



# RSS NMR

THE SIMPLE WAY OF EXPLORATION

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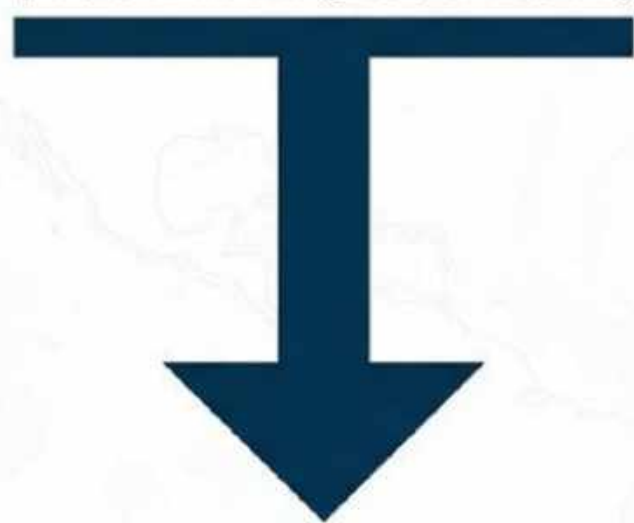


The “Notice” for a successful exploration for a private E&P

# THE GLOBAL CONTEXT IS HYPER-COMPETITIVE

## Exploration Budgets

\$100 Billion (2008-2014)



\$60 Billion (2015-2020)

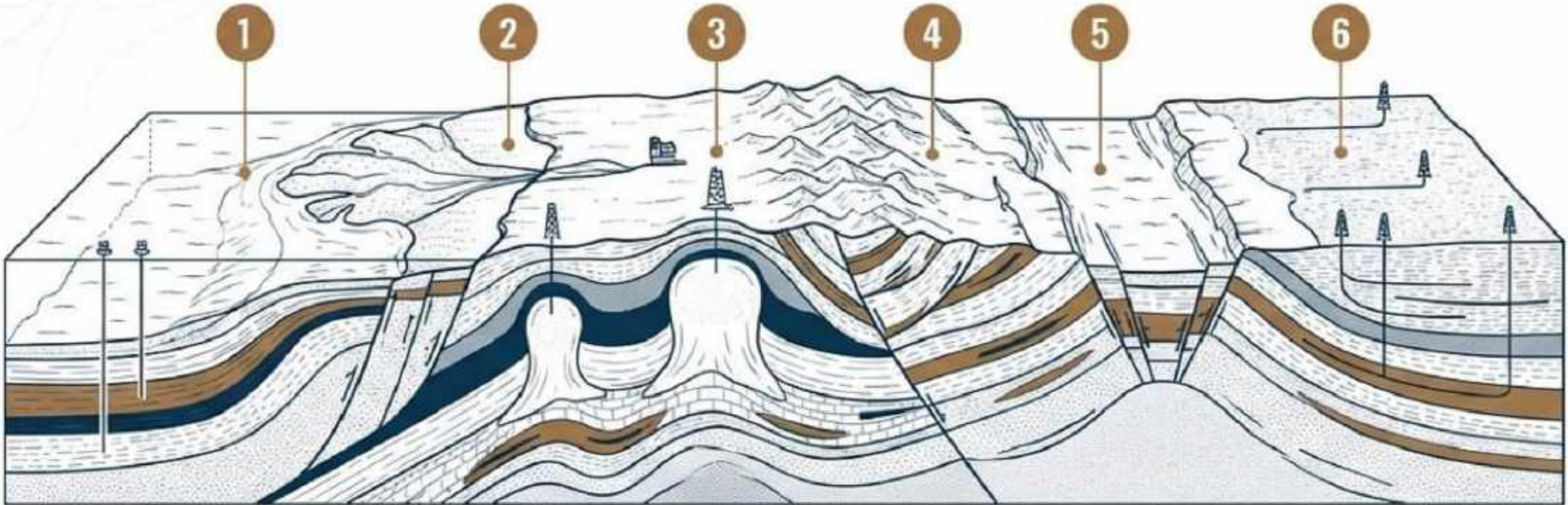
## COMPETING FOR INVESTMENT

Canada, Cuba, Denmark, Dominican Republic, Equatorial Guinea, Faroe Islands, Gabon, Lebanon, Madagascar, Namibia, Netherlands, New Zealand, Norway, Pakistan, Philippines, Seychelles, Sierra Leone, Somalia, Somaliland, South Sudan, Suriname, Tunisia, UAE, Uganda, Uruguay...

With exploration budgets cut by nearly 50%, capital has become selective. Over 25 exploration rounds occur annually—investors have choices.



# CAPITAL CHASES SPECIFIC GEOLOGICAL THEMES



For the last decade, exploration has concentrated in ~20 countries based on these six themes.

