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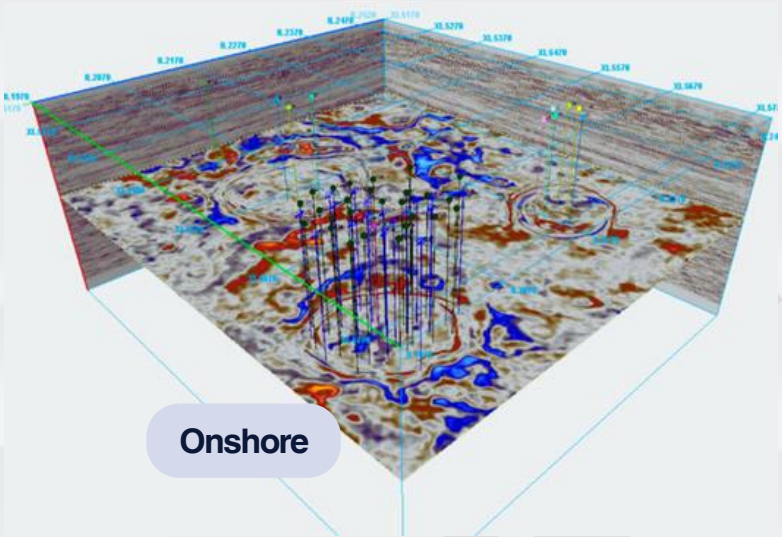
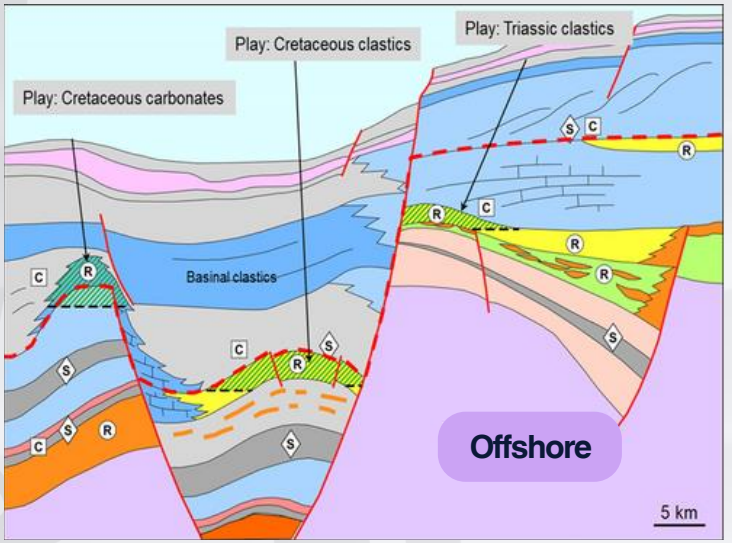
LBR
Where Opportunity Meets Energy

LIBYA BID ROUND

Investment Opportunities Summary Brochure





LIBYA BID ROUND

NOC future strategic goals:

“Expanding Exploration Frontiers, Reserves, Applying Innovative Ideas, Niche Technologies and Securing Future Reserves

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Key Business Drivers for Growth

Strategic Focus Areas

Motivate Exploration:
Medium-High Risk, Deep Offshore, and Frontier Areas.

Development:
Undeveloped discoveries and small/marginal green oil and gas fields.

Rehabilitation:
Implementation of IOR / EOR techniques for mature brown and idle (dormant) oilfields.

Technology Implementation:
Niche-technologies for focused exploration (Deeper and Stratigraphic Traps).

NOC Vision

Vision:
NOC leads the exploration of oil and gas with vast reserves including untapped natural gas. Vision to produce 2-3 MMbbls/d.

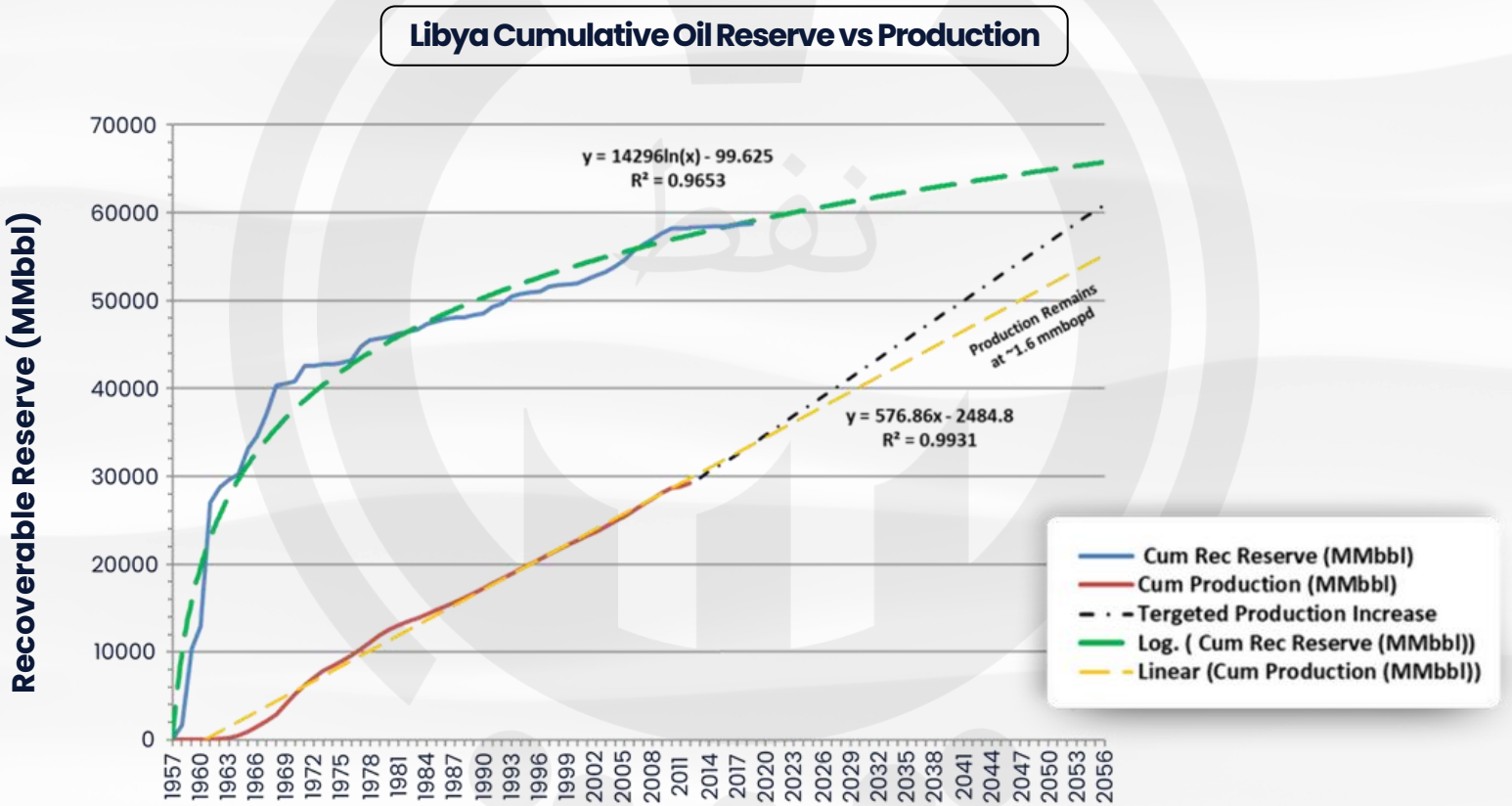
Sustainability and Environment:
Enabling a sustainable future through the adoption of renewable energy, and committing to environmental responsibility.

Partnership:
NOC aims to achieve these through strategic partnerships with Europe and rest of the world; providing cost-effective energy solutions for Africa, Europe, Far East, and Asia.

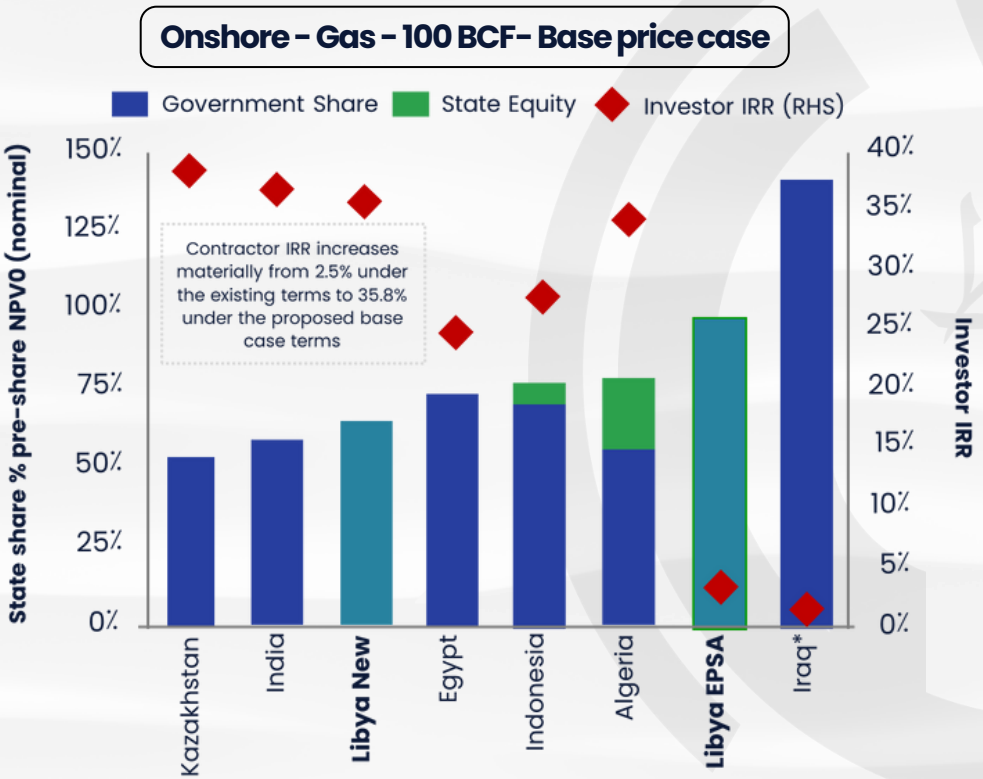
Exploitation of Resources:
Through creativity and innovation, NOC makes a positive impact locally and globally.

Key Business Drivers for Growth

The objective is to obtain a maximum value from the country's HC resources to develop the country's economy.



Why Invest in Libya



New Fiscal Arrangements:

- Attractive and competitive Fiscal and Commercial Terms under the Umbrella of PSA
- New formula based on A-Factor improves 2nd Party Return on Investment.
- Removed daily production base factor (B factor).
- Contractor shares profit with NOC from day one.
- Adopt a sliding scale profitability-based (R-factor) structure instead of step change mechanics.
- Fixed rate for cost recovery, which shortens the pay back period.
- The contractor has sole responsibility for costs.
- Income Tax paid by NOC on behalf of the contractor.
- More power in decision making in the operator management.

