# Mongolia



PETEX 2016 CONFERENCE, LONDON

**Onshore Frontier Exploration** 

#### **Important Notice and Disclaimer**



This presentation has been prepared by Petro Matad Limited (the Company) and is for information purposes only.

Some statements contained in this presentation or in documents referred to in it are or may be forward-looking statements. Such statements reflect the Company's current views with respect to future events and are subject to risks, assumptions, uncertainties and other factors beyond the Company's control that could cause actual results to differ from those expressed in such statements. Although the Company believes that such forward-looking statements, which speak only as of the date of this presentation, are reasonable, no assurance can be given that they will prove to be correct. Actual results may differ from those expressed in such statements, depending on a variety of reasons. Therefore, you should not place undue reliance on these statements.

There can be no assurance that the results and events contemplated by the forward-looking statements contained in this presentation will, in fact, occur. The Company will not undertake any obligation to release publicly any revisions to these forward-looking statements to reflect events, circumstances or unanticipated events occurring after the date of this presentation, except as required by law or by any appropriate regulatory authority. Nothing in this presentation should be considered as a profit forecast.

Past performance of the Company or its shares cannot be relied on as a guide to future performance.

This presentation does not constitute, or form part of or contain any invitation or offer to any person to underwrite, subscribe for, otherwise acquire, or dispose of any securities in the Company or advise persons to do so in any jurisdiction, nor shall it, or any part of it, form the basis of or be relied on in connection with or act as an inducement to enter into any contract or commitment therefore. This presentation does not constitute a recommendation regarding the securities of the Company. No reliance may be placed for any purpose whatsoever on the information or opinions contained in this presentation or on its completeness and no liability whatsoever is accepted for any loss howsoever arising from any use of this presentation or its contents or otherwise in connection therewith.

In particular, this presentation and the information contained herein do not constitute an offer of securities for sale in the United States. The Company's securities have not been, nor will they be, registered under the US Securities Act of 1933, as amended (the Securities Act) and may not be offered or sold in the United States other than pursuant to an exemption from, or in a transaction not subject to, the registration requirements of the Securities Act.

This presentation has been prepared in compliance with English law and English courts will have exclusive jurisdiction over any disputes arising from or connected with this presentation.

Photo: Mongolian Parliament Building Ulaanbaatar, Mongolia

#### **Contents:**

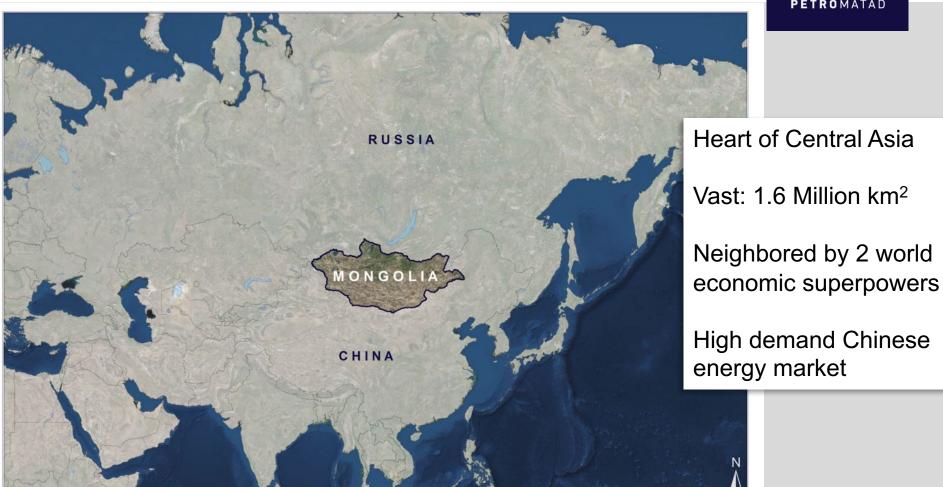
- Introduction to Mongolia
- Regional Setting and Proven Oil Province
- **Exploration Database and Petroleum Geology**
- Play Models and Subsurface Examples
- **Company History and Timeline**
- Opportunity Highlights and Conclusion

# **Country Introduction:**

- Mongolia became a democracy in 1990 following 70 years as a Soviet satellite
- Mongolia is a rich natural resource province, mineral industry driven economy.
- Mongolia currently imports 100% of it's refined petroleum from Russia.
- And exports 100% of it's produced crude to China.
  - This unsustainable system has instigated plans for a domestic refining sector.
- Investment climate is stable and favorable due to new investment and petroleum laws