1  
**LARGE DELTAS & DEEP OFFSHORE**

2  
**ABRUPT MARGINS**

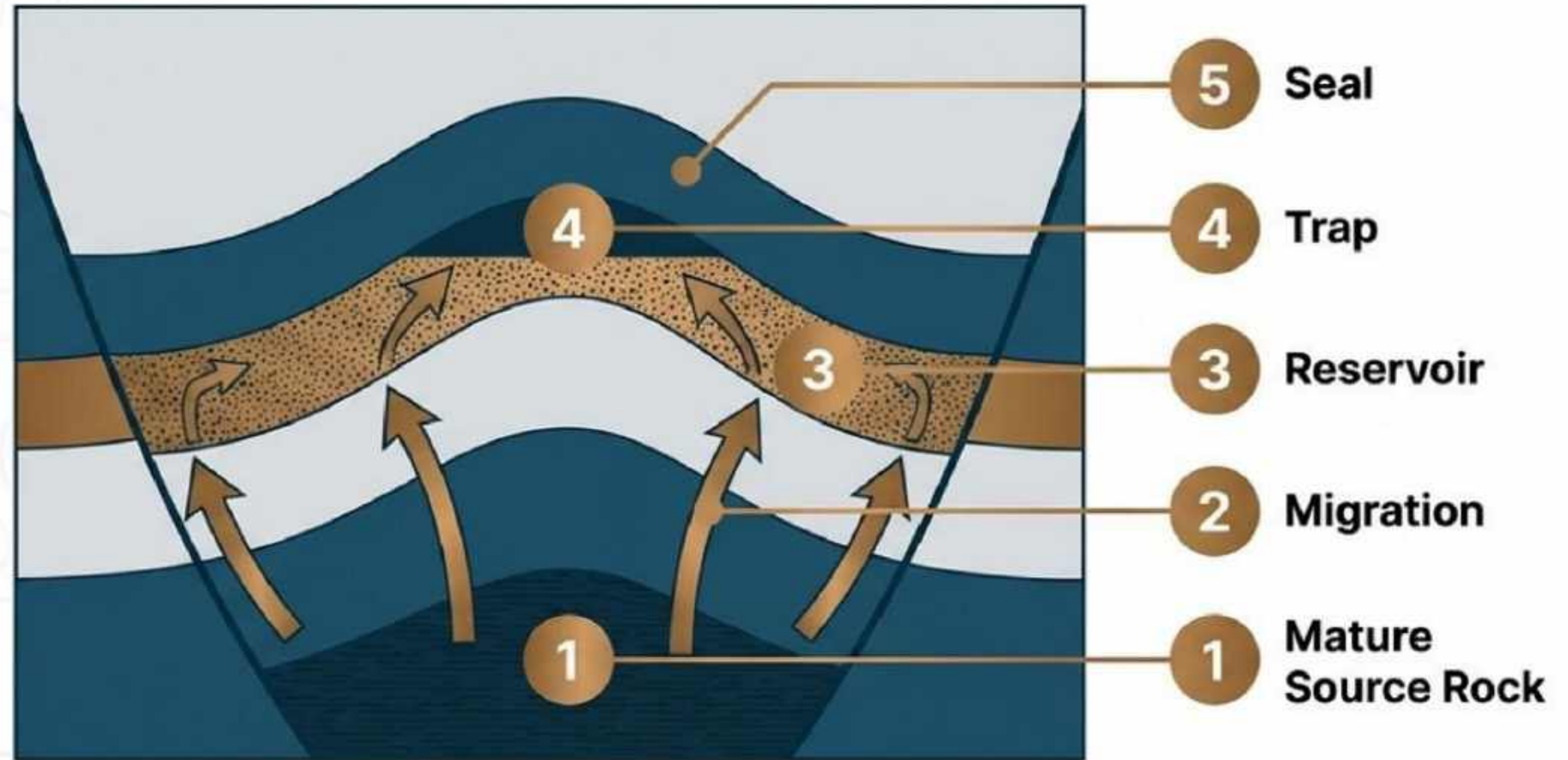
3  
**PRE-SALT & CARBONATES**

4  
**FOOTHILLS**

5  
**RIFTS & GRABENS**

6  
**UNCONVENTIONALS**

# THE GEOLOGY OF SUCCESS: THE PETROLEUM SYSTEM



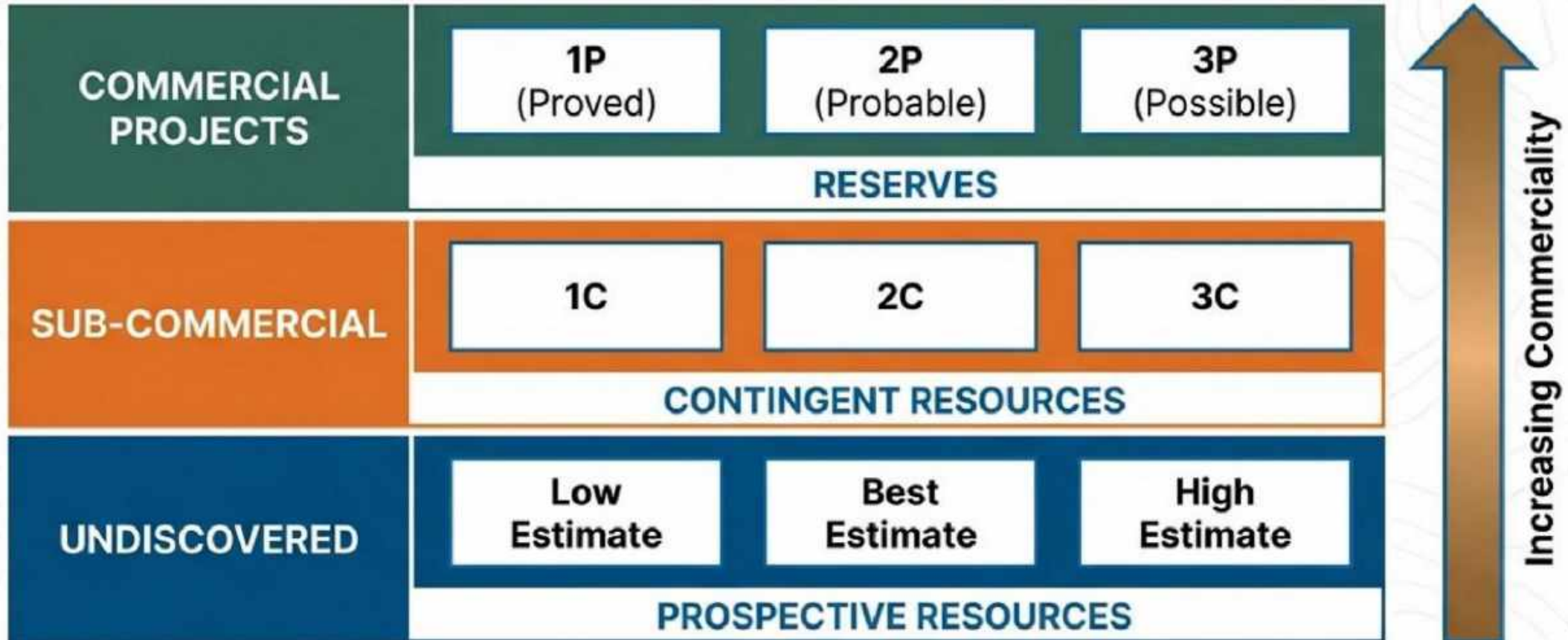
Exploration is the search for a producible subsurface volume.  
All five elements must align to create a viable Prospect.

# **NOC , ministry of petroleum auction exploration blocks to bring in private capital, transfer risk, and maximize value for the state.**

## Main reasons

- Shift exploration risk to private E&P companies. Exploration is very risky and expensive, with many dry holes; by auctioning blocks, the state avoids paying upfront for seismic, drilling, and appraisal that may never lead to production
- Attract investment and technology the state company may lack. Private operators (international and domestic) bring advanced seismic, drilling, reservoir engineering, and project-management capabilities, which can increase the chance of discoveries and improve recovery factors.
- Accelerate exploration of the sedimentary basins. A single NOC or agency usually cannot explore the whole country quickly; multiple private E&P firms working in parallel can cover more acreage and shorten the time to new production.
- Capture economic rent via competitive bidding. Well designed auctions (bonus bids, work program bids, royalty or profit share bidding) use competition between companies to reveal how valuable the acreage really is, so the government can capture a larger share of the rent in signature bonuses, royalties, and taxes.