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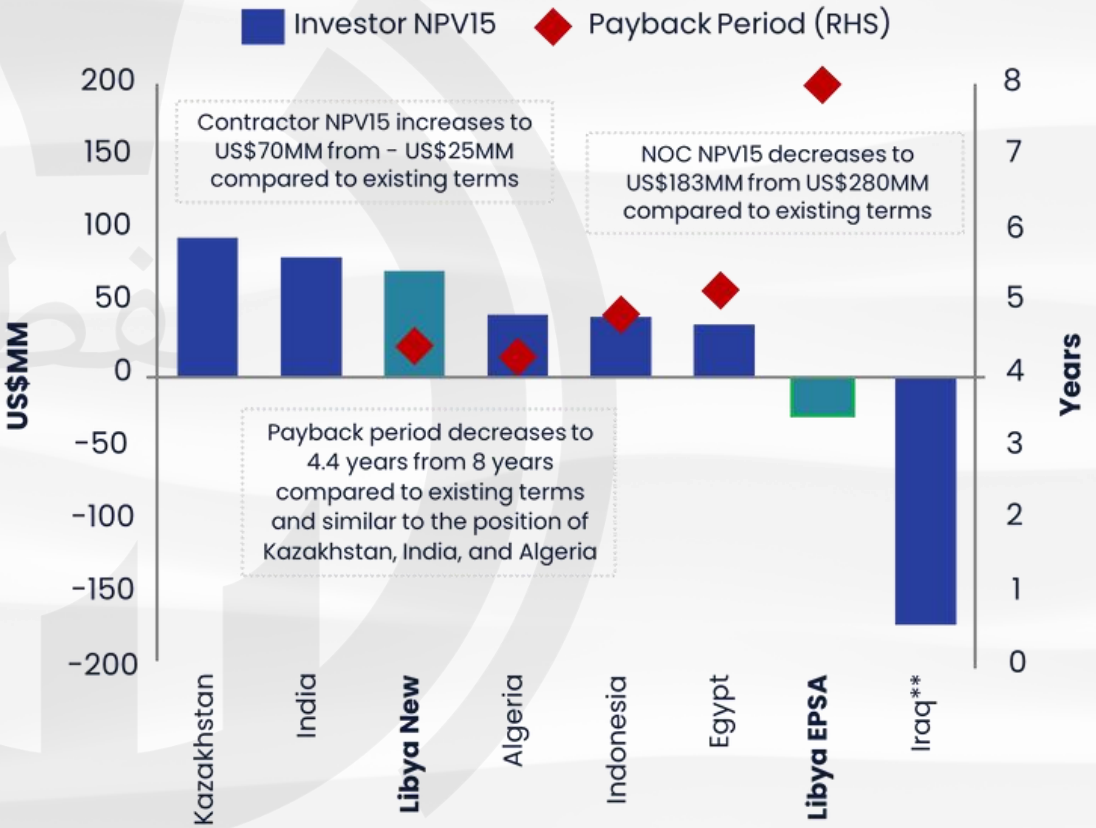
LIBYA AS AN INVESTMENT CHOICE

Export Markets:
- Located in the main hub of European and World energy markets.

Infrastructure:
- Established infrastructure for production, transportation, and export.

Ullage:
- Ullage to accommodate 0.5 MMbopd.

Issued New Petroleum Regulation No#10 replacing Regulation No#8 for major improvements



Sedimentary Basins

A blend of frontier and emerging basins with world-class materiality.

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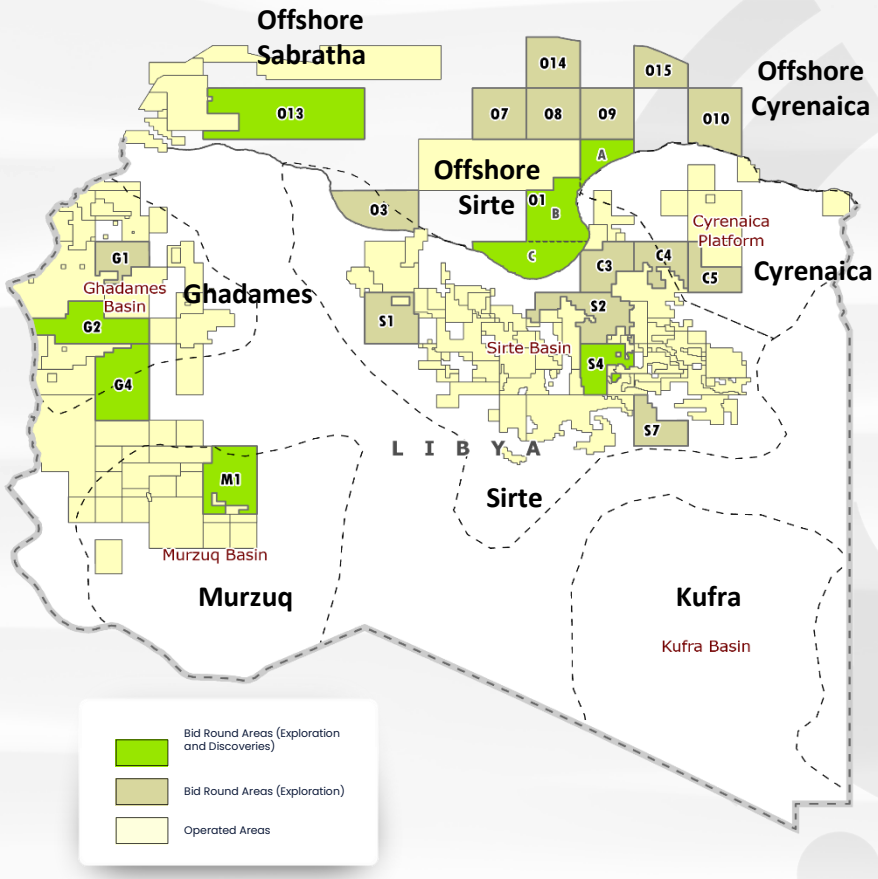
Exploration Opportunities



11
Onshore Areas

11
Offshore Areas

18 Bboe
Yet-To-Find in the offered Areas

>10 Bboe
In-place Resources
(Mapped Prospectivity)

22 Areas are on offer for oil and gas opportunities.

Onshore Areas

Ghadames Area	03
Murzuq Area	01
Sirte Area	04
Cyrenaica Area	03

Offshore Areas

Sabratha Area	01
Sirte Area	03
Cyrenaica Area	07

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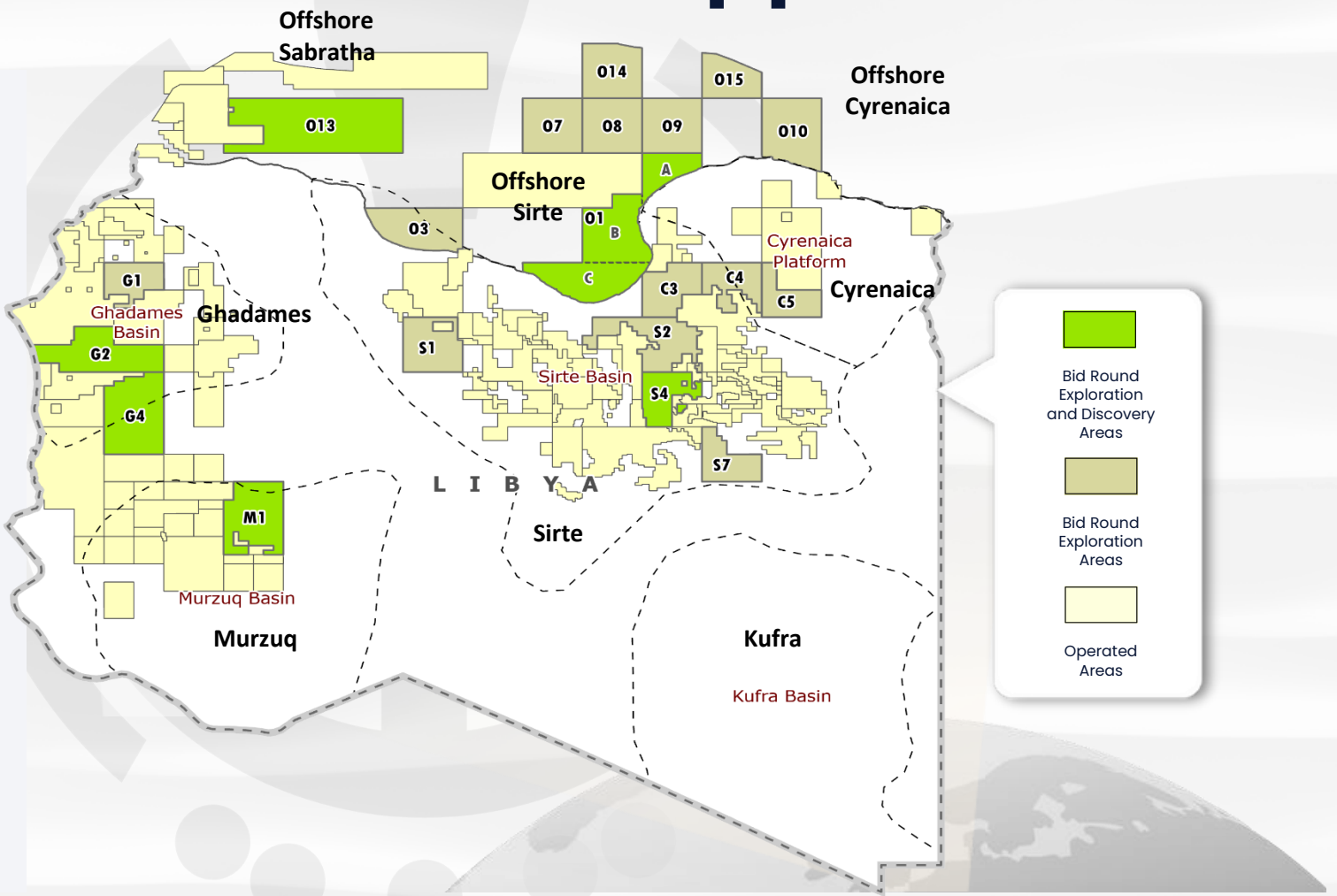
IN DETAIL

Exploration Opportunities

235,267 km²
Total Area

128,714 km²
Offshore Area

106,553 km²
Onshore Area



22
Bidding Areas

Ghadames Onshore

Area Code	Area Names	Area Size (in km²)
G1	64	6,576.521
G2	79,80,81	13,428.78
G4	97,113	15,262.52

Sirte Onshore

Area Code	Area Names	Area Size (in km²)
S1	86	9,781.061
S2	89,90	11,186.38
S4	106	7,437.003
S7	123	7,454.58

Cyrenaica Platform Onshore

Area Code	Area Names	Area Size (in km²)
C3	73	8,262.856
C4	74	7,218.66
C5	75	6,661.833

Offshore Areas

Area Code	Area Names	Area Size (in km²)
O1A	40	5,629
O1B	39,55,56	12,167.54
O1C	71,72,73	11,141.59
O3	51,52	11,322.05
O7	22	10,306.7
O8	23	10,306.71
O9	24	10,364.92
O10	26,42	12,305.89
O13	17,18,19	28,205.79
O14	08	9,995.81
O15	10	7,040.03

Murzuq

Area Code	Area Names	Area Size (in km²)
M1	131,147	13,133.24

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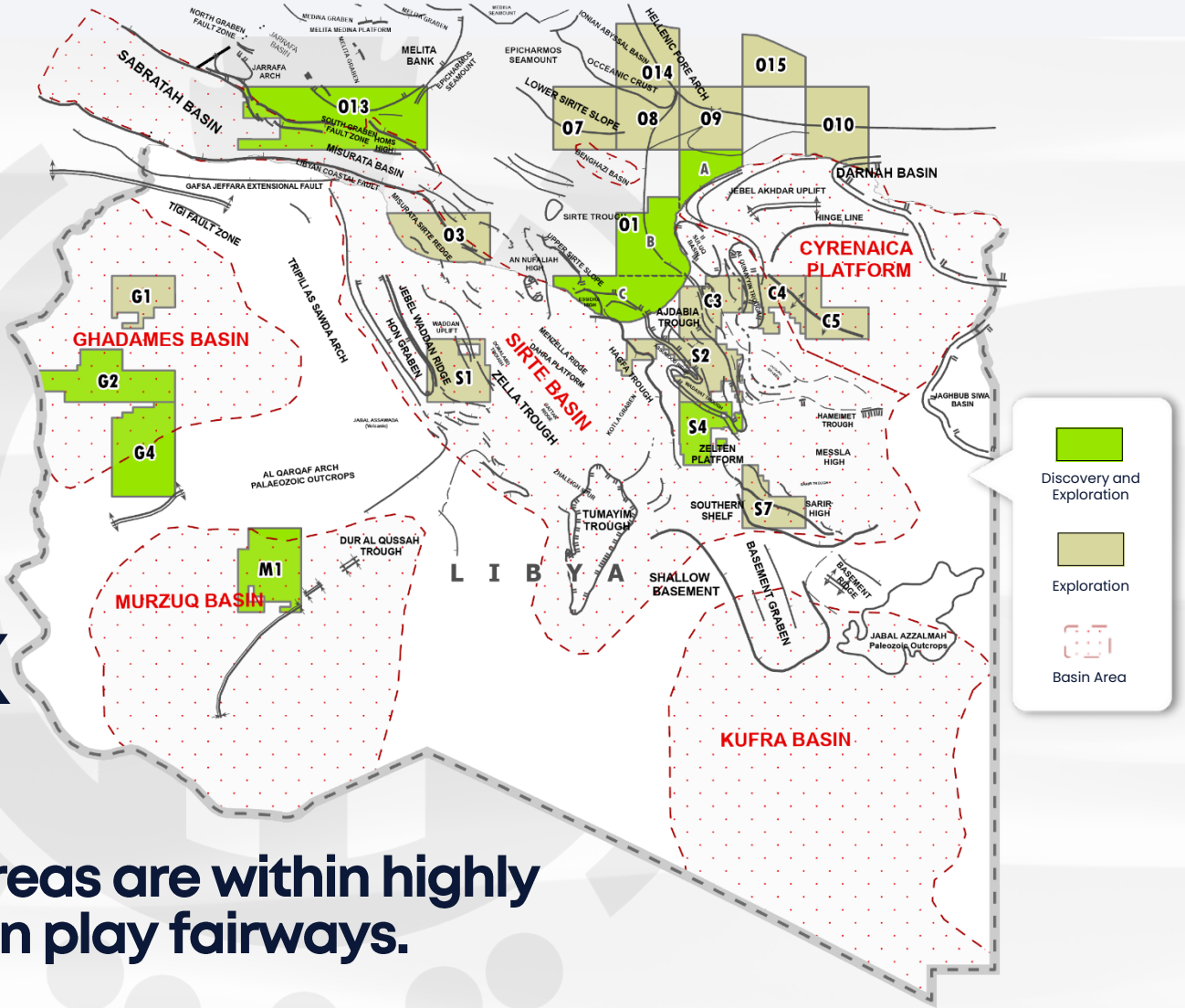
EXPLORATION AND DEVELOPMENT OPPORTUNITIES

Geological Framework



Offered exploration areas are within highly prosperous and proven play fairways.