## Mongolia





## Petro Matad Acreage



3 PSC Blocks

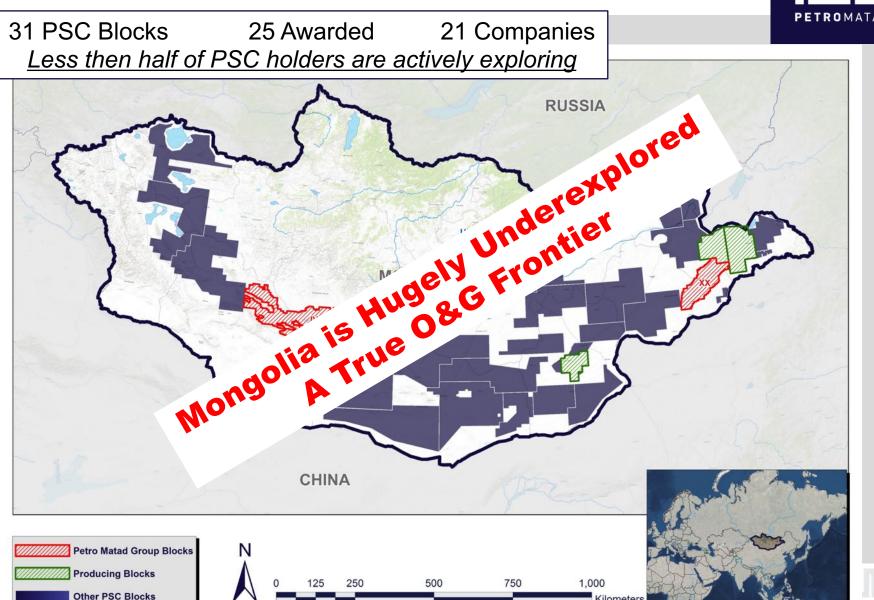
Held 100%

>60,000km<sup>2</sup>



## **Petroleum PSC Blocks**





## **Analogues in Abundance**



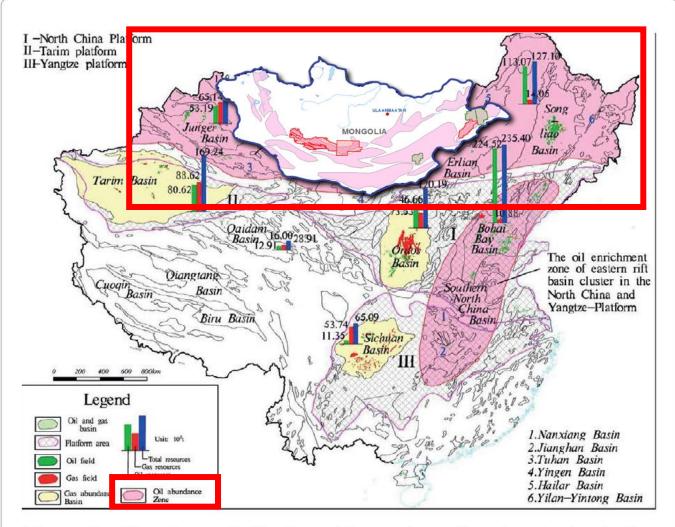
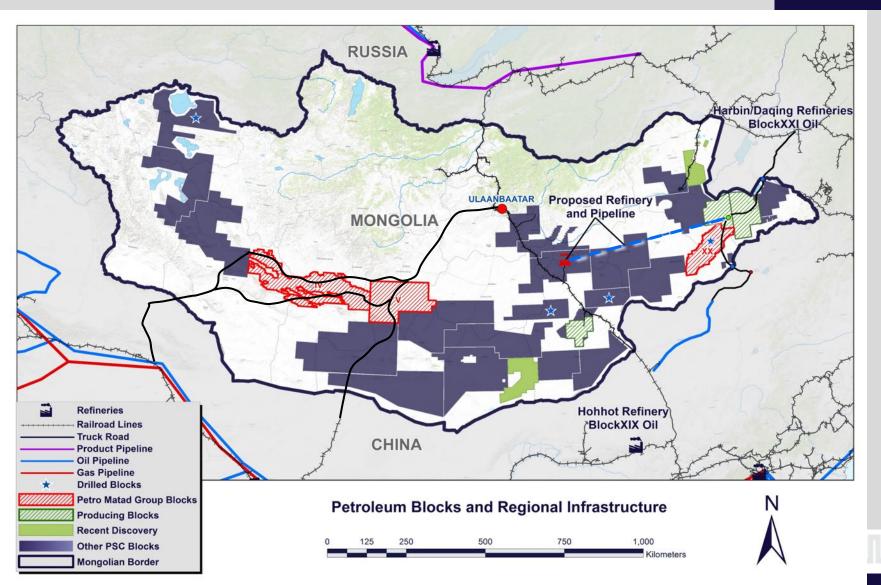


Figure 2: Oil and gas distribution of the main sedimentary basins in the onshore region of China.

- 67% of the China's total Onshore Oil Reserves (~330 BBbbls)
- China's medium –
  large oil fields are
  dominantly found in
  Rift Basins
- Prolific Chinese Rift
   Basins are directly
   analogous in
   Time, Basin Fill and
   Geometry

## **Petroleum Infrastructure**





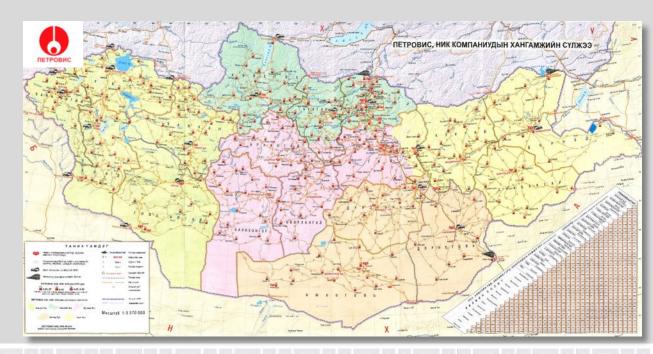
# Mongolian Mid & Down Stream



Potential Partnership between Petrovis & Petro Matad in mid & downstream sector.

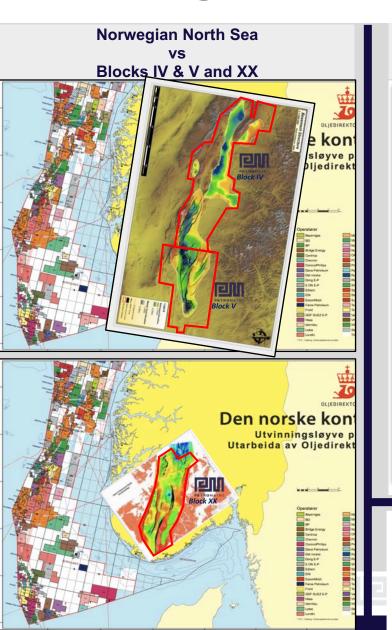
- 1. Domestic production of oil and gas is of strategic importance for Mongolia's energy independence.
- 2. Petrovis is Mongolia's largest downstream fuel supplier and founder and majority shareholder of Petro Matad.
- 3. Petrovis has the widest coverage of petrol stations nation wide, storage facilities and logistics infrastructure.
- 4. Petrovis is the potential off taker of Petro Matad's production and investor in construction of oil refinery in Mongolia.

Having Petrovis as a major shareholder provides Petro Matad a unique a strong position for for future mid- and down stream developments in Mongolia.