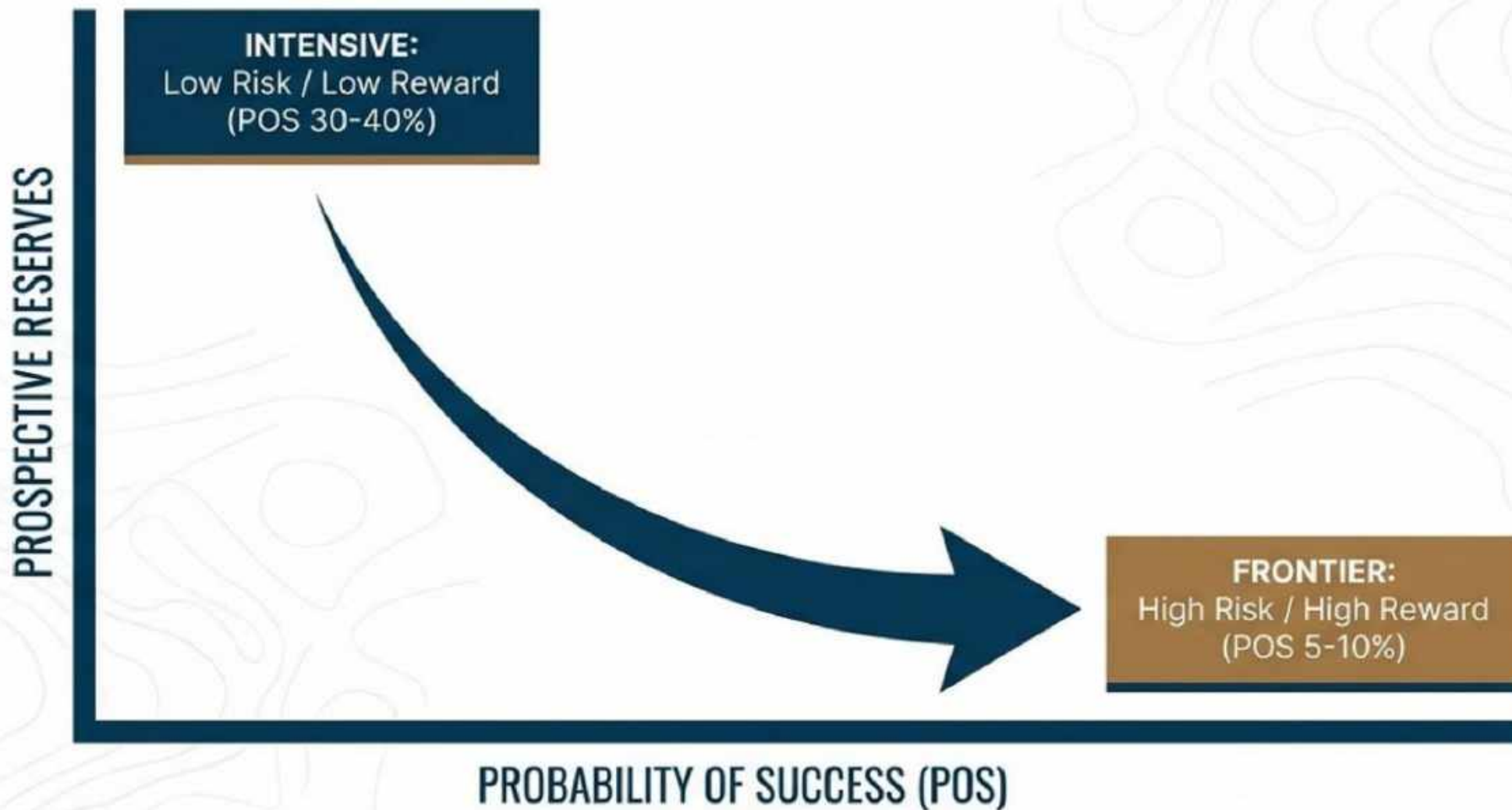
# SPEAKING THE LANGUAGE OF VALUE



Value increases as you move from Prospective Resources to Commercial Reserves. The goal is to move volume up this chart.



# DEFINING YOUR RISK PROFILE



Understanding whether your basin is 'Intensive' or 'Frontier' dictates your fiscal terms and target investors.

## They pretend

- **Increase transparency and reduce corruption.** Public licensing rounds with clear criteria are generally seen as more transparent and less discretionary than direct negotiations, which helps political legitimacy and reduces accusations of “giving away” public resources.
- **Support fiscal and development goals.** New production from auctioned blocks generates royalties, taxes, and sometimes state-company carried interests, which fund the budget and public programs, and create local jobs and infrastructure.
- **Portfolio optimization for the NOC.** The national oil company can focus its limited capital on core or strategic areas while farm-out or auctioning other blocks; in some regimes it later joins in the development phase under specific terms.

## How the mechanism typically Works

- The ministry or hydrocarbons agency defines blocks, legal terms (concession, PSC, service contract), and minimum work programs, then organizes competitive licensing rounds.
- Companies bid on parameters such as signature bonus, exploration work commitment, royalty/profit-oil share, or local content, and the highest or best bid wins the right to explore and eventually produce, subject to meeting those commitments

# THE THREE GOLDEN RULES OF MANAGEMENT



## 1. KNOW YOUR TERRITORY

Assess underground characteristics and prospectivity.



## 2. UNDERSTAND YOUR WORTH

Determine bargaining power and design fiscal conditions.



## 3. KEEP KNOWLEDGE CLOSE

Manage data and maintain a strategic vision.

Only the National Oil Company or Agency can implement these rules.