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DETAILS

Discovered Reserves

19
Discoveries
In 9 Areas

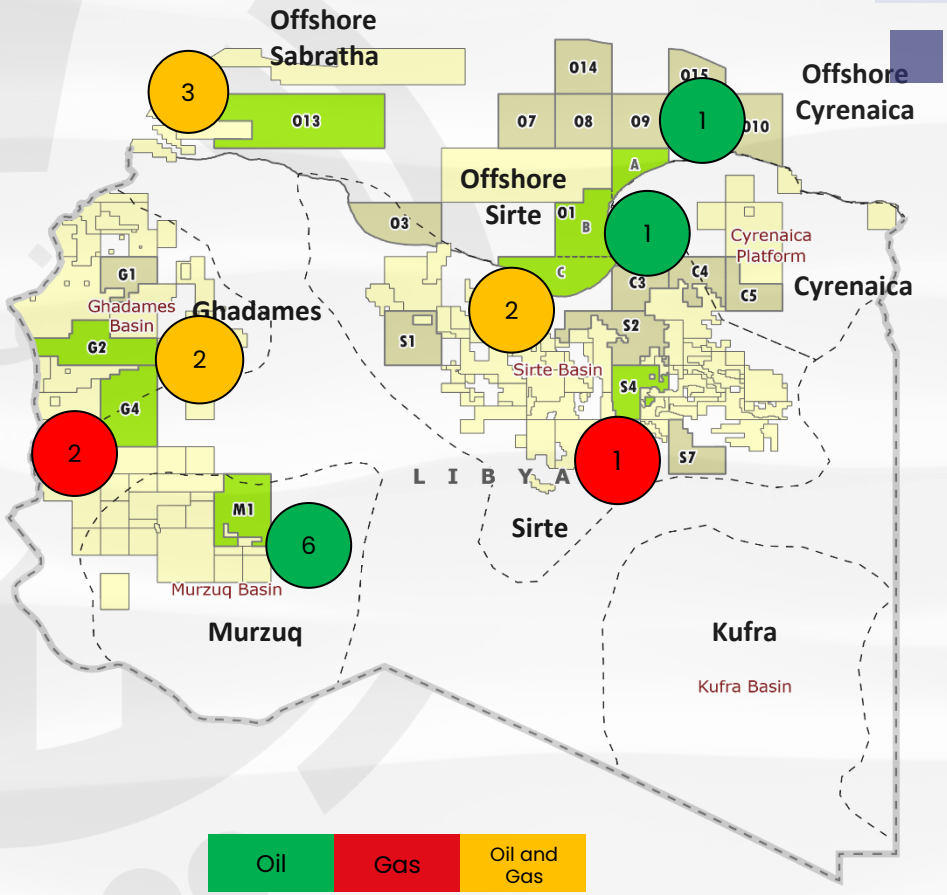
7
Discoveries
In 4 Offshore Areas

12
Discoveries
In 5 Onshore Areas

In-Place Reserves **1.63 Bboe**.

No.	Area	No. of Discoveries	Reserves MMbbls/MMboe
1	O13 Sabratha Offshore	3	**730**
2	O1A Cyrenaica Offshore	1	**53**
3	O1B Sirte Offshore	1	**147**
4	O1C Sirte Offshore	2	**206**
5	M1 Murzuq Onshore	6	**181**
6	G2 Ghadames Onshore	2	**50**
7	G4 Ghadames Onshore	2	**159**
8	S4 Sirte Onshore	1	**100**

***One additional small discovery Onshore S2**



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INFRASTRUCTURE AND

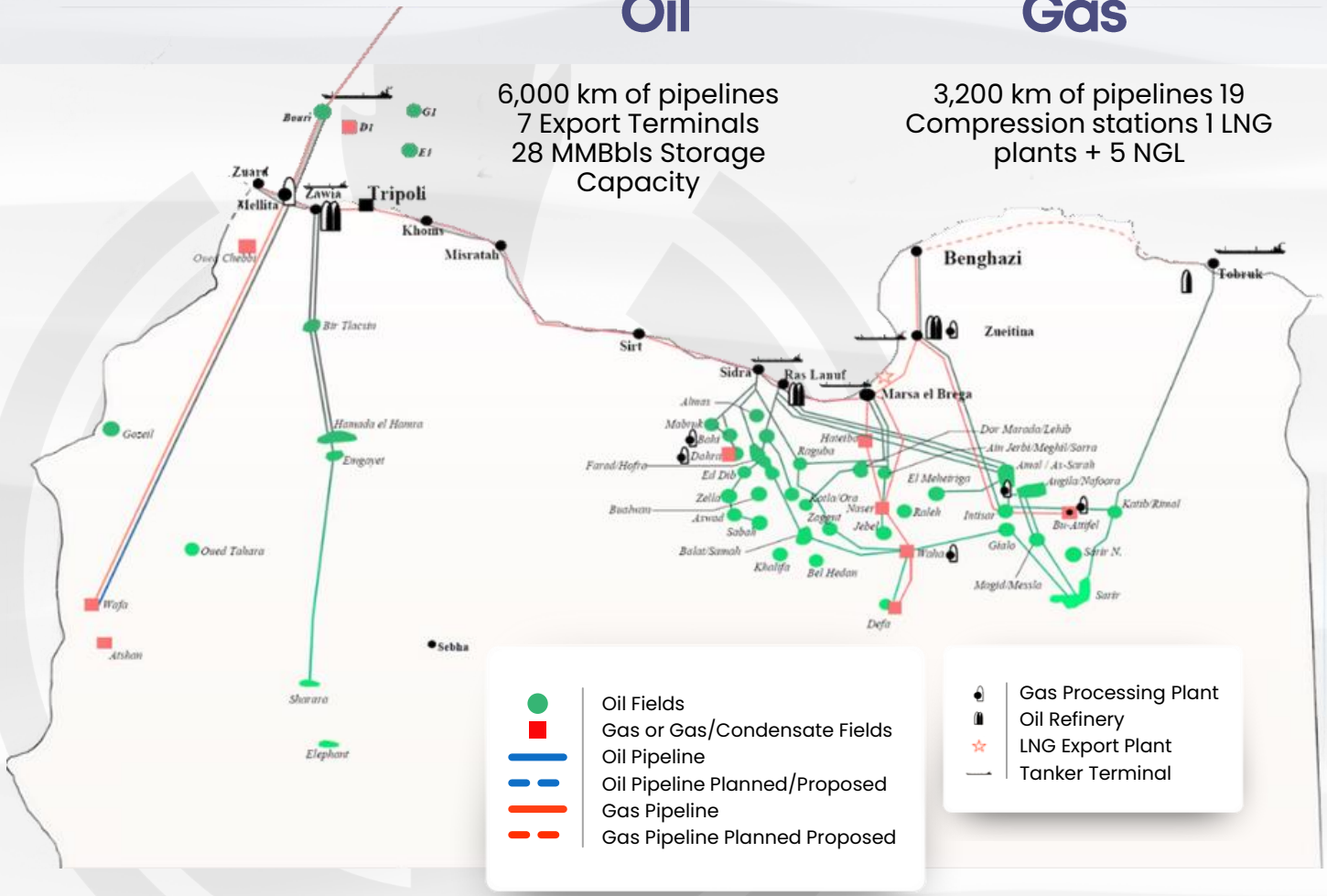
Export Markets

Oil

6,000 km of pipelines
7 Export Terminals
28 MMBbls Storage Capacity

Gas

3,200 km of pipelines 19 Compression stations 1 LNG plants + 5 NGL



Libya's NOC provides an infrastructure that is
Well-connected for the Export of Hydrocarbons.

DATABASE

Wells and Seismic

Good to fair quality seismic and well data sets with a handsome number of geological reports.

233
Wells

18
3D Surveys

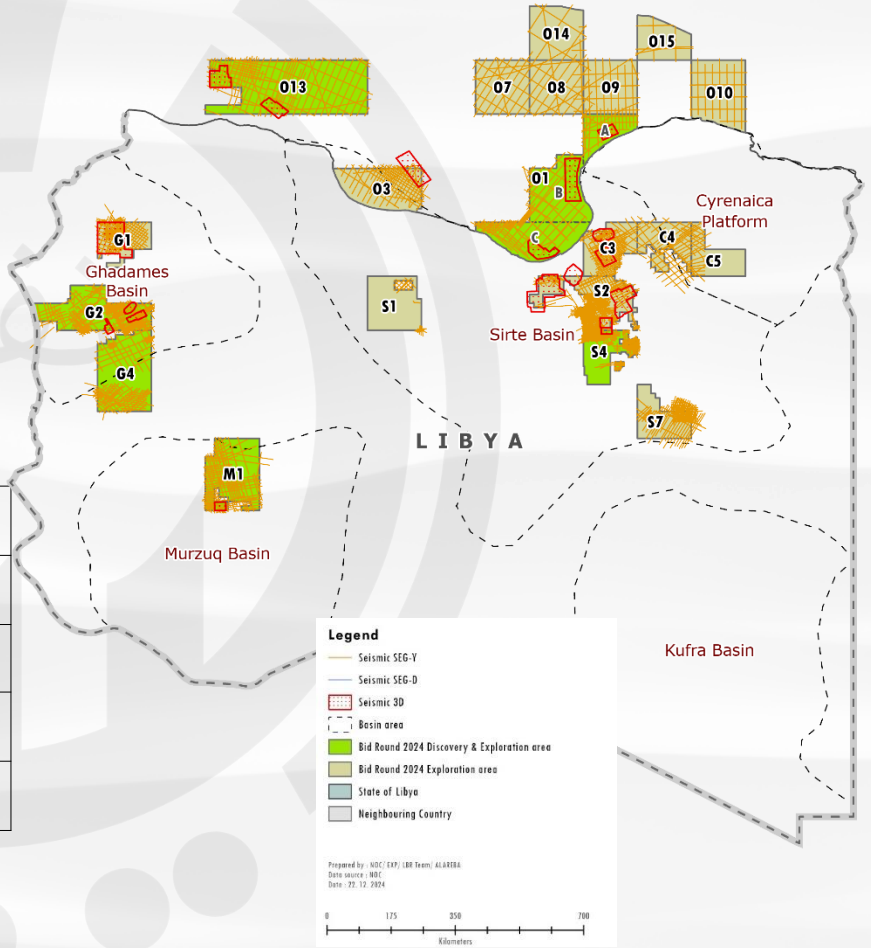
81,805
Line kms of 2D

Wells and Basins Data

Data	Wells
Sirte Basin	138
Ghadames Basin	23
Murzuq Basin	22
Cyrenaica Platform Onshore	18
Offshore Basins	32