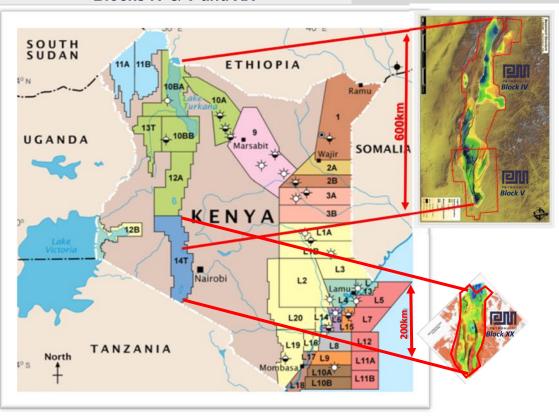


## **Acreage Comparison**





Kenyan EAR Blocks vs Blocks IV & V and XX



Areal Comparison of Petro Matad Acreage to Norwegian North Sea & East African Rift Oil Province

Block Outlines to Scale

## **Modern Rift Basin Analog**

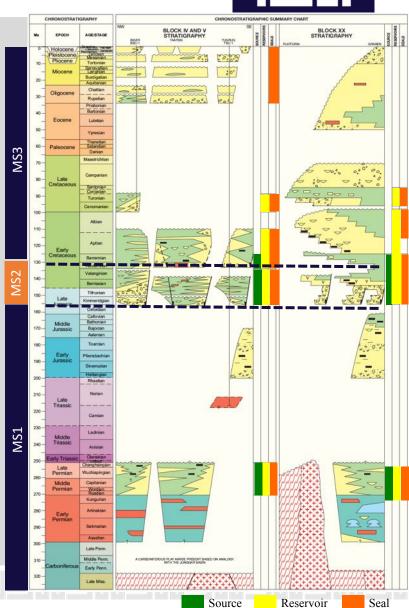




## **Petroleum Geology**

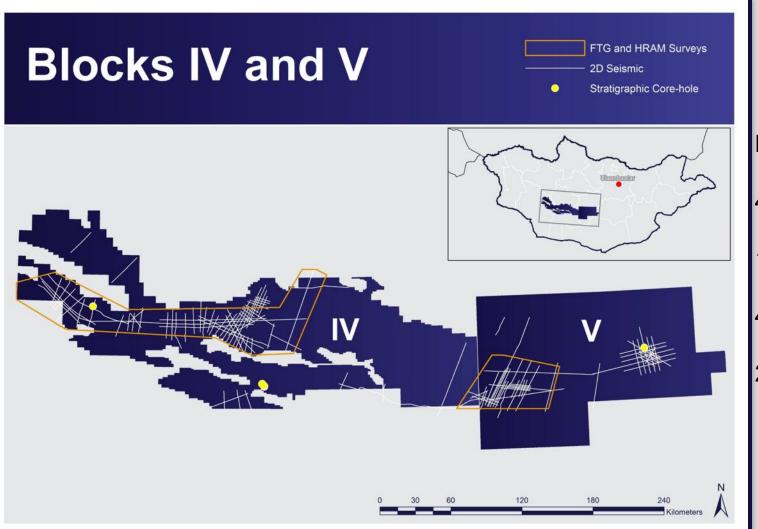
- ✓ Three stratigraphic Megasequences (MS) are recognized throughout Mongolia.
  - ✓ MS-3: upper Cretaceous to recent (fluvial-alluvial)
  - ✓ MS-2: upper Jurassic-mid Cretaceous (fluvial-lacustrine)
  - ✓ MS-1: upper Carboniferous-Jurassic (fluvial-alluvial-lacustrine)
- ✓ All production to date comes from MS-2
  - ✓ World Class Lacustrine Source Rocks Confirmed
  - High Porosity Reservoir Rocks Confrimed
    - ✓ Oil Stain and Fluid Inclusions Proven and Typed
  - Seals: lacustrine shale, faults (<u>proven</u>), and unconformities
  - Prolific Analogues: Sanglaio and Erlian Basins of eastern China, Tamtsag/Hilar Basin of NE Mongolia/China, East Gobi Basin Mongolia.
- ✓ MS-1 secondary petroleum system potential
  - ✓ Unproven to date, but long suspected potential in Mongolia
  - Outcrops indicate mature source and effective reservoir potential
  - Significant preservation of this sequence imaged on seismic beneath MS-2 basin areas. Stacked petroleum system potential
  - Prolific Analogues: Western Chinese basins Jungar, Turpan and Santanghu.