# INFORMATION ASYMMETRY CREATES WEAKNESS



Scale, quality,  
geographic distribution

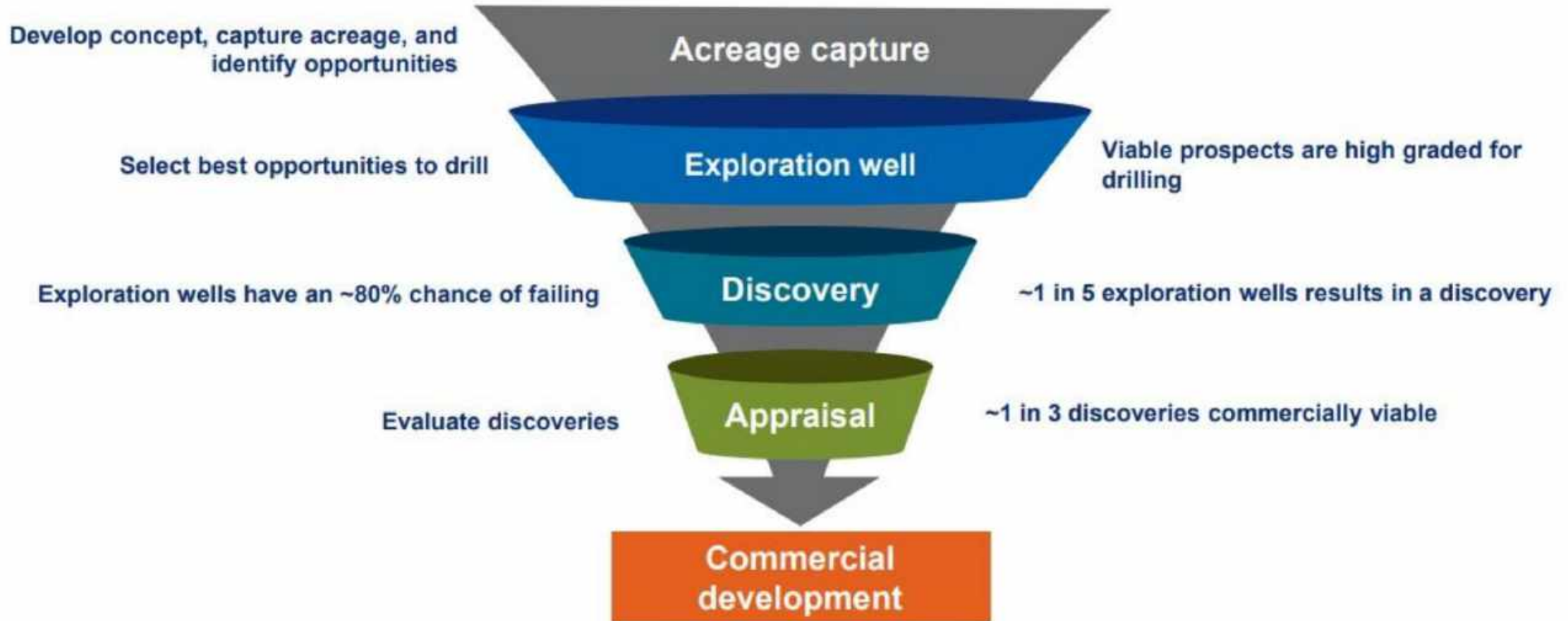
Value vs. Risk

You cannot design appropriate legal and fiscal conditions without first understanding the value and risks of your own resources. Competitive bidding criteria must be based on geological reality, not wishful thinking.



# Exploration is a portfolio investment business

Only a fraction of new opportunities will be successful



# Private investors in state oil block auctions face layered risks: subsurface, commercial, political, legal, and ESG/operational.

## Subsurface and technical risks

- Geological risk. Seismic and well control are often sparse in frontier or deep blocks, so there is a real possibility of no commercial discovery and total loss of exploration capital (seismic, G&G, wildcats).
- Reservoir and development risk. Even if hydrocarbons are present, reservoir quality, pressure, and fluid properties may not support economic development at the fiscal terms offered; recovery factors can be lower than pre bid models assumed.

## Commercial and price risks

- Commodity price volatility. Long lead times mean oil/gas prices at FID and during production can deviate sharply from bid time assumptions, eroding project value or making developments uneconomic.
- Cost inflation and overruns. Service costs for rigs, FPSOs, subsea equipment, and local contractors can rise, especially if many projects in the region compete for the same capacity, squeezing margins.
- Illiquidity and capital lock up. Participating interests in exploration blocks can be hard to sell, and work commitments make it costly to exit before drilling is complete.

# Winning poker hand for the NOC or Ministry of Petroleum





- Regulatory uncertainty and change. Delays in key laws, unclear regulations, or frequent changes in fiscal terms (royalties, taxes, profit oil splits) can undermine original economics; uncertainty has even stalled licensing rounds in some countries.
- **Contract stability and renegotiation risk.** Governments may seek to “re balance” contracts after major discoveries or price spikes, through new taxes, local content rules, or partial expropriation.
- **Transparency and process concerns.** Allegations of opaque or discretionary awards, shifting pre qualification rules, or political interference can undermine investor confidence and complicate financing.

## Operational, social, and environmental risks

- Permitting and ESG constraints. Tightening environmental standards, flaring limits, or protected area rules can delay or block projects; social opposition can also drive moratoria or litigation.
- Security and community issues. In some regions, sabotage, theft, or community conflict adds operational risk, increases OPEX, and can force shut ins.

# THE EXPLORATION TOOLBOX



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## GRAVIMETRY

Identifies density differences (sedimentary rocks vs. volcanic bodies).



## MAGNETICS

Identifies ores, basement depth, or hydrocarbon-saturated reservoirs.



## MAGNETOTELLURIC

Discriminates between insulating (clay) and conductive (aquifer) soils.

Inexpensive geophysical methods allow for a priori calibration, though they cannot replace drilling.

**The NOC, or the Department of Petroleum, needs money from private Energy & Petroleum companies to learn more about its own subsoil.**

But in poker, you can pay just a little bit to see what happens.



But in that case, you have a big advantage; your opponent doesn't know it! It's the RSS-NMR



## Reminder

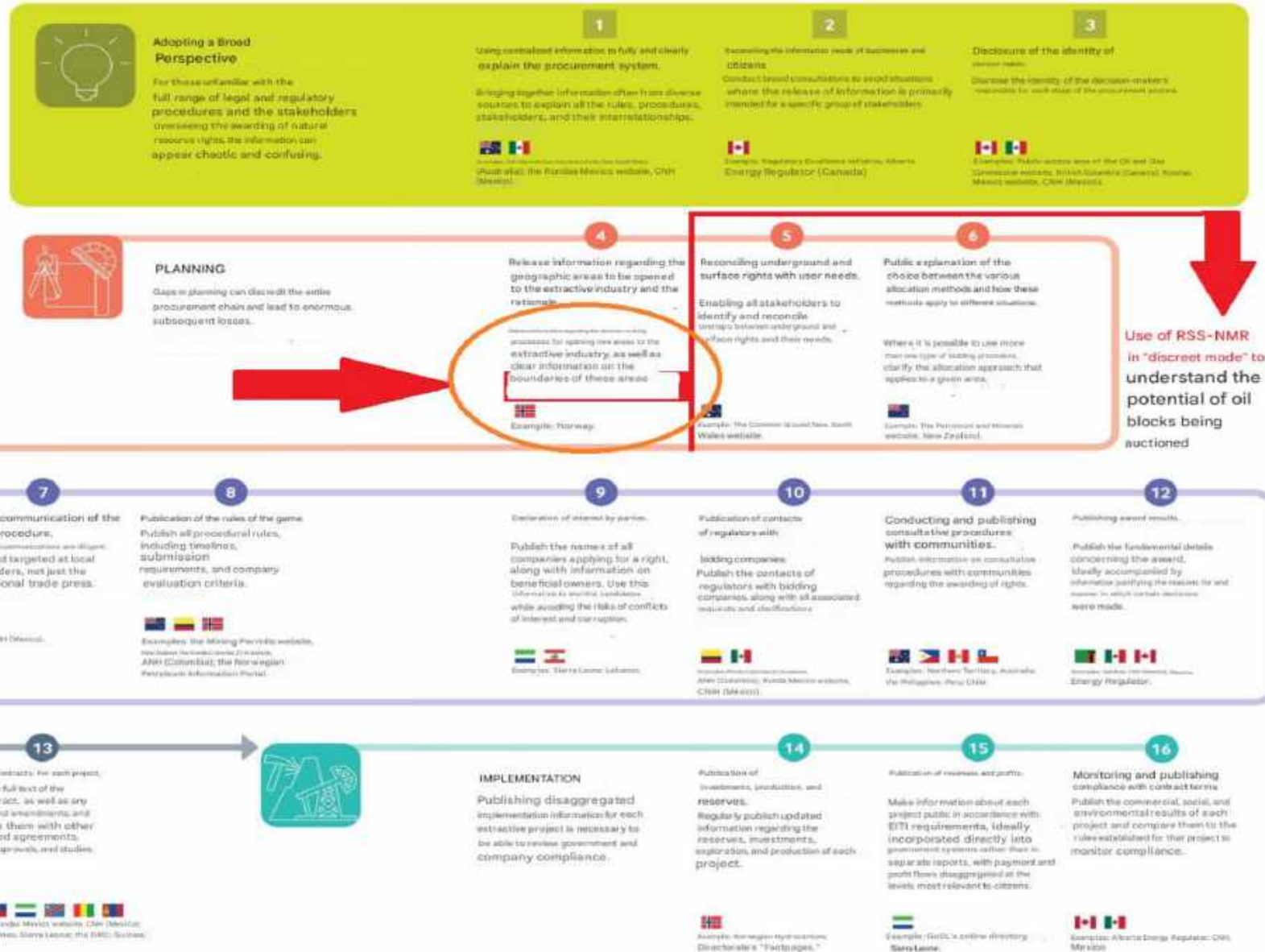
- RSS-NMR is a rapid exploration method that optimizes drilling plans to reduce the actual areas to be explored at greater depths.
- **No authorization** is required from the NOC or the Ministry since we conduct everything from our laboratories in Sevastopol.
- **No engineers** are needed in the field,
- **no subsidiaries** need to be established; it offers complete anonymity.