Seismic Information

Data	Seismic
No.of 2D Seismic Lines	2,273
Length of 2D Seismic km	81,805
No of 3D Seismic Surveys	18
3D Seismic Coverage km²	23,508



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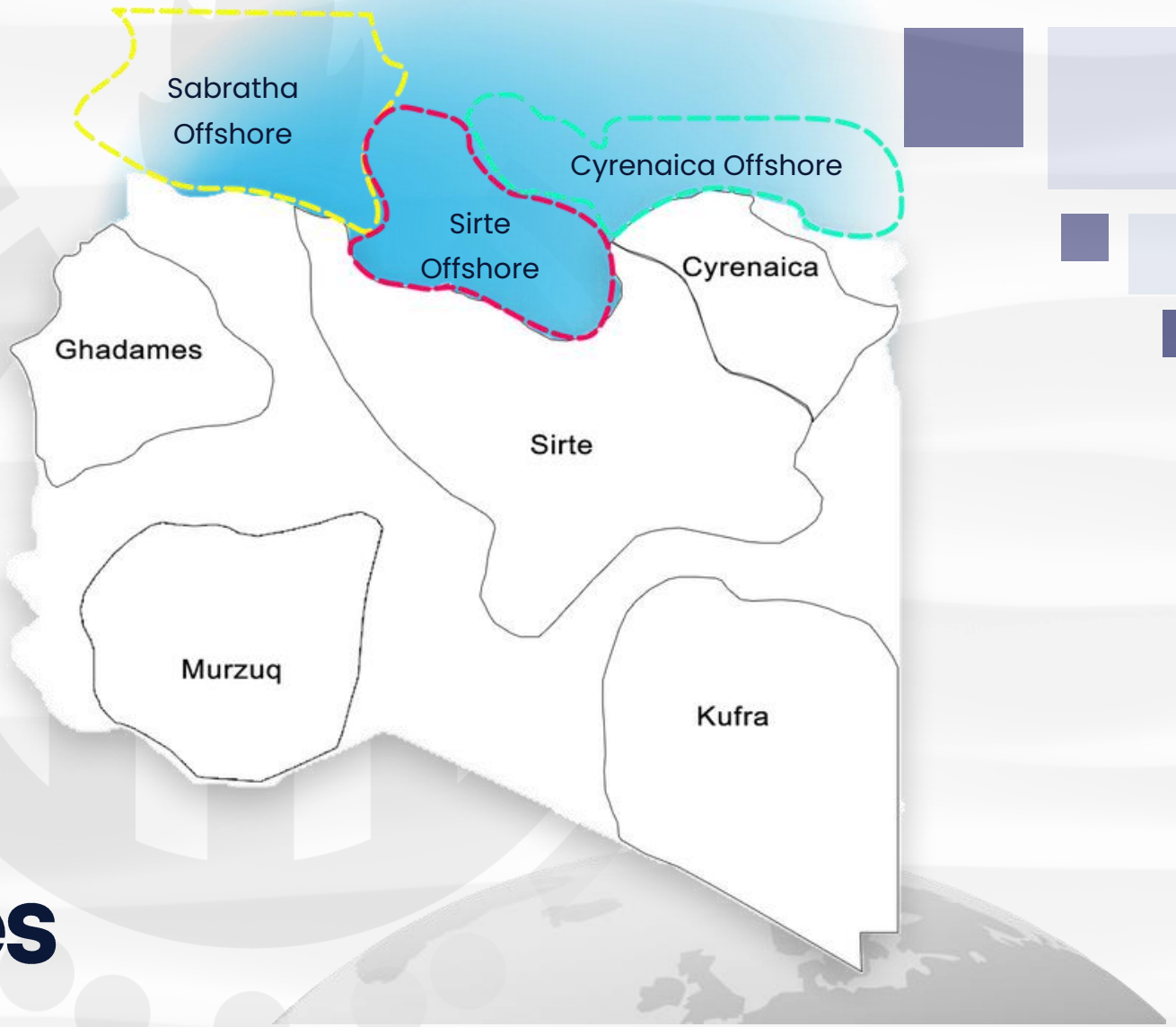


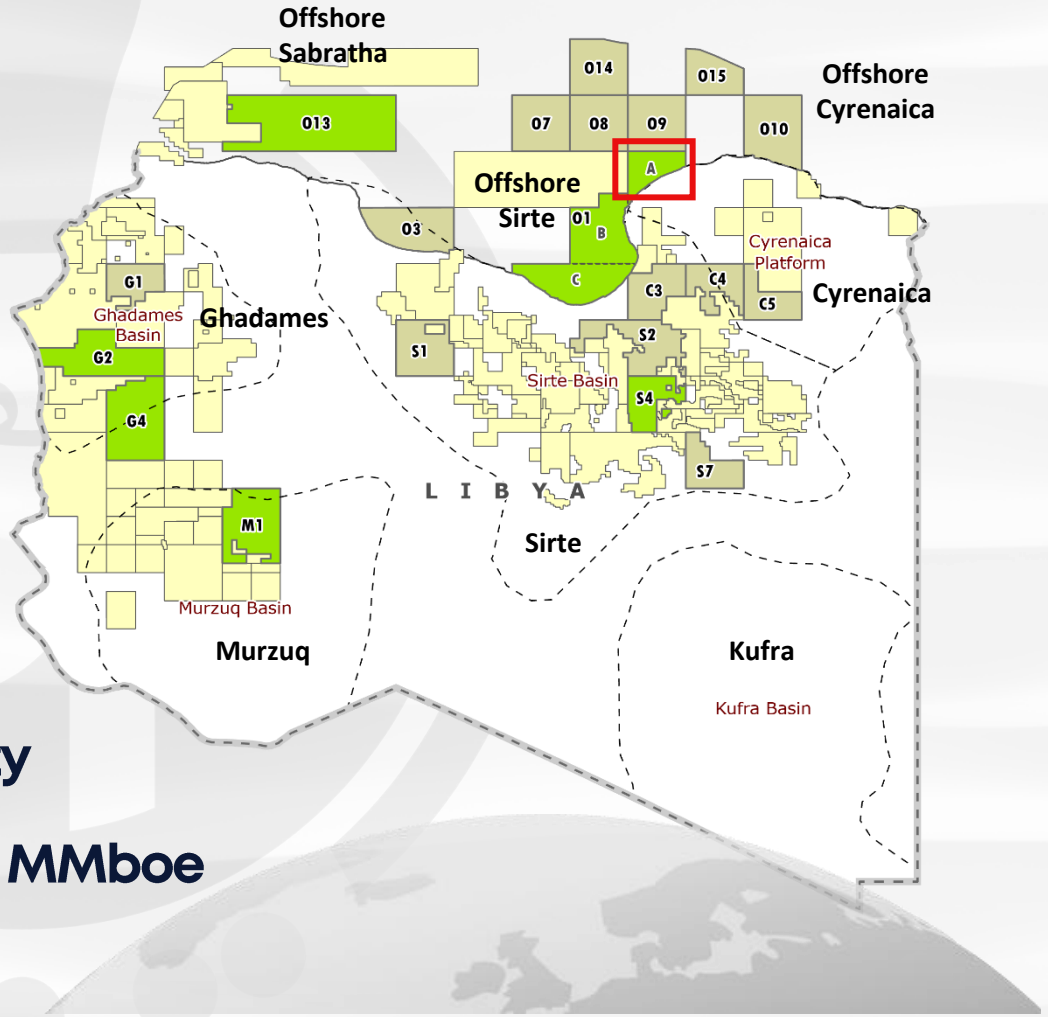
Offshore Opportunities

AREA 40 (1,3,4) OFFSHORE Cyrenaica

Offshore O1A

Details

Fiscal Regime	PSA
Size	5,629 km²
Location	Offshore Cyrenaica
Water Depth (m)	>500 m
Database	• 2D Lines 26 • 2D Length 1502 line km • 3D Survey 1 • 3D Survey 627 km² • Wells 4



Exploration and Development Opportunity

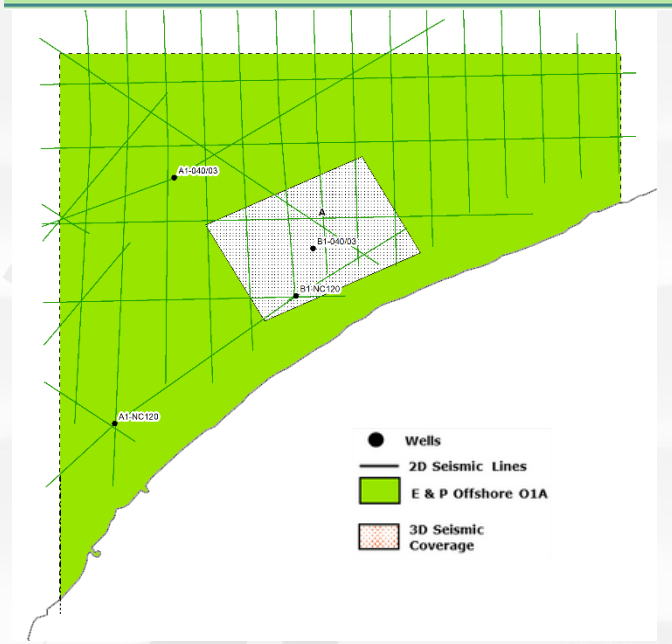
One Gas Discoveries In-Place Reserves 53 MMboe

AREA 40 (1,3,4) OFFSHORE Cyrenaica

Overview

Offshore Cyrenaica

AREA	# Of 2D Lines	2D Length "Km"	# Of 3D Survey	3D Survey "Km2"	# Of Wells
O1A	26	1502	1	627	4



Petroleum Systems and Plays

1. Cretaceous Sirte Shale PS (Proven)
2. Paleozoic to Early Cretaceous PSs (Proven)
3. Turonian Al Baniya Carbonate Play
4. Albian Daryanah Carbonate Play
5. Berriasian and Late Jurassic Sirual Play

Tectonic Framework

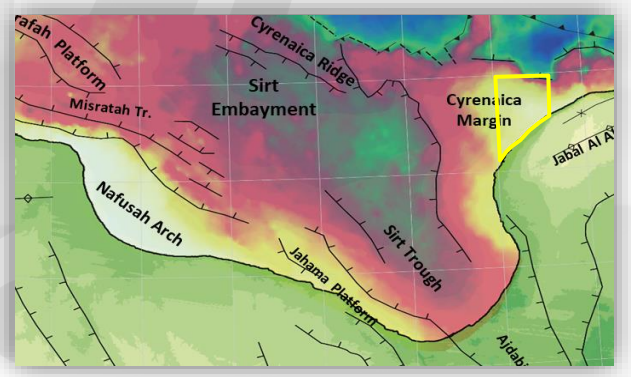
Geological Province: Offshore Cyrenaica.

Prospectivity

- 1 Prospects and +3 Leads
- In-Place: 0.5 Bboe.

Discoveries

Between 1983 and 2010, four exploratory wells have been drilled in the area, resulting in the A1-NC120 oil discovery. The current in-place reserves are estimated at around 53 million barrels (2P reserve).