## SOURCE, RESERVOIR, TRAP AND SEAL IN PLACE



## **Database**





**Blockwide Gravity** 

4,000km 2D Grid

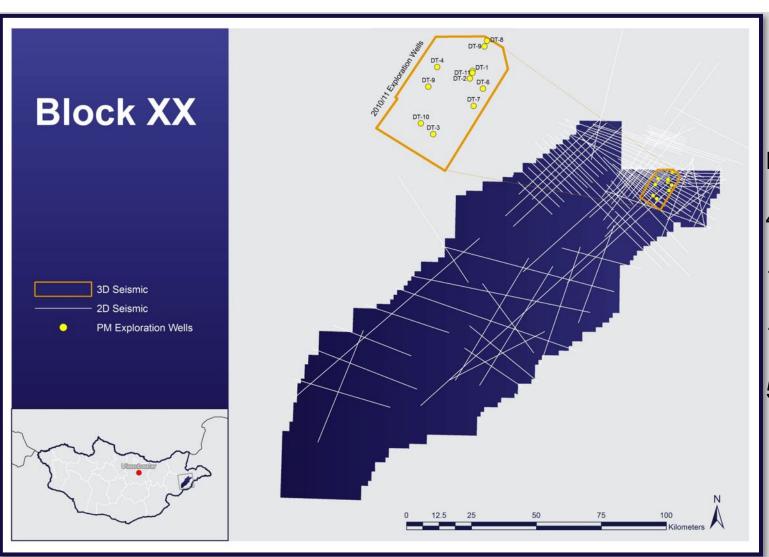
11,000km<sup>2</sup> FTG

4 Strat Cores

2,000+ Samples

## **Database**





Blockwide Gravity

4,000km 2D Grid

130km<sup>2</sup> 3D Cube

12 Expl. Wells

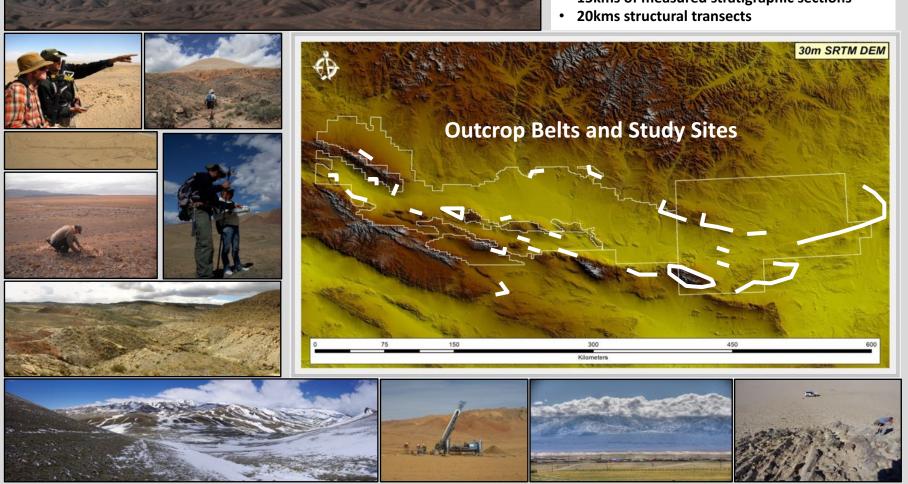
500+ Samples

## Outcrop Geology (2010-2016)





- >2,000 Samples
- 15kms of measured stratigraphic sections



## Source Rock





#### **WORLD CLASS LACUSTRINE OIL SHALE:**



- Up to 900m net shale
- 3-27% TOC, ave 15.1% TOC
- Kerogen Type I & II, max HI = 800-900
- c.0.6 VRo% at outcrop
- Potential for oil shale development

## Reservoir Rock





#### **High porosity fluvial-lacustrine sand systems**

- Extensive in outcrop
- Interbedded with source rocks
- Laterally continuous
- 10-30% porosity
- Clean granitic sediment source, CaCO₃ cement

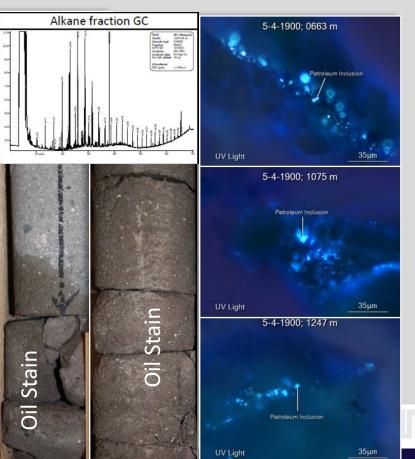


## **Hydrocarbon Indicators**



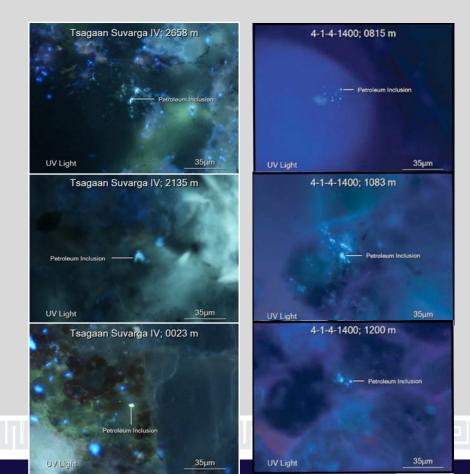
#### **Block V**

- Oil stain in TSC-1 Core hole
- Oily fluid inclusions also identified throughout the core



#### **Block IV**

•Oily fluid Inclusions in BSC-1 Core hole as well as inverted basin outcrop section