# Timing

# 1-the good moment

## Open Procurement for Oil, Gas, and Mineral Rights

Transparency in the awarding and management of oil, gas, and mineral rights can strengthen business participation, competition, and public trust. These recommendations and examples of good practice show how governments are making progress.



Use of RSS-NMR in "discreet mode" to understand the potential of oil blocks being auctioned



PRIVATE E&P, take care and

**See what others  
don't.**

( The national oil and gas agency)



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Do not pay to the NOC  
before to know if the bloc  
have an economical interest



# A New Paradigm: Shifting from Brute Force to Intelligence

The next evolution in exploration isn't just a better sensor; it's a fundamentally smarter methodology.



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**GEO-NMR.NET**

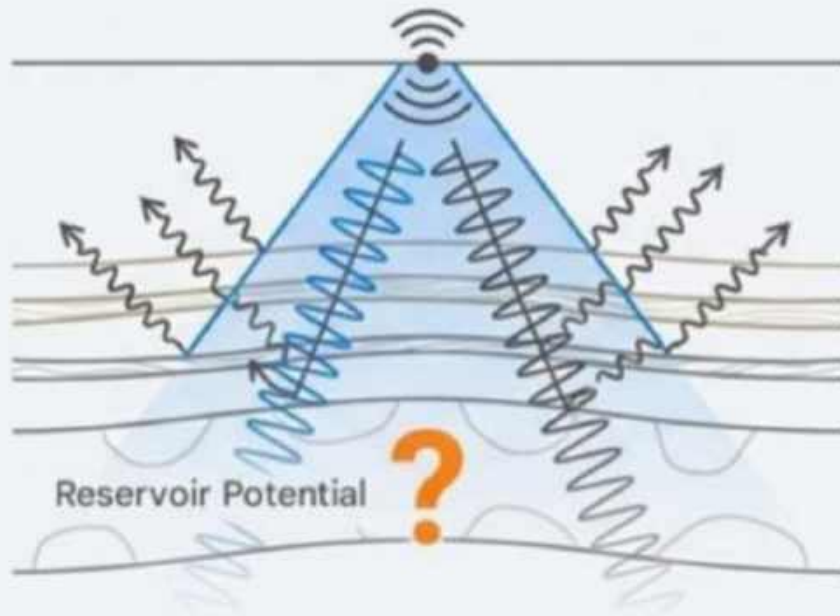
Exploration by satellite

**Introducing RSS-NMR:** A combination of Remote Sensing (RSS) and Nuclear Magnetic Resonance (NMR) technology that provides a fast, economic, and **physics-based pre-screening** of your acreage.

Before committing millions to seismic or drilling, RSS-NMR gives you a direct indication of where hydrocarbons are most likely to be found. It allows you to explore with intelligence, not just force.

# The solution: Move from interpreting a reflection to measuring a resonance.

Indirect Detection

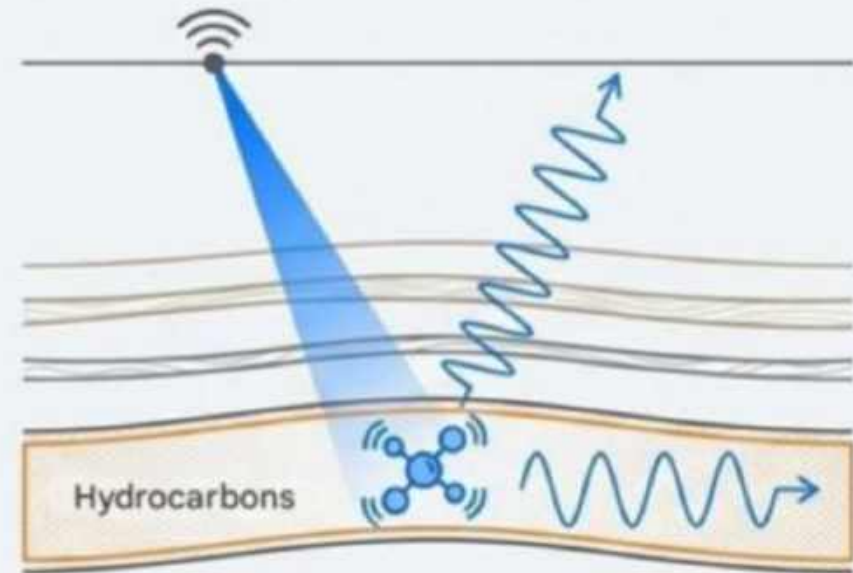


Seismic imaging interprets the reflection of a wave. It identifies structural anomalies that may correspond to a deposit.

Efficiency: ~30-35%.

Vulnerable to magnetic interference.

Direct Detection



RSS-NMR measures the direct resonance of hydrocarbons. It confirms their presence. Insensitive to magnetic anomalies because it does not depend on the Earth's magnetic field.