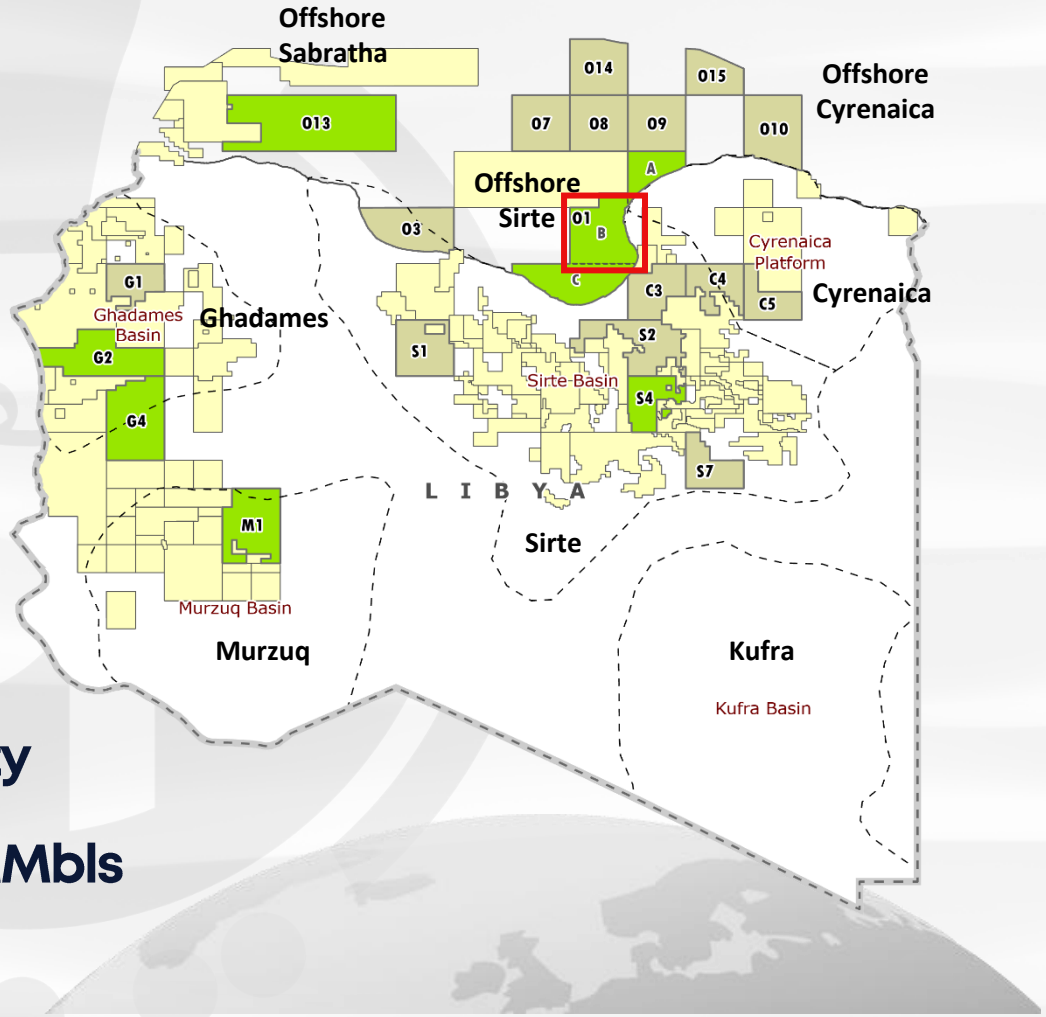


AREAS 39(2), 55(1,2,3,4), 56(1) – OFFSHORE SIRTE

Offshore O1B

Details

Fiscal Regime	PSA
Size	12,167.5 km²
Location	Offshore Sirte Embayment
Water Depth (m)	<1000 m
Database	• 2D Lines 31 • 2D Length 1,968 line km • 3D Survey 1 • 3D Survey 2,375 km² • Wells 3



Exploration and Development Opportunity

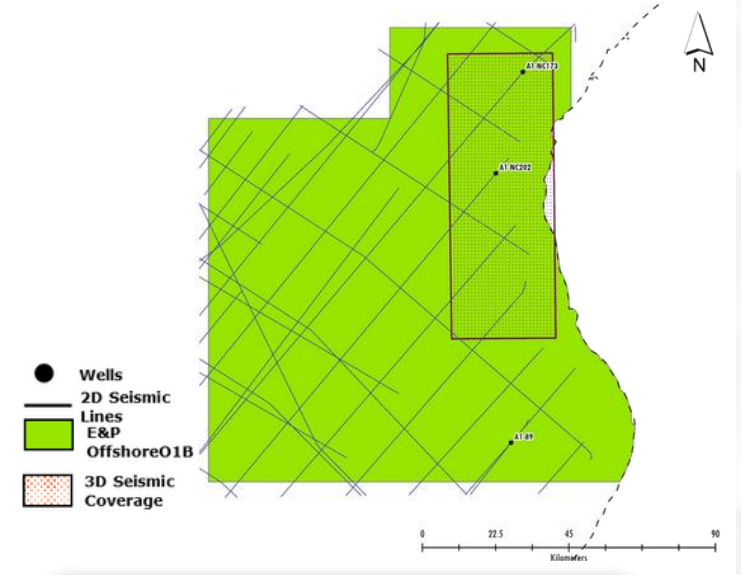
One Oil Discovery In-Place Reserves 147 MMbls

O1B - AREAS 39(2), 55(1,2,3,4), 56(1)

Overview

Offshore Sirte

AREA	# Of 2D Lines	2D Length "Km"	# Of 3D Survey	3D Survey "Km2"	# Of Wells
O1B	31	1,968	1	2375	3



Petroleum Systems and Plays

1. Cretaceous Sirte Shale PS
2. Late Cretaceous Cenomanian-Turonian shales
3. Paleozoic to Early Cretaceous PSs
4. Miocene Clastics Play
5. Olig-Miocene carbonate reservoir
6. Middle Eocene Gialo/Derna Limestone
7. Lower Eocene Nummulitic Gir L.st Play
8. Turonian Etel Limestone Play
9. Turonian and Cenomanian U and L Al baniyah Fm
10. Cenomanian Lidam Dolomites/Bahi Sst. Play
11. Pre-Cenomanian Sarir (Nubian) fluvial to marginal marine sandstone Play
12. Paleozoic clastic /quartzite Play

Tectonic Framework

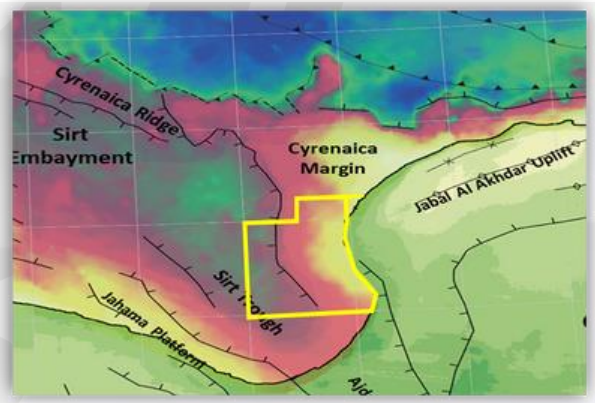
Geological Province: Offshore Sirte Embayment.

Prospectivity

- 3 Prospects and 3 Leads
- In-Place: 0.7 Bboe to 1.5 Bboe.

Discoveries

A1-NC202 oil discovery In-Place Reserves estimated around 147 Million barrels.

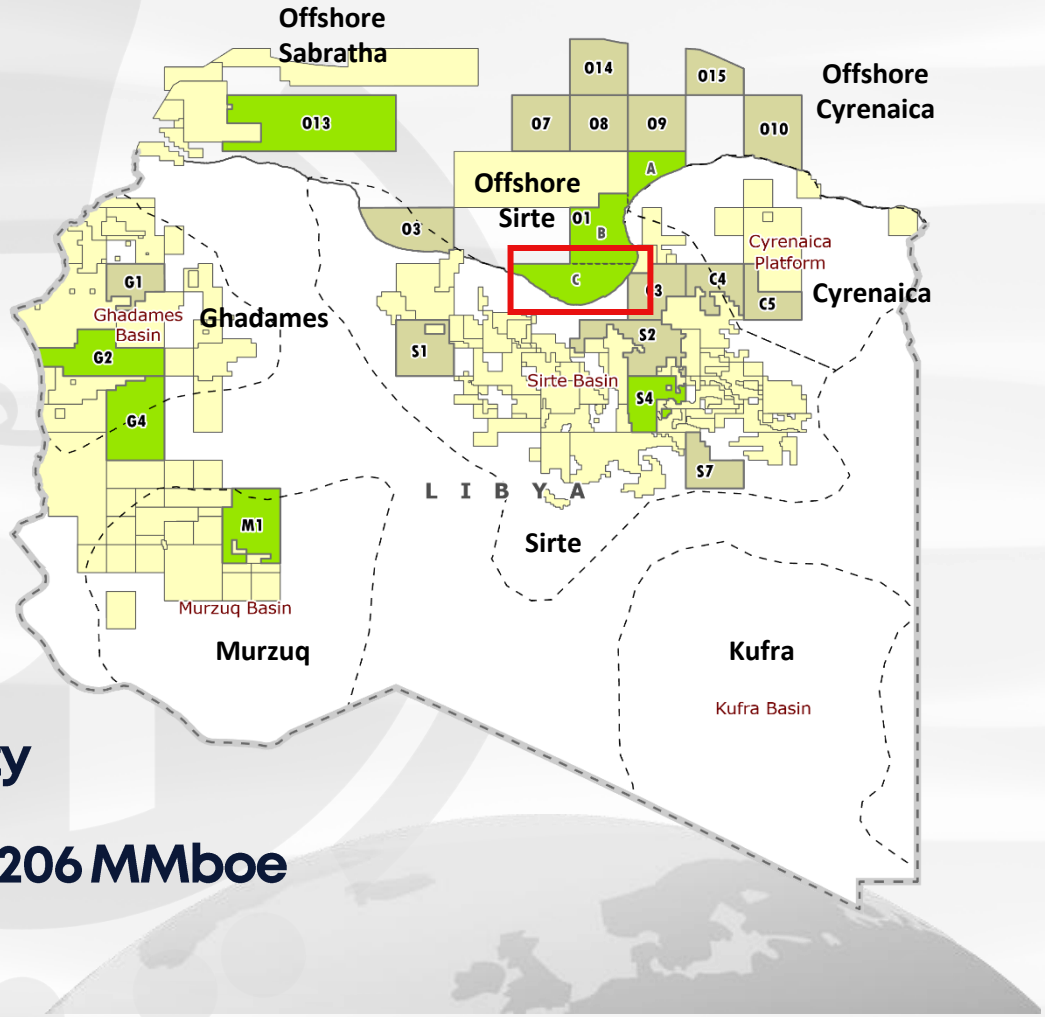


AREAS 71 (2,3,4), 72 (1,2,3,4) ,73 (3) - OFFSHORE SIRTE

Offshore O1C

Details

Fiscal Regime	PSA
Size	11,141.6 km²
Location	Offshore Sirte
Water Depth (m)	<700 m
Database	• 2D Lines 112 • 2D Length 2,500 line km • 3D Survey 1 • 3D Survey 2,156 km² • Wells 7



Exploration and Development Opportunity

2 Oil & Gas Discoveries In-Place Reserves 206 MMboe

O1C - AREAS 71(2,3,4), 72(1,2,3,4),73(3)

Overview

Offshore Sirte

Petroleum Systems and Plays

1. Cretaceous Sirte Shale PS
2. Paleozoic to Early Cretaceous PSs
3. M-L Eocene Gedari and Gir Carbonate play
4. Maastrichtian Kalash Limestone/ Dolomite Play
5. Santonian-Coniacian Tagrifet and Kalash Limestone Play
6. Turonian Argub mixed Clastic/ Carbonate Play
7. Cenomanian to Turonian Bahi / Lidam / Rachmat mixed Clastics and Carbonate Play with porosity ranges from 12 to 25%.
8. Albian Sarir (Nubian) Fluvial to Marginal Marine Clastics Play up to 100 feet thick with porosity varies from 6 to 23% and permeability <10mD to 290 mD

Tectonic Framework

Geological Province: Offshore Sirte Embayment.