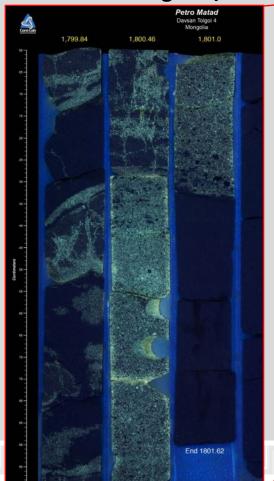
## **Hydrocarbon Indicators**

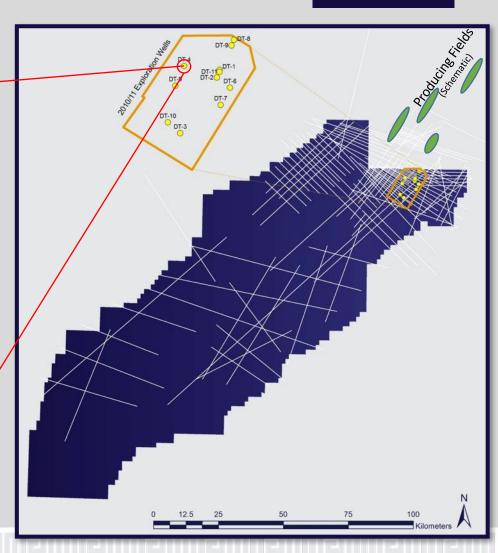


#### **Block XX**

•Live oil from DT-4 well, fluorescing under UV light

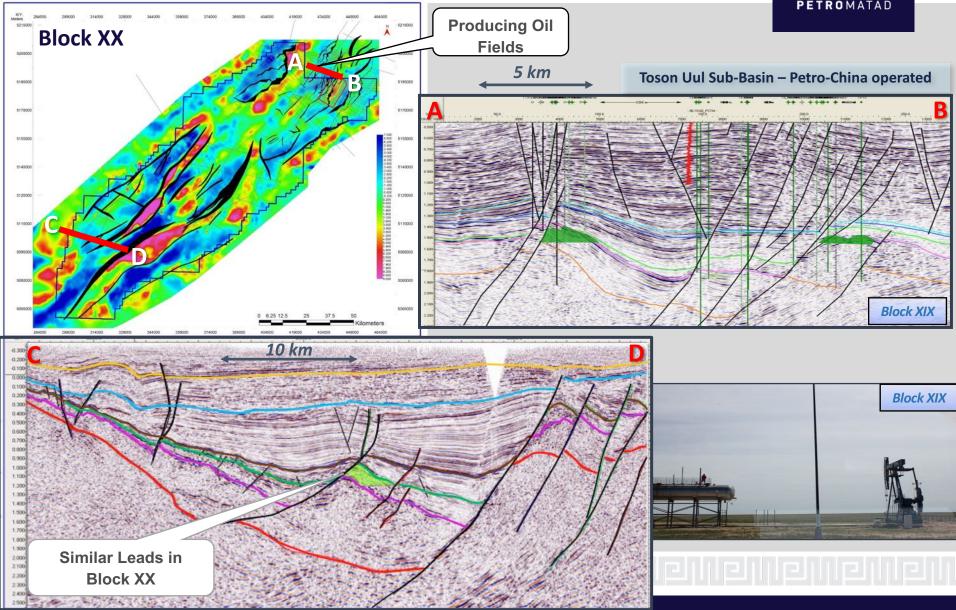
Shows while drilling in 7/11 DT wells





## **Proven Play Analogue**

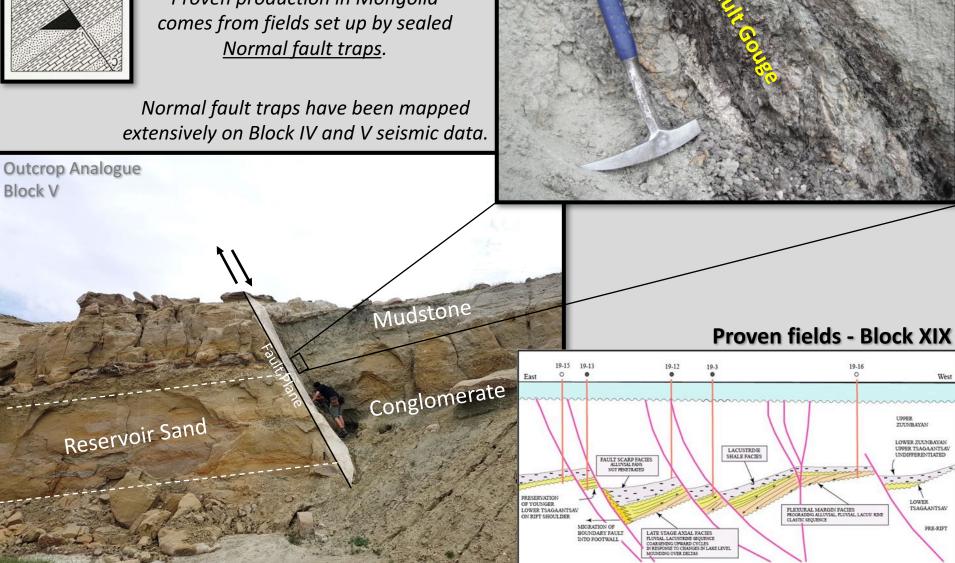




## **Proven Play**

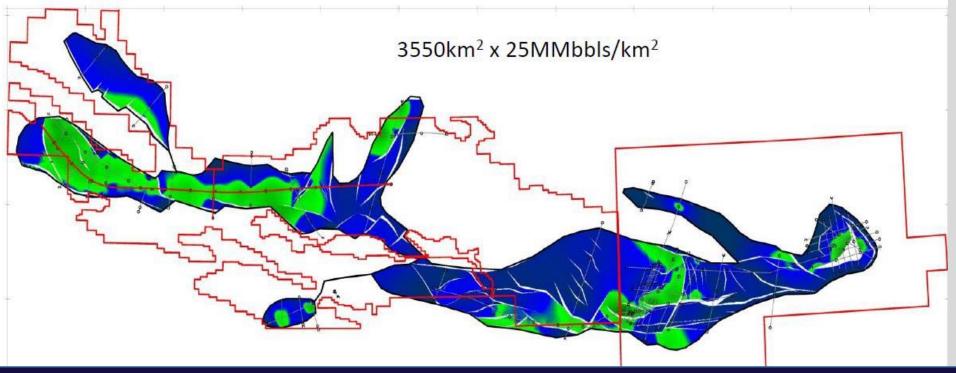


Proven production in Mongolia Normal fault traps.



## **Modelled Mature Kitchens**



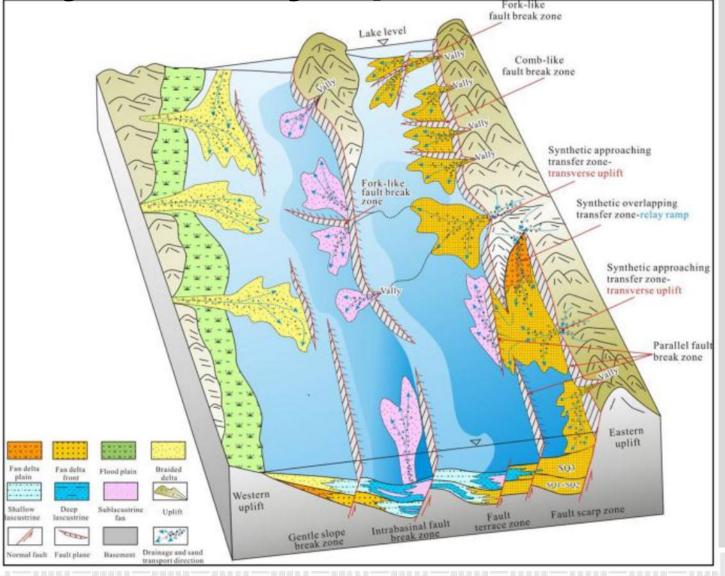


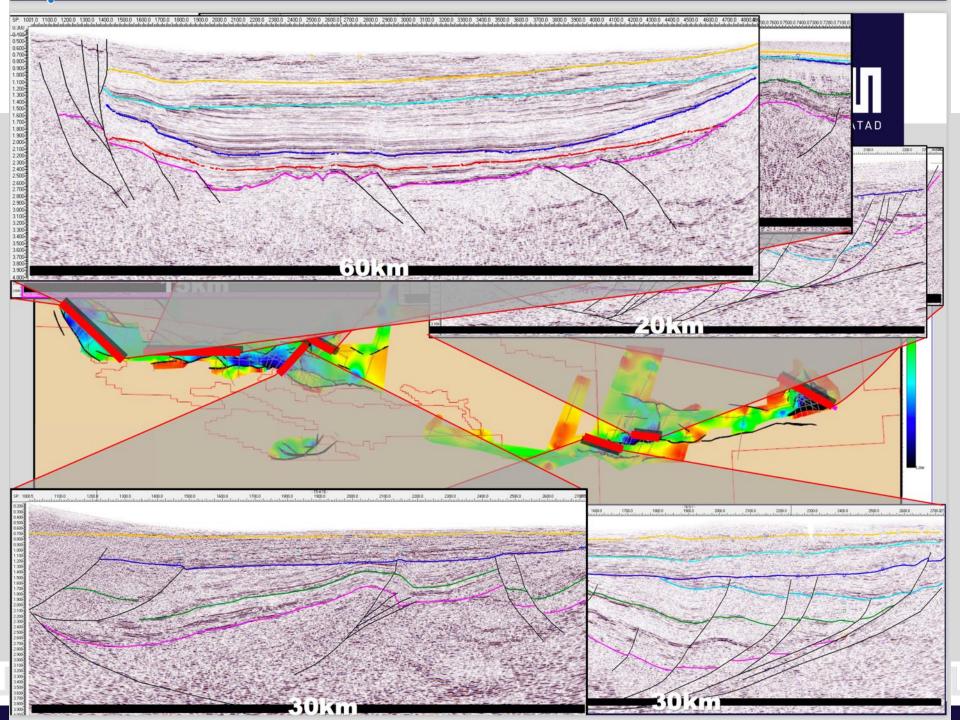
#### Predicting Potential Undiscovered Resources in Syn-Rift Play (Sequence MS2)