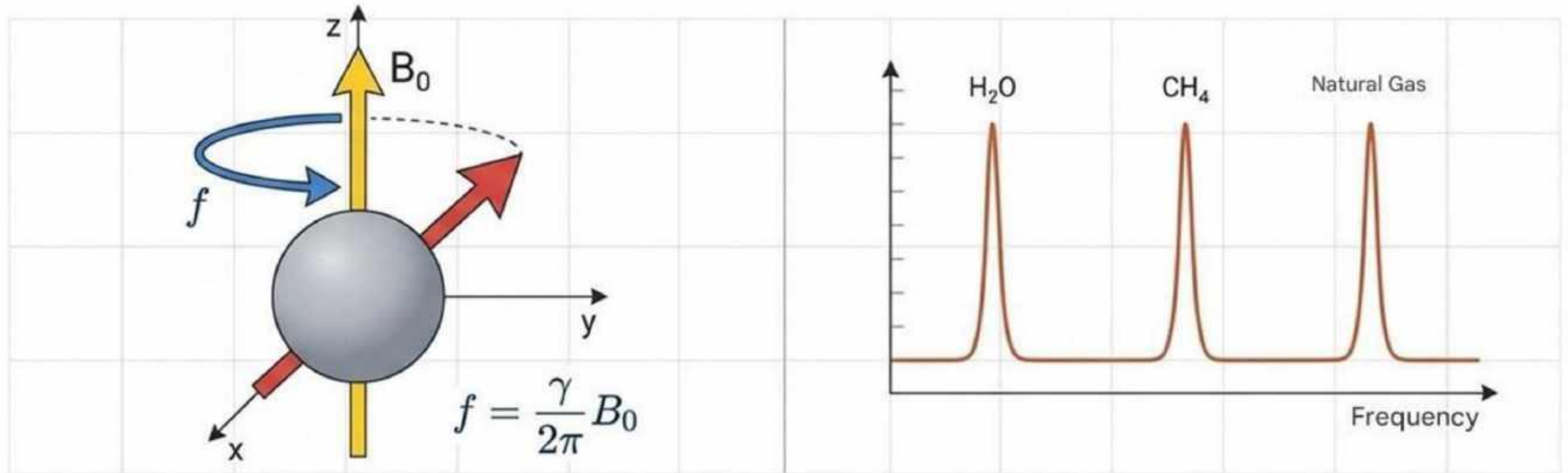


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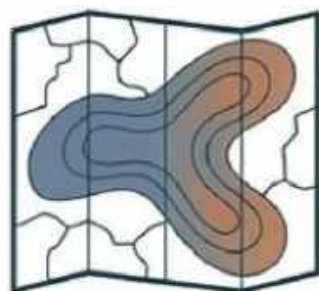
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Each substance has a spectral "fingerprint" that we can read remotely.



The technology is based on the effect of Nuclear Magnetic Resonance (NMR). By exciting atomic nuclei, we measure their resonance frequency. This "chemical shift" is unique to each molecule (water  $H_2O$ , methane  $CH_4$ , etc.), allowing for unambiguous identification of the substance being sought, separating its signal from background noise.

# TWO-STAGE EXPLORATION METHODOLOGY



## STAGE 1: REMOTE GEOCHEMISTRY

**Duration:** 0–2 Months

- **Objective:** Identify dispersion halos over large territories.
- **Deliverable:** Conclusive report on presence/absence of anomalies.

## STAGE 2: PRECISION DELINEATION

**Duration:** 2–3 Months

- **Objective:** Refine anomaly boundaries via satellite imagery.
- **Deliverable:** Exact drill point identification, tectonic fault mapping, depth analysis, and industrial concentration estimates.



# STRATEGIC BUSINESS IMPACT

## RISK MITIGATION



Significantly reduces financial risks associated with "blind" exploration methods.

## PRE-DRILLING INTELLIGENCE



Identification of tectonic faults and exact drilling points before heavy machinery is deployed.

## RESOURCE ESTIMATION



Provides estimated volume of hydrocarbon/ore resources during the remote phase.



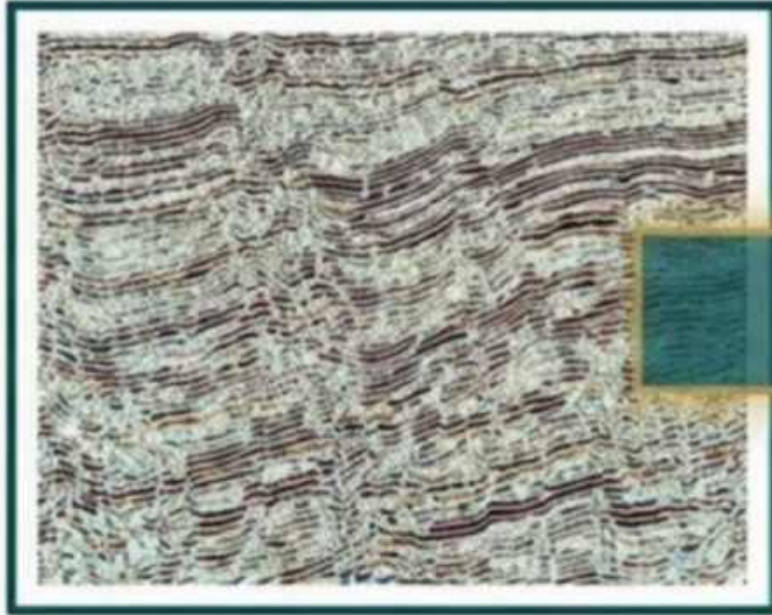
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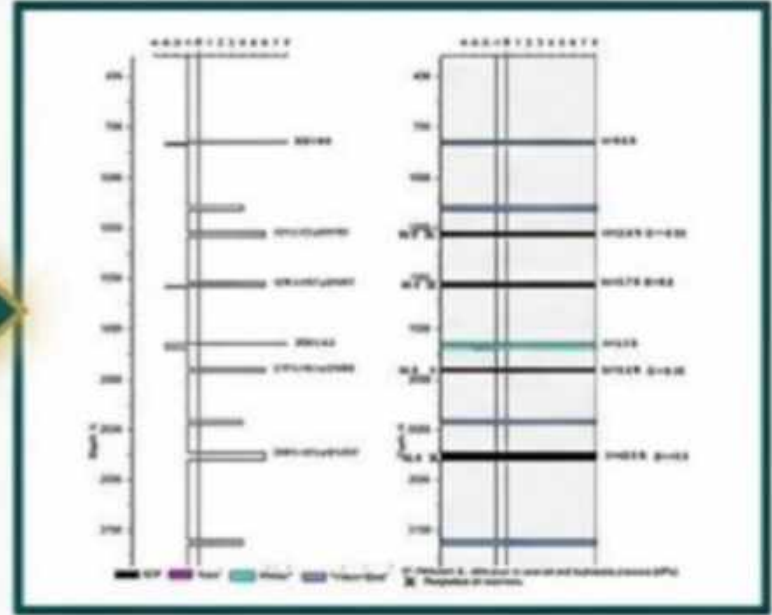
# From Complex Interpretation to Direct Vision

3D Seismic



Interpretation is necessary

RSS-NMR



Direct reading of results

RSS-NMR transforms a geological probability into quantifiable data before drilling.