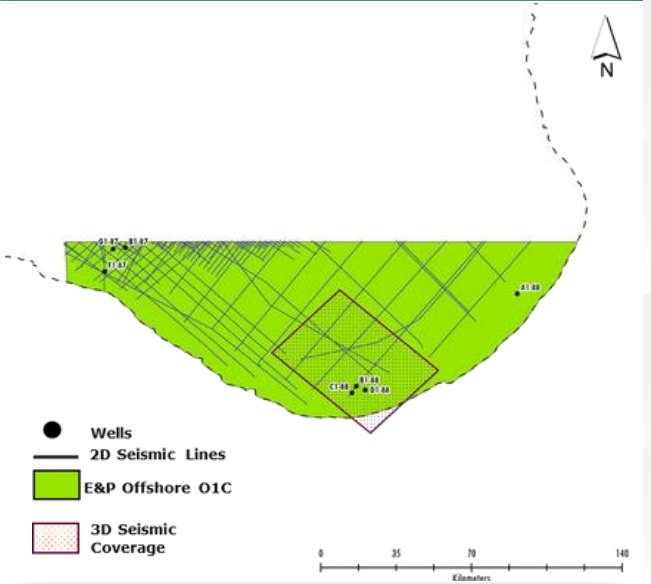
Prospectivity

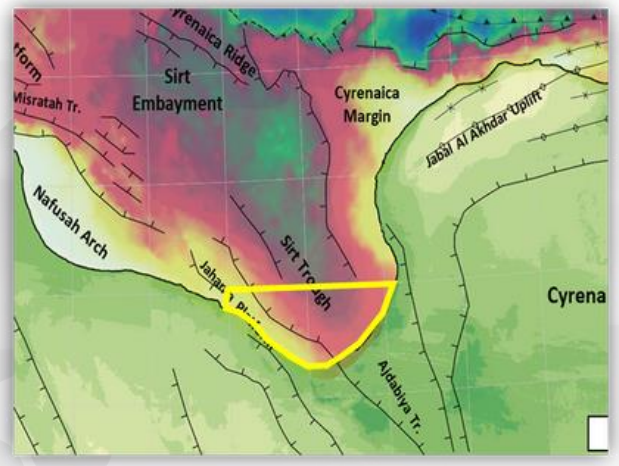
- 3 Prospects and 3 Leads
- In-Place: 0.7 Bboe to 1.5 Bboe

Discoveries

2 Gas Discoveries In-Place P50 Reserves estimated around 206 MMboe (2P reserve).
Gas is present in area 71/72, NC201 block,ARCO's B1-88 (1966) and D1-88 (1968) wells discovered gas in Cretaceous (Bahi) sands.

AREA	# Of 2D Lines	2D Length "Km"	# Of 3D Survey	3D Survey "Km2"	# Of Wells
O1C	112	2,500	1	2,156	7

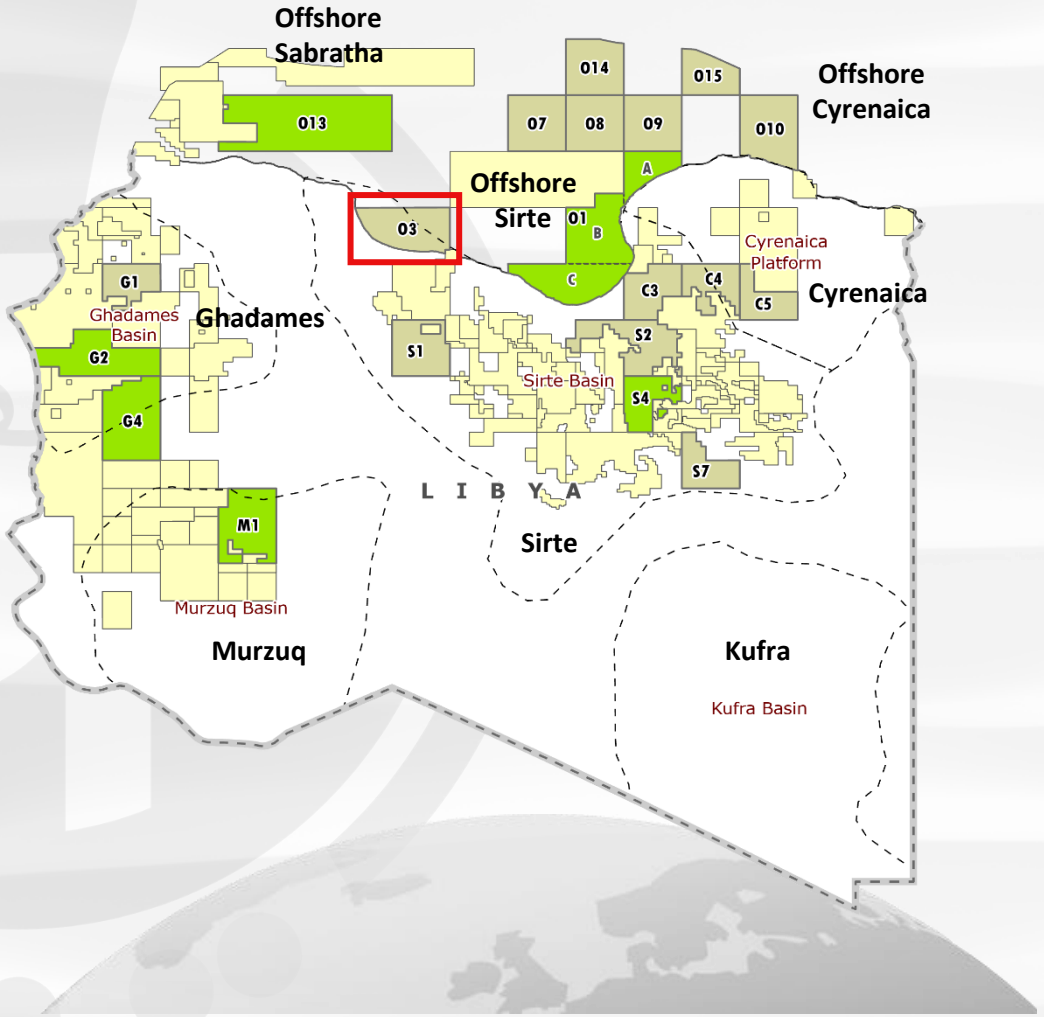




Offshore O3

Details

Fiscal Regime	PSA
Size	11,332 km²
Location	Offshore Sirte
Water Depth (m)	<1000 m
Database	• 2D Lines 45 • 2D Length 3,134 line km • 3D Survey 1 • 3D Survey 1,883 km² • Wells 5



Exploration Opportunity

O3 - AREAS 51 (2,3,4), 52(1,2,3,4)

Overview

Offshore Sirte

Petroleum Systems and Plays

1. Cretaceous Sirte Shale petroleum system (Proven)
2. Paleozoic to E. Cretaceous PSs (Proven)
3. M-L Eocene Gedari and Gir Carbonate Play
4. Maastrichtian Kalash Limestone/ Dolomite play
5. Santonian-Coniacian Tagrifet and Kalash Limestone Play
6. Turonian Argub mixed Clastic/ Carbonate Play
7. Cenomanian to Turonian Bahi / Lidam / Rachmat mixed Clastics and Carbonate Play with porosity ranges from 12 to 25%.
8. Albian Sarir (Nubian) Fluvial to Marginal Marine Clastics Play up to 100 feet thick with porosity varies from 6 to 23% and permeability varies from <10mD to 290 mD

Tectonic Framework

Geological Province: Nafusah Arch / Waddan Platform.

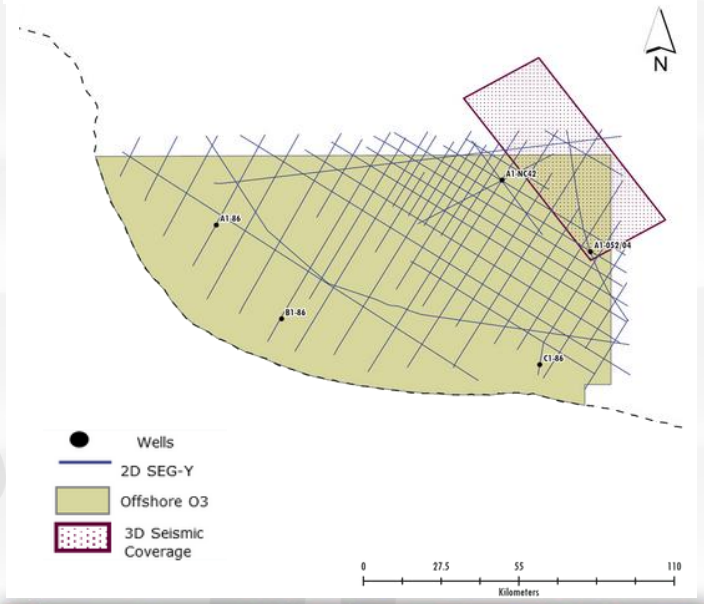
Prospectivity

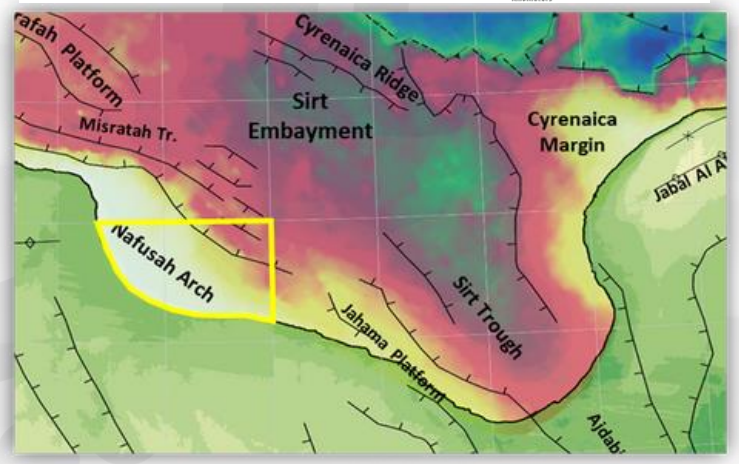
- 2 Prospects and 3 Leads
- In-Place: 1.9 Bboe to 3.5 Bboe.

Discoveries

The Offshore O3 on trend with the Waddaan Uplift and Dahrah-Hufrah Trends where a total of 32 oil and gas fields have been discovered with a total in-place reserves of 8.56 Bboe. The Pre-Cambrian to Paleocene reservoirs have excellent reservoir quality – porosity ranges from 15 to 32% with average of 26% while permeability values range between 35 mD to 150 mD.

AREA	# Of 2D Lines	2D Length "Km"	# Of 3D Survey	3D Survey "Km2"	# Of Wells
O3	45	3,134	1	1,883	5



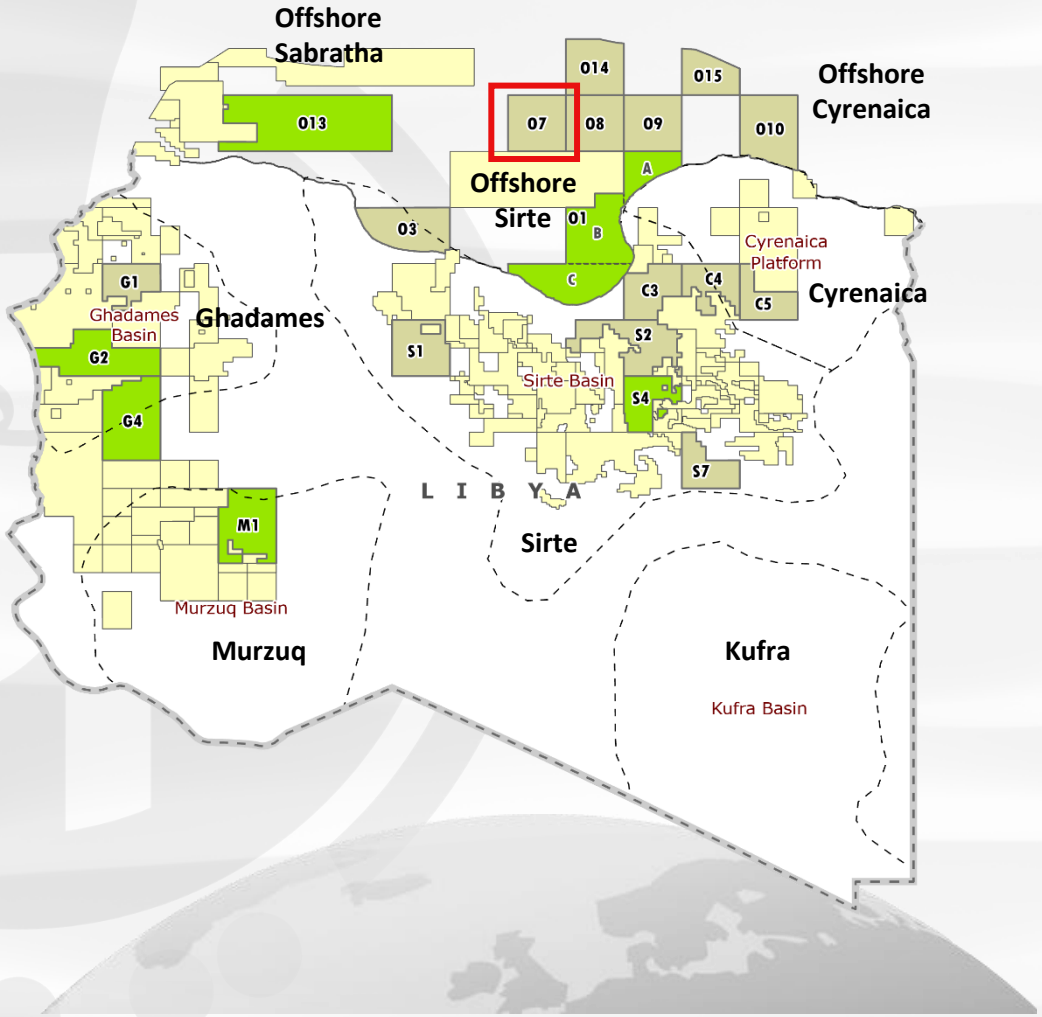


AREA 22 (1,2,3,4) – DEEP OFFSHORE AREA

Offshore 07

Details

Fiscal Regime	PSA
Size	10,306 km²
Location	Deep Offshore Sirte / Cyrenaica Ridge
Water Depth (m)	<1000 m
Database	• 2D Lines 21 • 2D Length 1,704 line km • 3D Survey None • Wells None