- Basin Modelling and Play Analysis work indicates expulsion of ca. 90 Billion Barrels of hydrocarbons in high graded 6 basins (12 basins identified)
- Assuming 10 %-25 % of trapping efficiency yields of prospective resources of 9-23 Billion Barrels STOIIP
- Further upside potential exists in the deeper Permian-Jurassic play (Sequence MS1).
- The remaining six other sub-basins and other areas with limited data coverage will be the focus of future new seismic acquisition to determine their prospectivity potential.

Stratigraphic Traps and Hybrid Play Upside

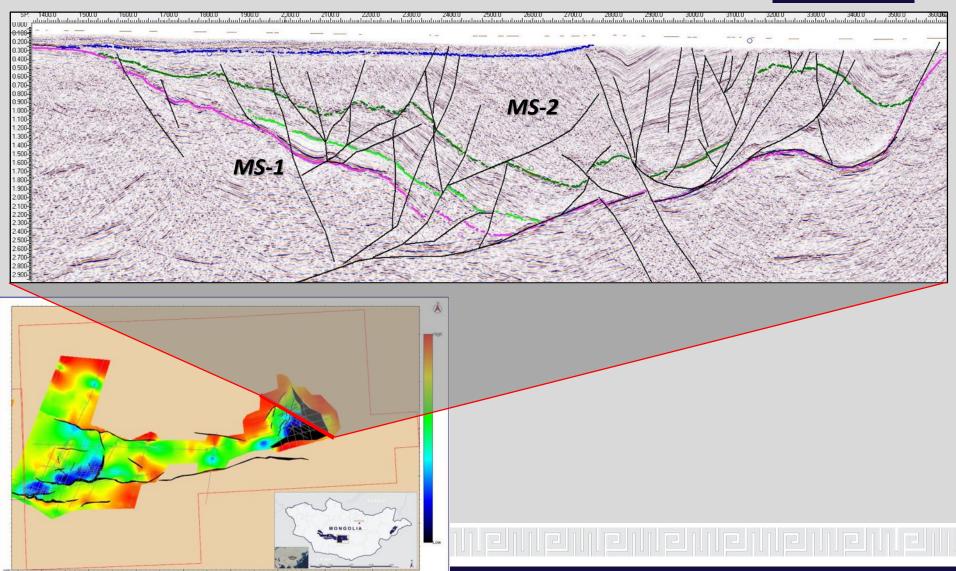






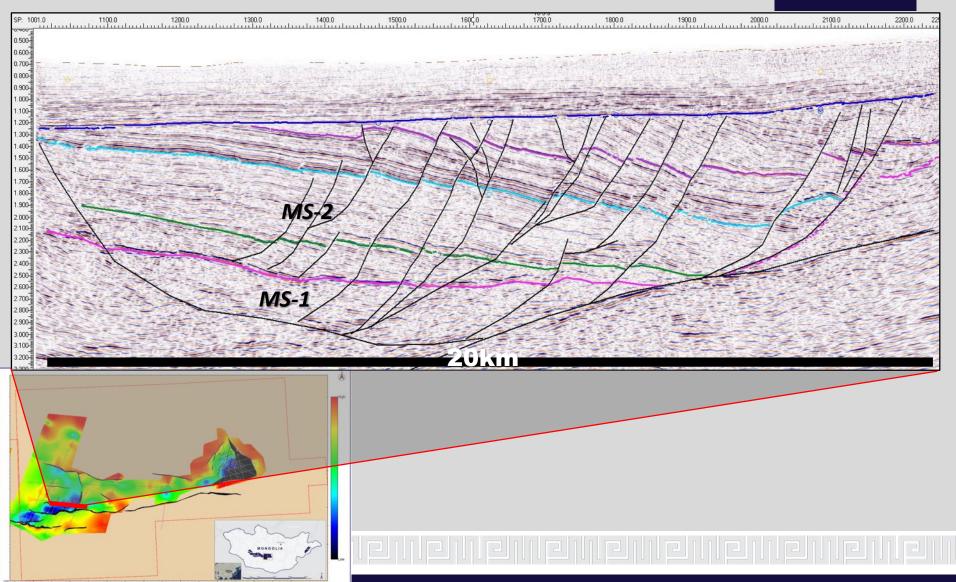
## Tugrug Basin, Block V





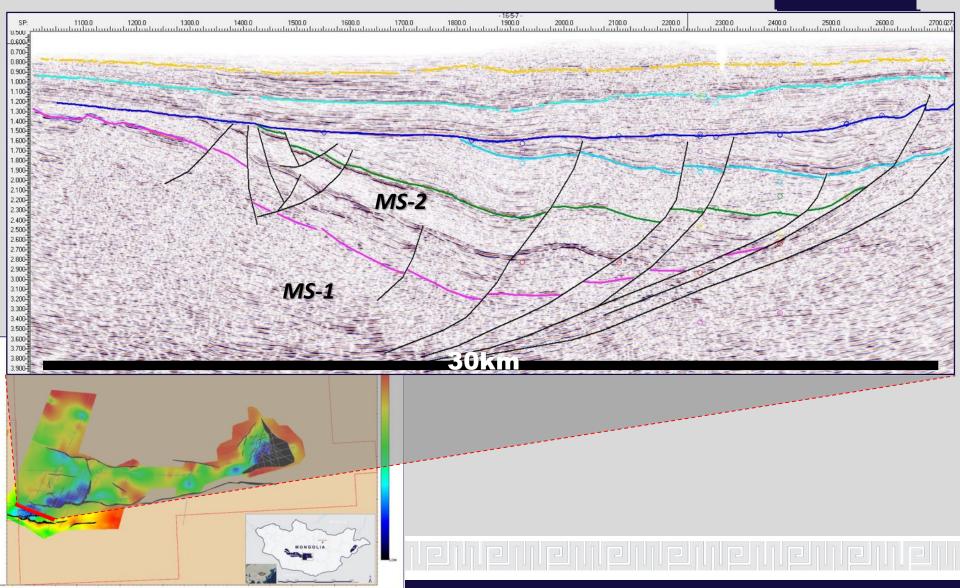
## Central Taats Basin, Block V





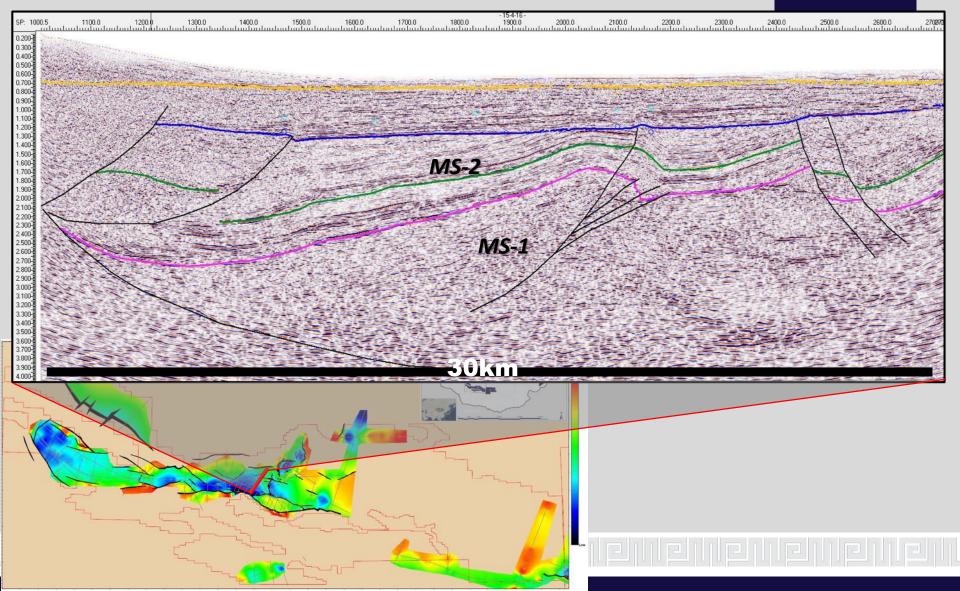
## SW Taats Basin, Block V





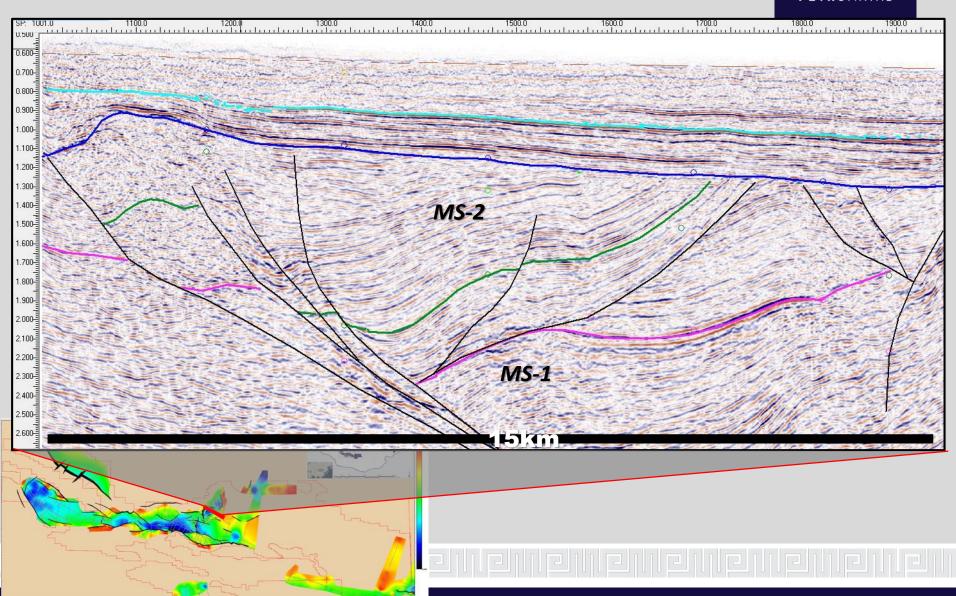
## Baatsagaan Basin, Block IV





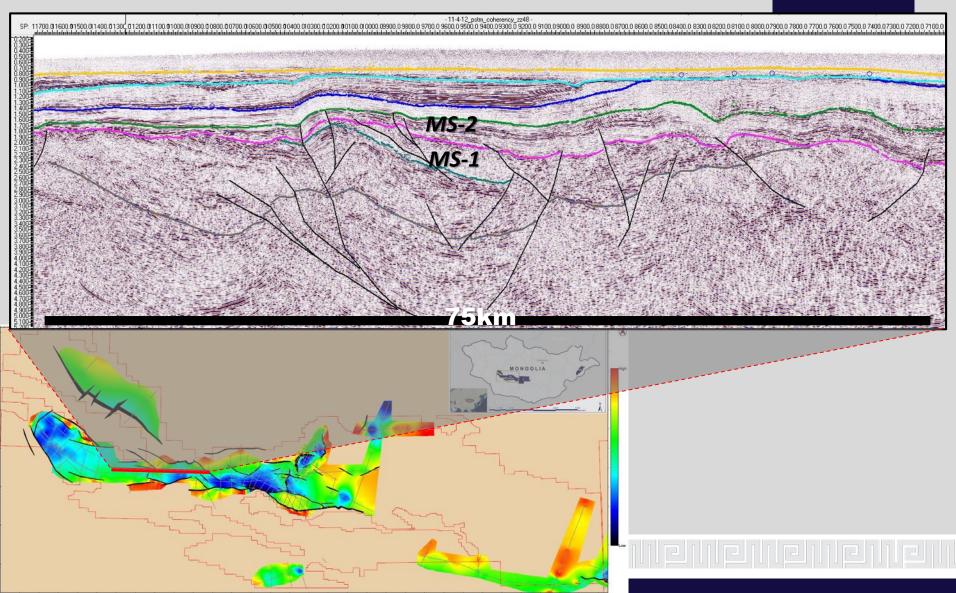
## Baidrag Basin, Block IV





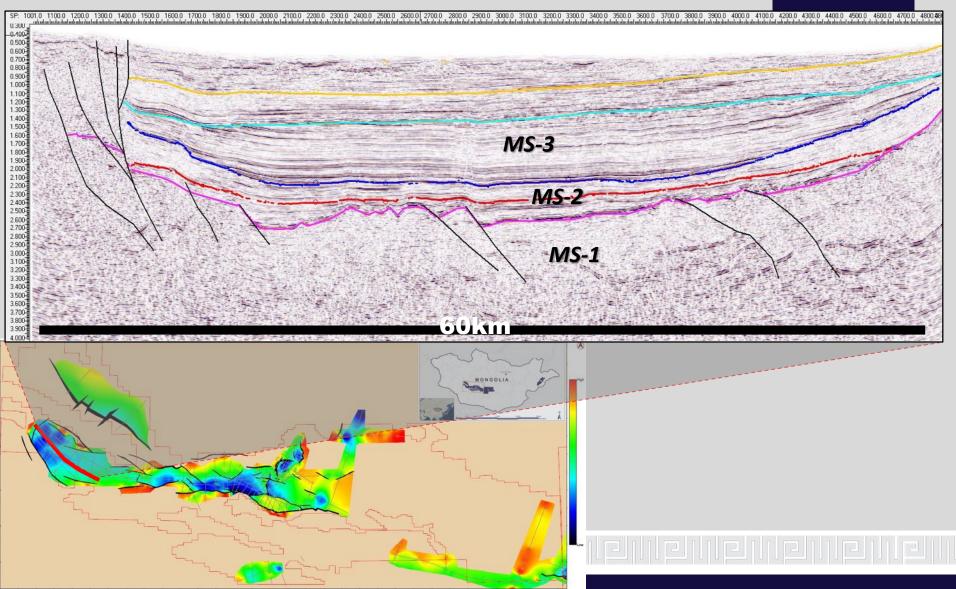
## Shal Basin, Block IV





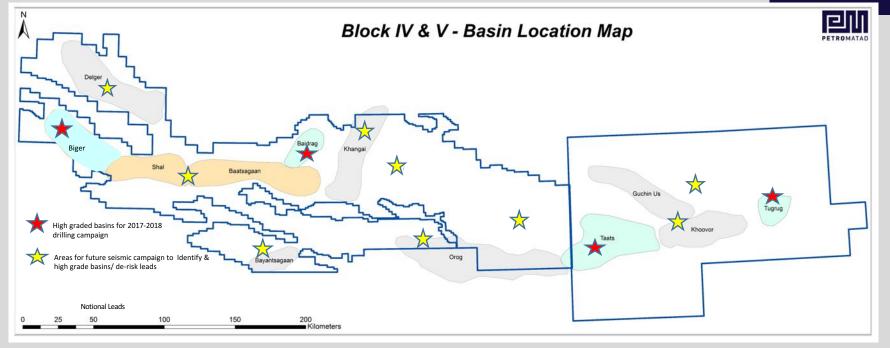
## Biger Basin, Block IV





# Growing Diversified Exploration Portfolio with Drillable Prospects





- 4 basins (with more extensive data coverage) have targets advanced through our prospect development and peer review process and will be tested in 2017 & 2018 exploration drilling campaign.
- First 2 wildcat wells scheduled to be drilled in 2017.