# The RSS-NMR Advantage: From Technical Edge to Financial Outcome



## Dramatically Increase Success Rate

Move beyond the 30-35% industry average by drilling only where hydrocarbons are confirmed to be present.



## Substantially Reduce Exploration Costs

Minimize or eliminate the need for broad, speculative seismic campaigns. Focus expensive seismic surveys only on confirmed areas of interest.



## Mitigate Risk & Uncertainty

Make go/no-go decisions on acreage with direct evidence, not just geological inference.



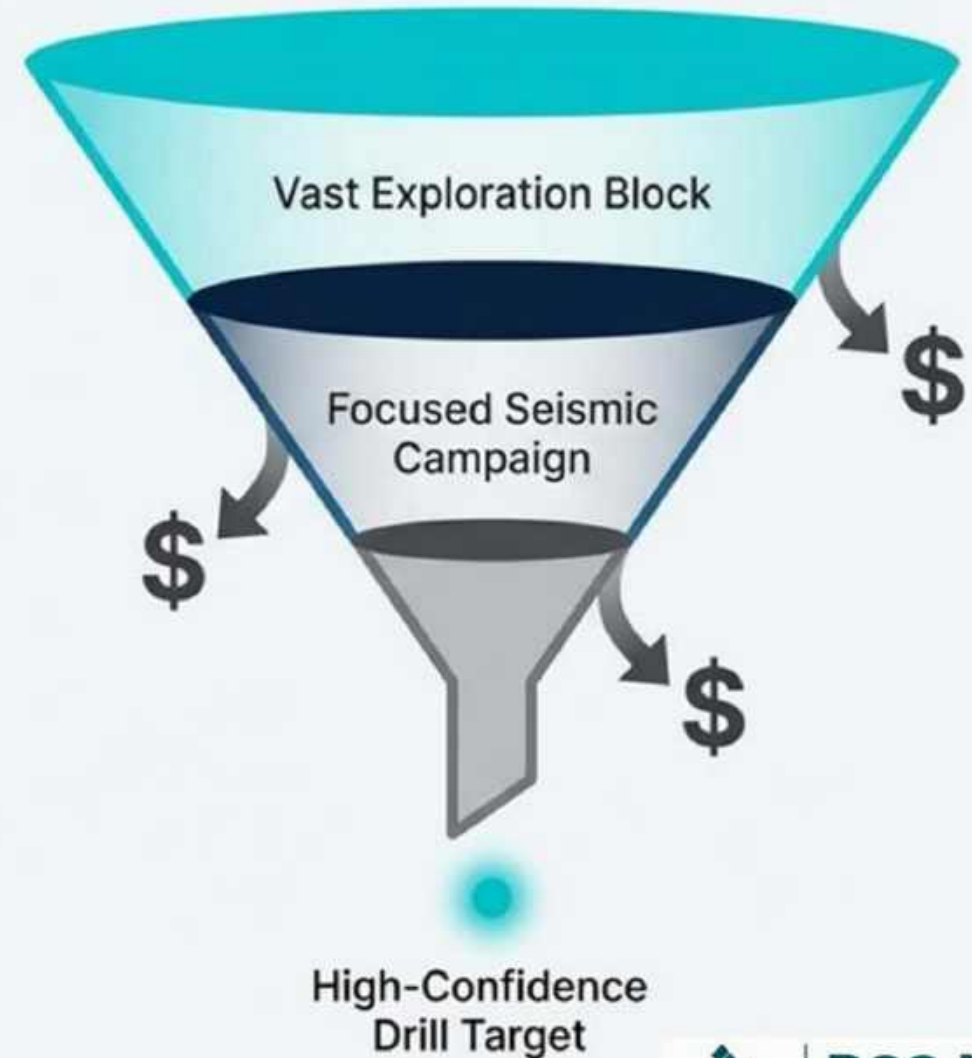
## Accelerate Prospect Prioritization

Rapidly screen vast areas to identify and rank the most promising prospects based on direct data.



## Gain a Competitive Edge

Leverage a disruptive toolset to succeed in challenging regions where competitors using conventional methods fail.



