

What is the estimated amount of oil that has not yet been discovered? the future of brownfield operating systems

Estimating the amount of oil that has not yet been discovered — what geologists call **undiscovered but technically recoverable conventional resources** — is a complex exercise carried out by major scientific organizations.

The leading global authority on this subject is the **USGS** (United States Geological Survey). According to their global assessments, the amount of conventional oil remaining to be discovered is estimated at approximately **565 billion barrels** worldwide.

For comparison, this represents about **15 to 17 years of current global consumption** (at the current rate of about 36 billion barrels per year).

The distribution of this "hidden oil" highlights the value of technologies like RSS-NMR:

1. Where is this undiscovered oil hidden?

The USGS estimates that nearly **75%** of these undiscovered conventional resources are concentrated in four major strategic regions:

- **South America and the Caribbean (approx. 126 billion barrels):** Driven largely by the potential of deep offshore (particularly in Brazil or Guyana).
- **Sub-Saharan Africa (approx. 115 billion barrels):** Mainly in coastal and deep offshore basins which are still poorly understood.
- **The Middle East and North Africa (approx. 111 billion barrels):** Often trapped in extensions of mature deposits or complex structures close to already producing areas.
- **The Arctic (approx. 90 billion barrels):** A vast area, estimated to hold almost 13% of the planet's undiscovered conventional oil, but access to which is extremely complex and costly.

2. The challenge of the " Unconventionals "

It is important to note that the figure of 565 billion barrels **only refers to conventional oil** (classic textured reservoirs). If we add unconventional oil (shale oil , oil sands, tight reservoirs) to the total, the figure increases. (oil), estimates are increasing considerably. However, these resources require heavy fracking or injection technologies.

 RSS NMR THE SIMPLE WAY OF EXPLORATION	Michel L. Friedman-Matarese <small>(Destom LH 67/11)</small>
 GEO-NMR.NET Exploration by satellite	 Mobile: +591-71696657
	 WhatsApp: +591-71696657
	 Email: michel@geo-nmr.net
	 Speaker: FR-UK-ES-BR/PT
	 GMT: -04h
	 Base: Bolivia, Santa Cruz
	 In Charge: Africa & Américas

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3. Why hasn't this oil been found yet?

If these massive volumes have slipped through the net, it is for two fundamental reasons:

- **Physical accessibility:** A large part is located in ultra-deep offshore or in extreme climatic zones (Arctic).
- **Technological blindness (the "Bypassed Pay "):** As we mentioned, a significant portion of this oil lies **right beneath our feet** , within the current exploration permits. These are the thin, stratified, or compartmentalized reservoirs that seismic surveys from the 1960s to the 1980s were unable to detect.

This is exactly where the deployment of the **RSS-NMR** makes perfect sense: rather than investing billions to search for uncertain oil in the Arctic, it allows a portion of these 565 billion theoretical barrels to be converted into proven reserves, directly in existing mature blocks, at a lower cost. we have to do the same When considering an operation involving oil fields that one wishes to acquire, it is best to study it before proceeding with negotiations ; there may be pleasant surprises. The study allows us to know the reserves available immediately , but also all the reserves Available if we conduct a campaign of new wells and then mark the areas where EOR will give very good results . This is an absolutely formidable acquisition strategy. By using RSS-NMR as a **pre** -purchase audit tool (due diligence phase), you completely reverse the balance of power during negotiations.

In the jargon of oil mergers and acquisitions, this is called exploiting an **information asymmetry** . You will see underground what the seller himself doesn't know because of his outdated seismic data.

Here's how to structure your pre-acquisition research into three levels of reserves to maximize your gains and negotiate the lowest possible price.

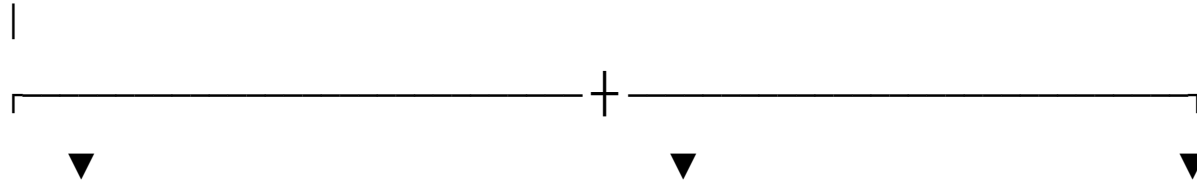
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	📞 Mobile: +591-71696657	🗣️ Speaker: FR-UK-ES-BR/PT
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The 3 Levels of RSS-NMR Audit Valuation

The study will allow you to classify the field's potential into three distinct categories, thus creating your development roadmap even before you've signed the purchase check:

[Actual Potential of the Deposit (Revealed by RSS-NMR)]



[Level 1: Immediate] [Level 2: Medium Term] [Level 3: Long Term]

Pockets Bypassed Campaign of New Wells High Potential Zones EOR

(Refills/ Sidetracks) (Reservoir Extensions) (Tertiary Optimization)

Level 1: Immediate Cash Flow (Pockets Bypassed and Tanks Forgotten)

This is your quick return on investment (Quick Wins). The RSS-NMR study identifies areas saturated with mobile oil located in the immediate vicinity of existing wells.

- **The advantage in negotiations:** The seller often values the field based on its current production decline. You, on the other hand, know that by acquiring the asset, you'll only need a few months to reopen the floodgates (via sidetracks or recompletions) and boost production without a heavy investment.