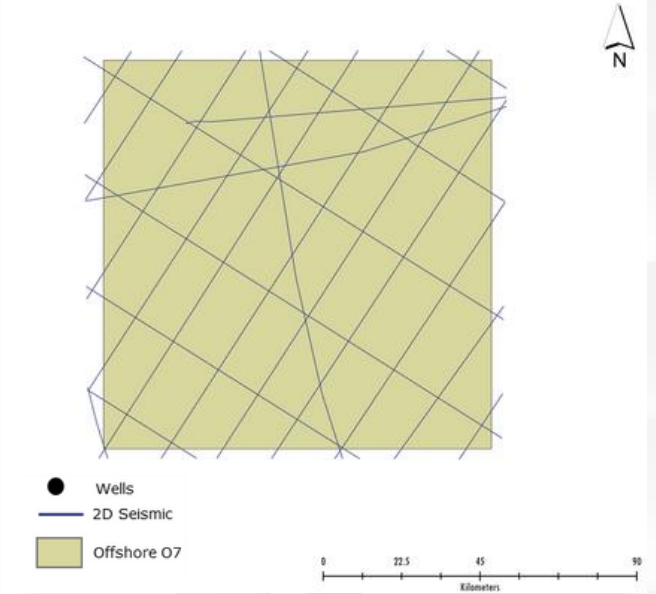
Exploration Opportunity

O7 - AREA 22 (1,2,3,4)

Overview

Deep Offshore Area

AREA	# Of 2D Lines	2D Length "Km"	# Of 3D Survey	3D Survey "Km2"	# Of Wells
O7	21	1,704	0	0	0



Petroleum Systems and Plays

1. Cretaceous Sirte Shale PS
2. Paleozoic to Early Cretaceous PSs
3. Lower Cretaceous "Syn-Rift" clastics (shallow marine sandstones) Play
4. Secondary Deeper Later Triassic to Early Jurassic clastics Play

Tectonic Framework

Geological Province: Deep Offshore Sirte / Cyrenaica Ridge.

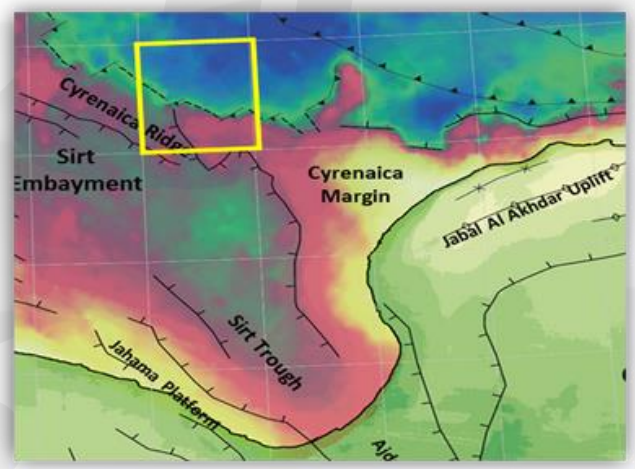
Prospectivity

- +10 Leads estimated as analogue to Area O1A
- Estimated >3Bboe.

Discoveries

No discovery in the Area O7, however, in the south of the Area 23, four discoveries of significance have been made, proving the working petroleum system in the offshore area, particularly within the Late Cretaceous and Eocene sequences.

The most prominent discovery was 2008 gas discovery A-54/1 well (Arous Al-Bahar), which tested 27 mmscf per day in Cenomanian carbonates. Current total in-place reserves estimates is reserves is over 406 MMboe.

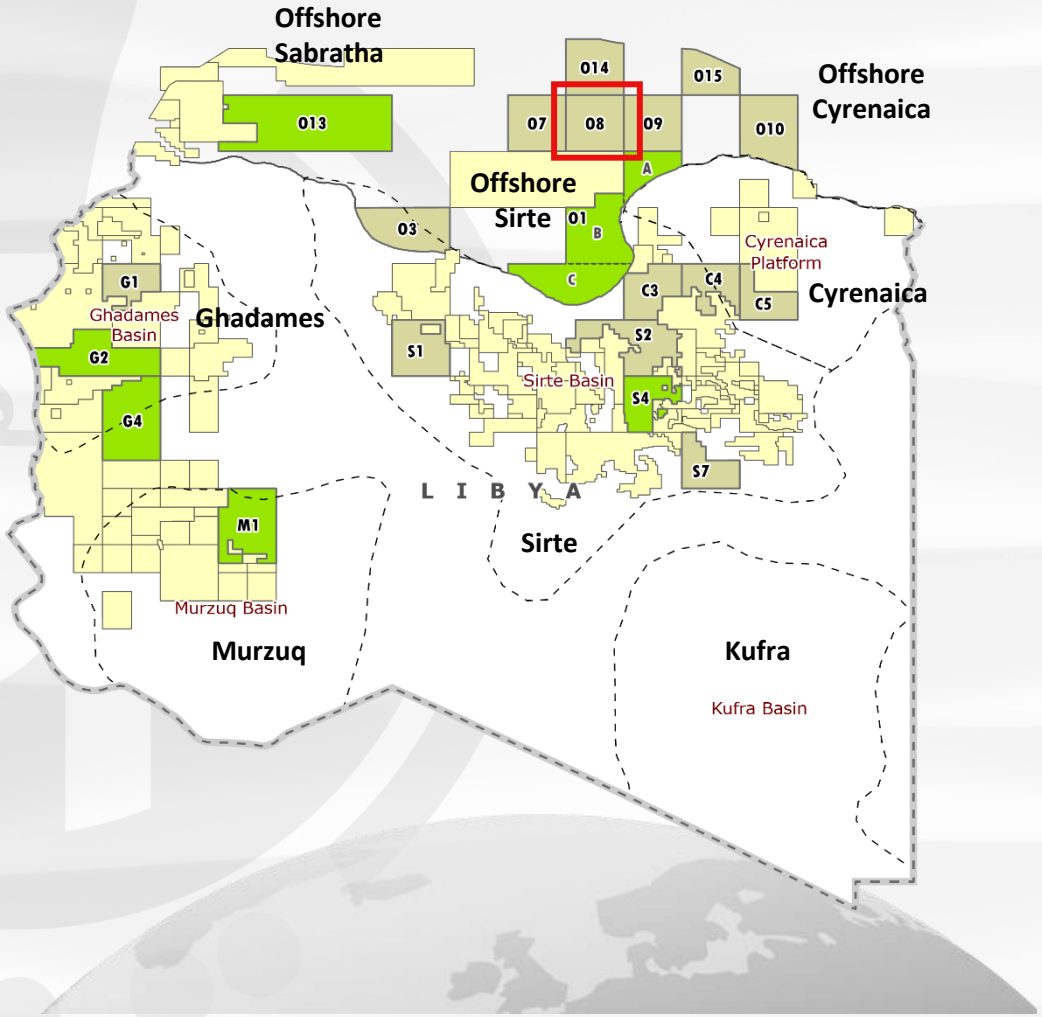


AREA 23(1,2,3,4) – DEEP OFFSHORE AREA

Offshore 08

Details

Fiscal Regime	PSA
Size	10,306.7 km²
Location	Offshore Cyrenaica Ridge
Water Depth (m)	1,000 m – 3,500 m
Database	• 2D Lines 24 • 2D Length 1,732 line km • 3D Survey None • Wells None



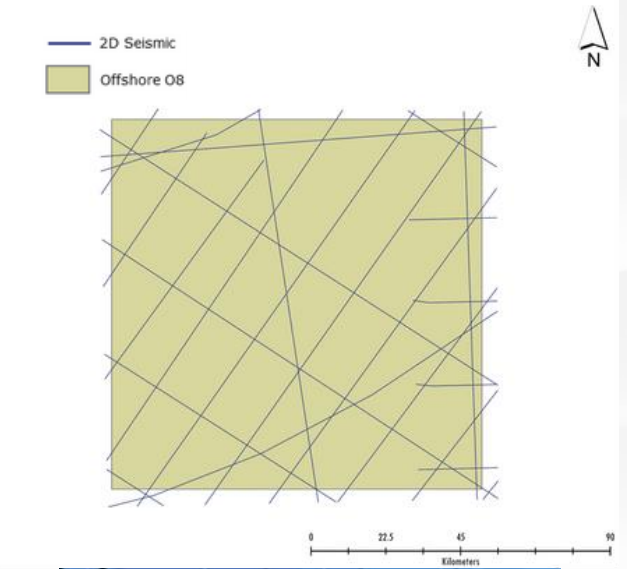
Exploration Opportunity

O8 - AREA 23 (1,2,3,4)

Overview

Deep Offshore Area

AREA	# Of 2D Lines	2D Length "Km"	# Of 3D Survey	3D Survey "Km2"	# Of Wells
O8	24	1,732	0	0	0



Petroleum Systems and Plays

Regionally proven Cretaceous Sirte Shale and Paleozoic to Early Cretaceous Mid-Nubian Shale Petroleum Systems.

Potential Lower Cretaceous Syn-rift Clastics Play and Late Triassic to Early Jurassic Plays.

1. Cretaceous Sirte Shale PS
2. Paleozoic to Early Cretaceous PSs
3. Pre-rift Early Cretaceous (Neocomian) Clastic Plays
4. Syn-rift Aptian-Albian clastics Plays
5. Syn-rift Jurassic - Triassic Clastic Plays

Tectonic Framework

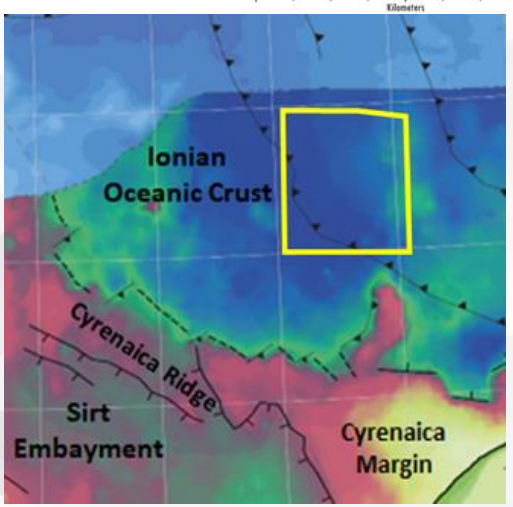
Geological Province: Offshore Cyrenaica Ridge.

Prospectivity

- + 15 Leads estimated as analogue to Area 39 in the south and Area O1A
- Estimated >3.7 Bboe.

Discoveries

No discovery in the Area O8 However, in the south of the Area 23, 4 discoveries of significance have been made, proving the working petroleum system in the offshore area, particularly within the Late Cretaceous and Eocene sequences. The most prominent discovery was 2008 gas discovery A-54/1 well (Arous Al-Bahar), which tested 27 mmscf per day in Cenomanian carbonates. Current total in-place reserves estimates is reserves is over 406 MMboe.

