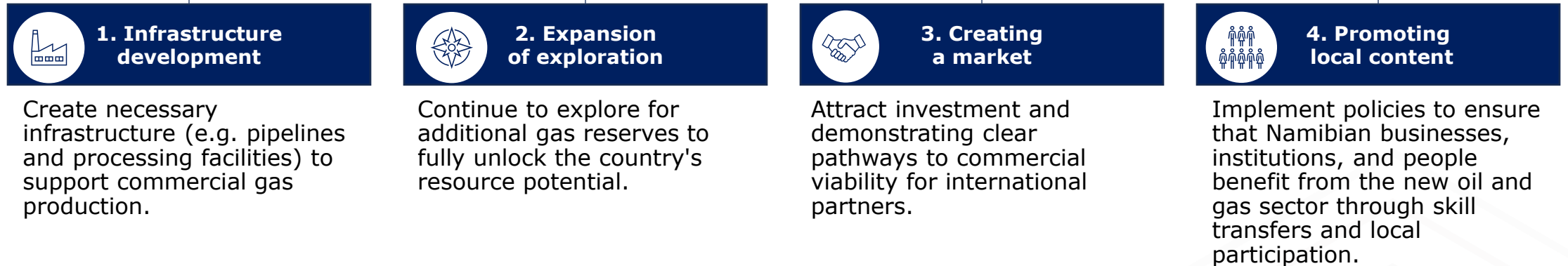


Shared infrastructure and pipelines to reduce the cost of a gas development and enhance viability are being discussed by different stakeholders, sometimes in isolation.

STATUS OF NAMIBIA'S GAS MASTER PLAN

Namcor has taken the first steps to develop a comprehensive Gas Master Plan to guide gas commercialization and evaluate the overall best development scenarios for the country.

The government and NAMCOR are focused on maximizing the value of gas discoveries through a mix of domestic and international projects and focusing on 4 key pillars:



Namibia is taking the right approach by dedicating resources towards developing a well thought-through Gas Master Plan early on its O&G development lifecycle.

CONCLUSION

- Gas is more difficult and expensive to develop than oil and usually takes longer
- Monetization a country's gas resources requires complex planning and analysis
- Monetization options need to speak to reserve sizes
- Demand, offtake price, midstream infrastructure cost will be a key considerations that can lead to inferior project returns over long periods
- While LNG exports could be developed commercially, serving local demand needs to be carefully considered and planned to avoid wasted resources
- A carefully crafted gas masterplan is critical in developing the country's gas resources in the most effective manner

Thank you

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