- Prequalification of drilling contractors and rig inspections underway.
- Exploration portfolio with significant number of leads & prospects with room for upside potential.
- Additional seismic will be acquired to identify and high-grade basins with sparse data coverage in remaining part of acreage and de-risk existing leads to drillable prospects..

## **History and Timeline**





Basin and Source/Reservoir

Rock Presence



**Basin Characterization** 



Phase 1 Play Concepts and Regional Mapping



Phase 1 Lead Identification



Asset Synthesis & Basin Prioritization PE



2010

- Regional Gravity
   Basin Recon
- Proof of Sed. Basin Seismic Transects
- Recon/Proof of Concept Outcrop Geology



- Basin Scale Seismic (2,000km)
- Infill Gravity
   Stratigraphic
- Stratigraphic Coring
- Outcrop Geology;
   Extensive Sampling



- Basin
   Characterization
- Seismic Play
   Concept
- interpretations
   Outcrop Geology Continued Research



- Focused Lead/Prospect Definition 2D (Shal & Tugrug basins)
- Database
   Synthesis/Asset
   Definition
- DatabaseFarmout Promotion



- Farmout Process
   Basin Prioritization
- Forward Work
   Program Planning
- Investor Field Trips and Conferences



JV Exploration



Priority Basin
Prospect Definition



PETROMATAD Regional Play Opener
Wildcat Drilling

PM Carries on @ 100% w/ Funding to Continue

Basin Opener Exploration Wells