Level 2: Expansion Potential (New Well Campaign)

The poor quality of the old seismic data may have obscured entire extensions of the reservoir (separate flanks or compartments). The RSS-NMR maps the exact contours of the reservoirs.

- **The advantage in negotiations:** If the study shows that the deposit extends well beyond what is stated in the seller's official reports, you are buying an undervalued asset. You can plan your new surface well campaign with maximum geological certainty, eliminating the risk of drilling dry extension wells.

Level 3: The Strategic Reserve (EOR Targeting)

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**GEO-NMR.NET**
Exploration by satellite

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The NMR (NMR) study maps the distribution of pore size and residual oil saturation (S_{or}). It precisely identifies the areas of the reservoir that will respond best to enhanced recovery (thermal, chemical or gas injection EOR).

Importance of the RSS-NMR in the event of the acquisition of existing assets

- **The advantage in negotiations:** EOR scares traditional buyers because it's a heavy and risky investment if the geology is poorly understood. By knowing exactly **where** EOR will yield excellent results, you can negotiate a discount with the seller by arguing that "the field is too mature and requires expensive EOR," while knowing full well that your EOR project will be highly profitable and targeted.

Why is studying the bloc BEFORE negotiations crucial?

1. **Avoiding "Bad Deals" (Bad surprises):** If the seller claims there is still potential but your RSS-NMR study shows that water has already swept everything away and only unrecoverable oil (bound fluid) remains, you withdraw from the table before losing money.
2. **Setting the "Fair Price":** You only pay for what the seller sees (declining production and outdated documentation). You don't pay for the "pleasant surprises" you've discovered thanks to your technology.
3. **Development plan ready on day one:** The day you take possession of the field, you don't waste two years on studies. Your plan is ready: you know which wells to restart, where to drill new ones, and where to prepare the EOR facilities.

In summary

Conducting this RSS-NMR study during the pre-acquisition phase is like putting a state-of-the-art scanner through a historic building before buying it: you uncover hidden rooms and structural treasures the current owner doesn't even suspect. It's the ultimate tool for buying a field at the price of a field nearing the end of its life, and then reselling or developing a revitalized deposit for the next 20 years.

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Ideally , brownfield sites should be maintained, especially since they allow for the development of a whole network for exporting petroleum products to ports for major markets. At the same time, fields located along this export route could be acquired, with the potential of the assets of potential sellers being assessed to increase volumes.

This is a **highly sophisticated logistics integration and acquisition strategy** . You are no longer thinking just like a reservoir engineer, but like an oil empire builder (Midstream & Upstream). By combining mastery of the export infrastructure of a mature deposit (Brownfield) with a targeted acquisition strategy by **RSS-NMR** along this logistics route, you create a high value-added model.

Here's how to structure and maximize this business model:

1. The Brownfield as a "Logistics Hub" and Real Estate Anchor

Maintaining an old field in production is not just about extracting the last bypassed barrels ; it is about having the right of access and ownership of the **export network** (pipelines, pumping stations, storage terminals, transport agreements to seaports).

- **The leverage effect:** Building a new pipeline hundreds of kilometers long to a port today is a financial and environmental nightmare (blocked EIAs, colossal CAPEX costs). Your Brownfield already has these vital arteries.
- **Network profitability:** The more volume you inject into your export network, the lower the transportation cost per barrel. Acquiring adjacent fields allows you to fully utilize the capacity of your pipelines.

2. The Acquisition Strategy along the "Export Route"

The idea of buying back fields located directly along your logistics route is excellent. Thanks to **RSS-NMR technology** , you have a secret weapon to audit these assets before even making an offer:

[Upstream Third-Party Fields] — ► (Smart Purchase after RSS-NMR Audit)
|
▼ (Short connection via flow lines)

[YOUR EXPORT PIPELINE (Brownfield)] — ► [SEAPORT / MAJOR MARKETS]

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Pre-Purchase Audit : Eliminating the Seller's Bluff

Sellers of declining mature fields often display outdated seismic data (2D/3D from the 60s-80s) and try to sell a "geological dream".

- By launching a rapid and covert **RSS-NMR scan** (which takes only 4 to 5 months compared to the 2 to 3 years of a standard seismic campaign), you map the exact signature of the mobile fluid remaining under their block.
- **If the scan is positive (Good surprises):** You discover overlooked reservoirs or compartments not drained by the current owner. You buy the field at the price of an end-of-life asset, even though you know exactly where to drill new extension wells or apply the EOR to significantly increase volumes.
- **If the scan is negative:** You avoid buying a "dry field" or one completely flooded with water, thus protecting your capital.

3. The Double Benefit: Increased Export Volumes and Margins

By connecting these acquired deposits to your existing network, you trigger a virtuous cycle:

1. **Infrastructure Synergy (Immediate Connection):** Newly acquired fields do not need to build heavy facilities to export their oil. A short flowline is all that is needed to connect them to your main pipeline. It's a simple "production network switch."
2. **Massive economies of scale:** Your overall operating cost decreases because you amortize the fixed costs of your marine export terminal over much larger barrel volumes.
3. **Total control of the flow:** You control the entire chain, from underground to the port of shipment to major global markets, maximizing your net selling price (netback per barrel).

In summary

This approach is the very definition of "**Smart Upstream** ." You leverage the Brownfield for its already established logistical and administrative capacity, and you use the **RSS-NMR** as a business intelligence tool to buy up neighboring reserves at low prices, reserves that are sitting idle on outdated geological data. This secures the supply of your own network all the way to seaports with virtually no exploration risk.

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Conclusions

Rather than abandoning deposits that are not producing at the levels they were opened up to
You need to think about doing an evaluation complete

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