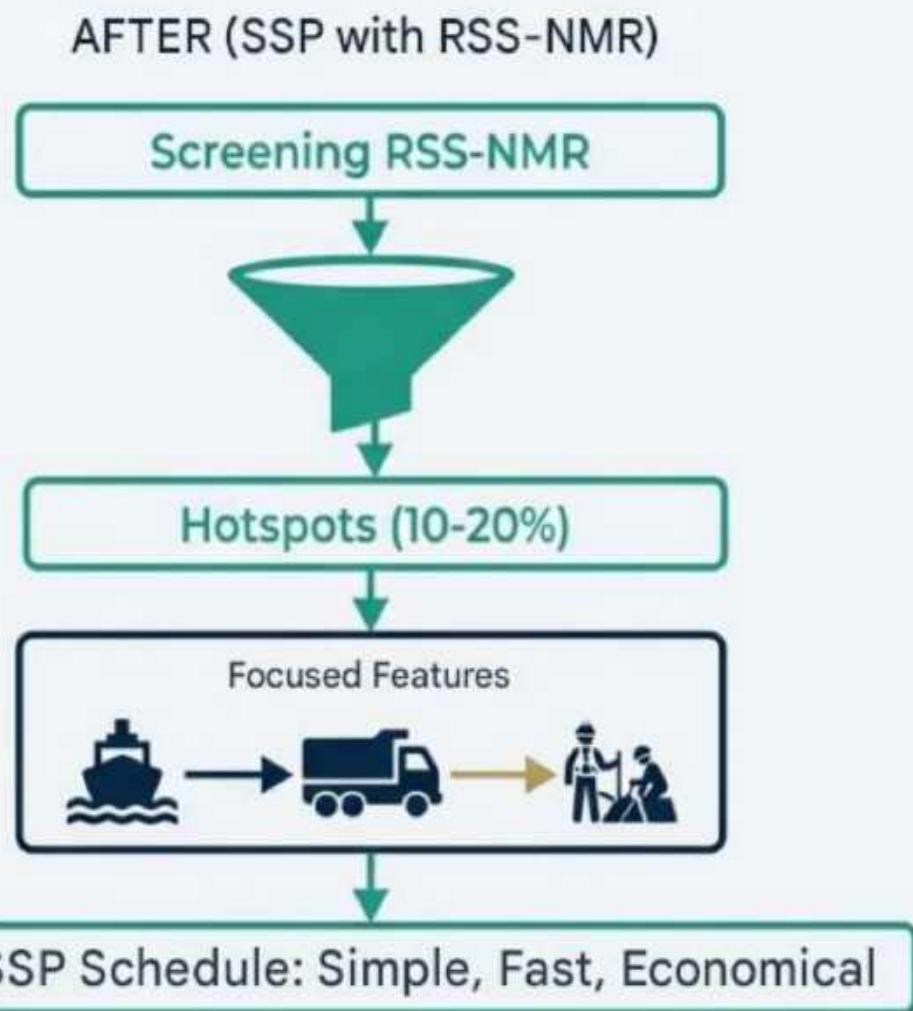
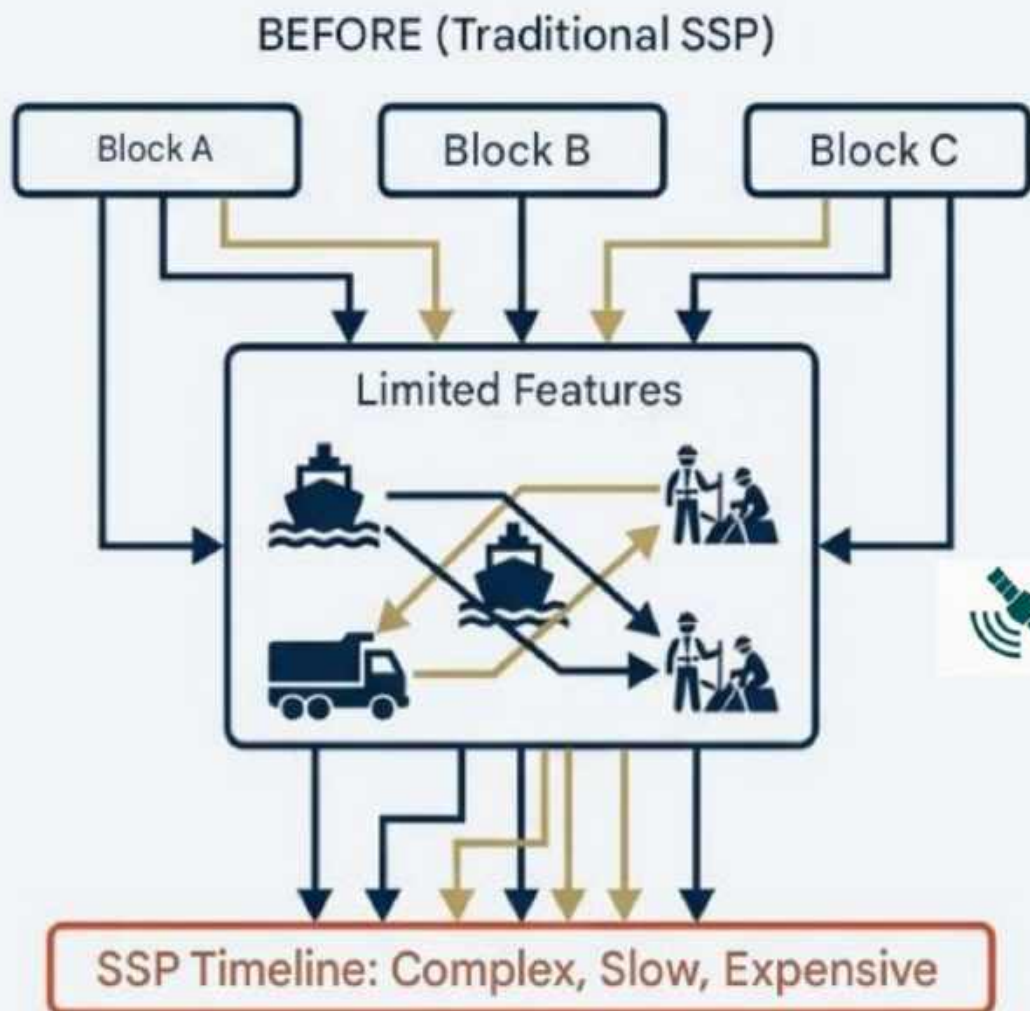
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# Transforming the Seismic Scheduling Program (SSP)

Traditional SSP is a complex problem of optimizing resources, costs, and operational windows. RSS-NMR acts as a strategic filter before SSP, radically simplifying the process.



# Applications Across the E&P Lifecycle

## New Fields & Licensing Rounds (Greenfields)



### Challenge

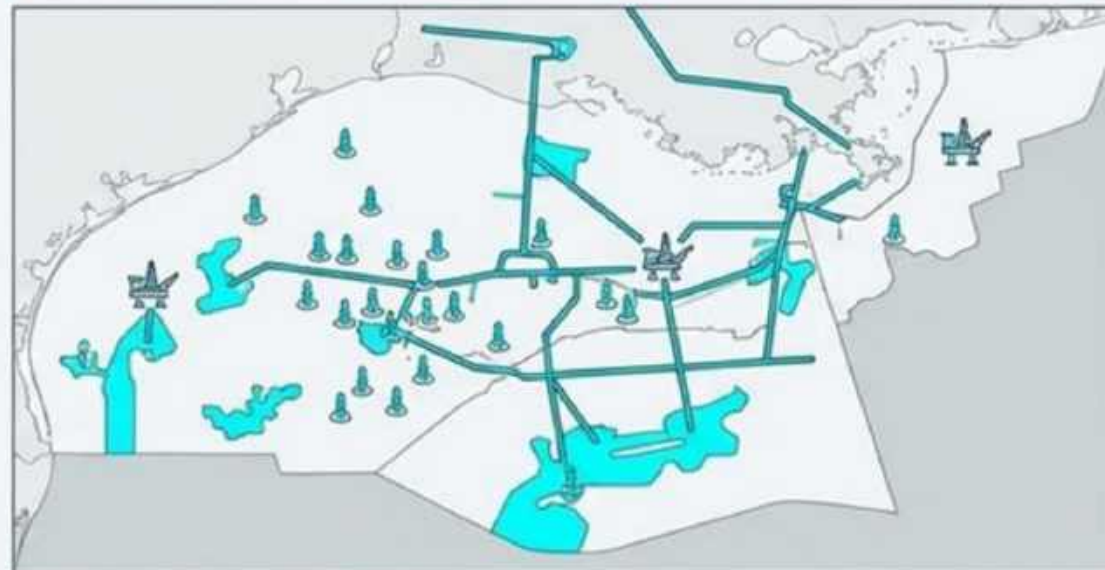
High cost and risk of exploring large, unknown areas.



### RSS-NMR Solution

Rapidly scan entire blocks or auction areas to determine if **any** are of interest **before** committing to costly seismic programs. Reduce a systematic seismic survey on 100% of a new field to a targeted survey on the 15% with real potential.

## Mature Fields & M&A (Brownfields)



### Challenge

Accurately valuing assets and finding new potential in legacy fields.



### RSS-NMR Solution

The only way to quickly and accurately determine the real potential of assets during a merger or acquisition. Re-explore mature fields to identify untapped reservoirs and increase production without the cost and timeline of a new project cycle.



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