Stepout Exploration 2D Surveys

Exploration and Appraisal Dailing & 3D

Phase 3 Frontier Data Expansion



 FTG (Taats, Biger, Shal, Baatsagaan basins)

Phase 2 Concepts and Prospect Scale Survey

- Block IV Lead Identification 2D (1,100km)
- Special Focus Outcrop Studies

2016

- Prospect Scale 2D Seismic Baidrag and Taats basins
- Peer Review
- Special Focus
   Outcrop Studies
- 2017

Firm Exploration Drilling Program



- Additional Drillable Prospects and Stepouts to 2017 success
- Expand Prospect
   Scale 2D Over Next
   Priority Basins



- Appraisal Drilling
- Appraisal 3D
   Surveys
- Exploration
- Stepout Wells
- Further Priority Basin 2D Seismic

Seeking a strategic partner to accelerate the exploration work and fully explore Company's vast frontier acreage with low-cost and high impact opportunities.

## **Opportunity Highlights**



- ✓ FRONTIER Exploration, UNDRILLED Basin Opener Upside, VAST acreage position.
- ✓ World Class Source Rocks PROVEN
- ✓ Reservoir and Hydrocarbons PROVEN
- ✓ New Seismic and FTG datasets
- ✓ Drill-ready prospect inventory; two firm wells in 2017
- ✓ More wells and seismic planned for 2018/19
- ✓ Energy Starved Chinese and Domestic Markets
- ✓ PROVEN Operator Looking to FARM DOWN

### **COME SPEAK TO US!**

**INTERNATIONAL PAVILION – BOOTH "N"** 

ONLINE DATAROOM OPEN! <a href="http://www.hydrocarbondeals.com">http://www.hydrocarbondeals.com</a>

## баярлалаа