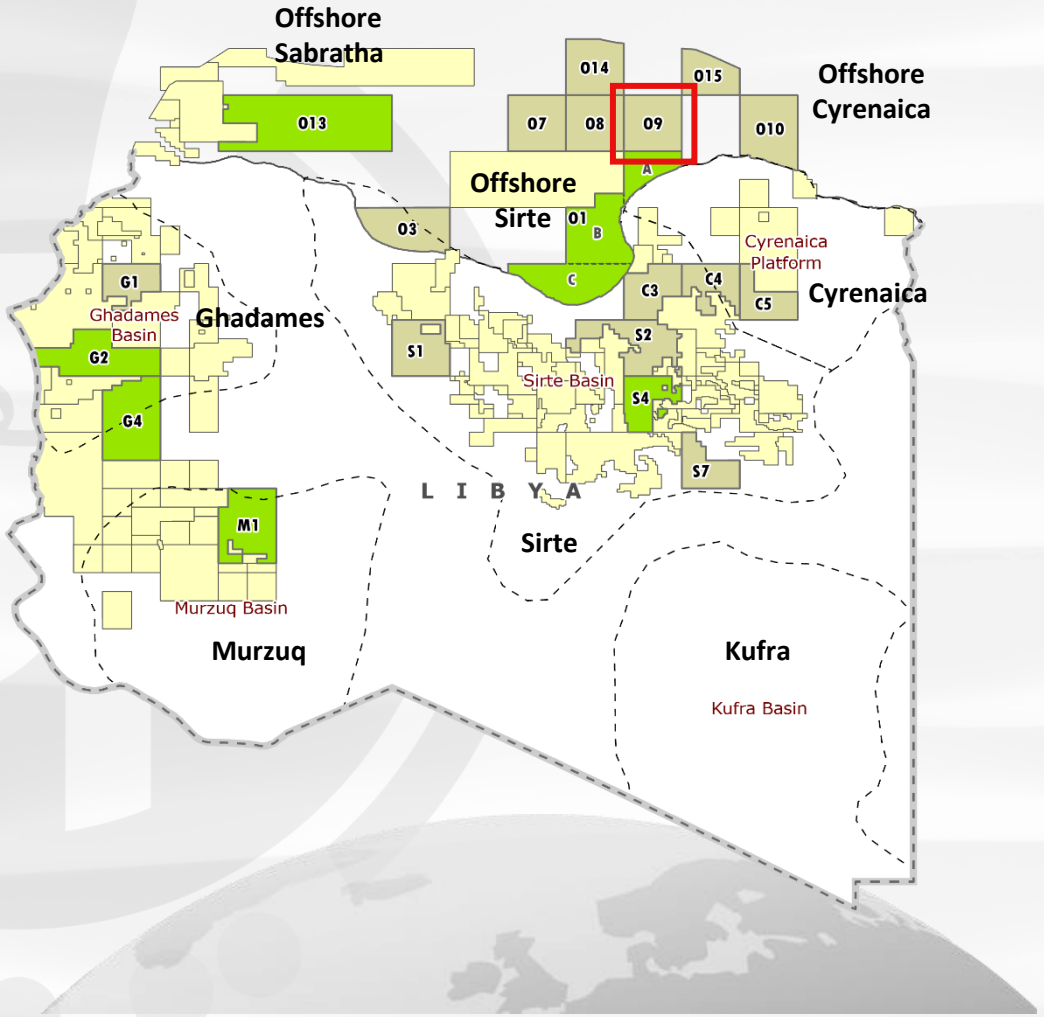


AREAS 24 (1,2,3,4) OFFSHORE CYRENAICA

Offshore 09

Details

Fiscal Regime	PSA
Size	10,365 km²
Location	Offshore Cyrenaica
Water Depth (m)	Deep to Ultra Deep (>1000m – 3500m)
Database	• 2D Lines 29 • 2D Length 2,593 line km • No 3D Survey • No Wells



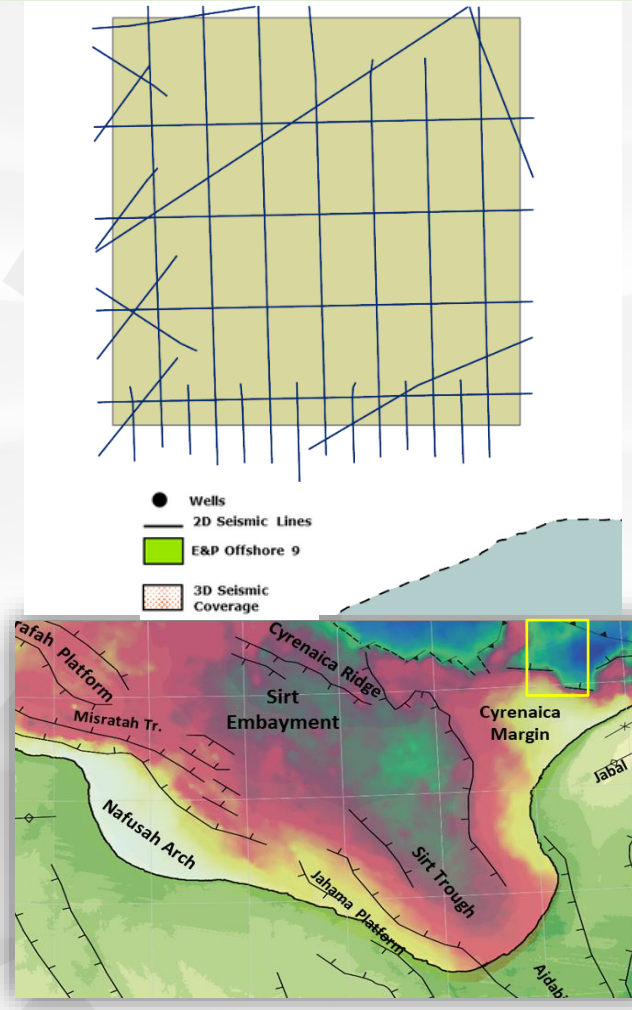
Exploration Opportunity

AREAS 24 (1,2,3,4) OFFSHORE CYRENAICA

Overview

Offshore Cyrenaica

AREA	# Of 2D Lines	2D Length "Km"	# Of 3D Survey	3D Survey "Km2"	# Of Wells
O9	29	2593	0	0	0



Petroleum Systems and Plays

Regionally proven Cretaceous Sirte Shale and Paleozoic to Early Cretaceous Mid-Nubian Shale Petroleum Systems.

Potential Lower Cretaceous Syn-rift Clastics Play and Late Triassic to Early Jurassic Plays.

1. Cretaceous Sirte Shale PS
2. Paleozoic to Early Cretaceous PSs
3. Pre-rift Early Cretaceous (Neocomian) Clastic Plays
4. Syn-rift Aptian-Albian clastics Plays
5. Syn-rift Jurassic - Triassic Clastic Plays

Tectonic Framework

Geological Province: Offshore Cyrenaica Ridge.

Prospectivity

- + 4 Leads Estimated >1.0 Bboe.

Discoveries

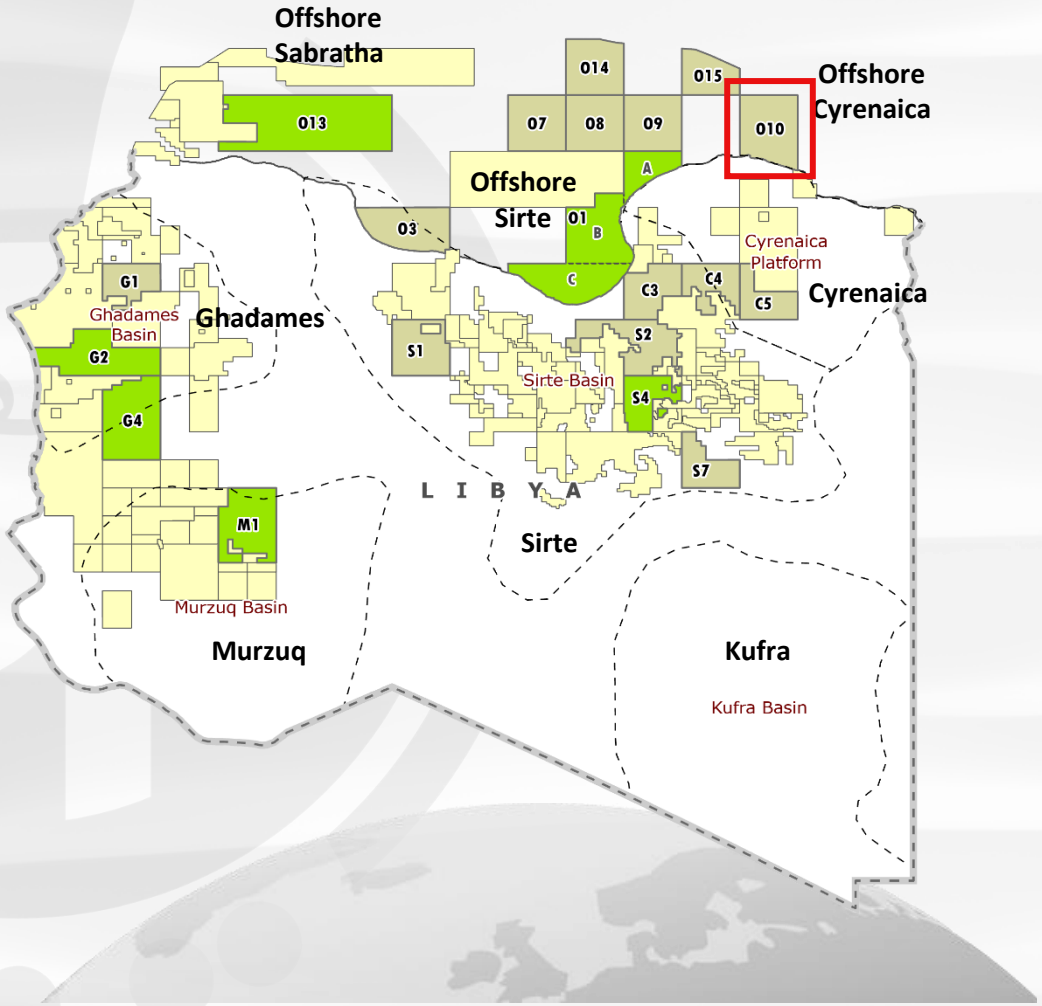
No discovery in the Area O9 However, in the south of the Area 24, 4 discoveries of significance have been made, proving the working petroleum system in the offshore area, particularly within the Late Cretaceous and Eocene sequences. The most prominent discovery was 2008 gas discovery A-54/1 well (Arous Al-Bahar), which tested 27 mmscf per day in Cenomanian carbonates. Current total in-place reserves estimates is reserves is over 406 MMboe.

AREAS 26(1,2,3,4), 42 (3,4) - OFFSHORE CYRENAICA

Offshore O10

Details

Fiscal Regime	PSA
Size	12,305.9 km²
Location	Offshore Cyrenaica
Water Depth (m)	1,000 m – 3,500 m
Database	• 2D Lines 13 • 2D Length 1,395 line km • 3D Survey None • Wells None



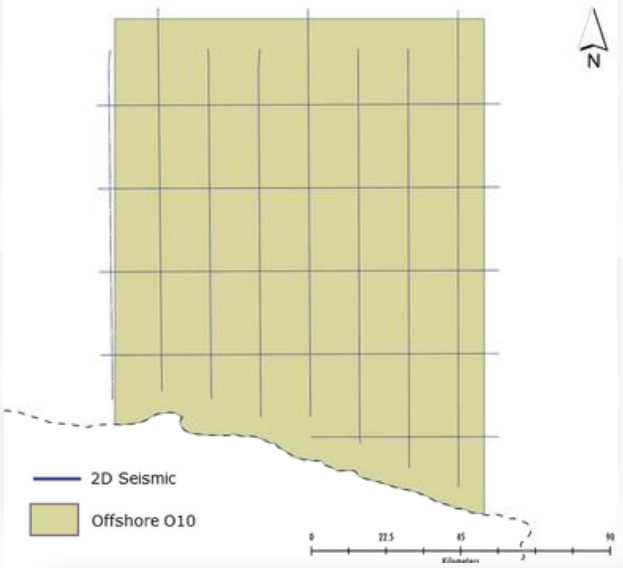
Exploration Opportunity

O10 - AREAS 26 (1,2,3,4), 42 (3,4)

Overview

Offshore Cyrenaica

AREA	# Of 2D Lines	2D Length "Km"	# Of 3D Survey	3D Survey "Km2"	# Of Wells
O10	13	1,395	0	0	0



Tectonic Framework

Geological Province: Cyrenaica Ridge Marmarica and Jabal Al Akhdar uplifts, which are sandwiched by Darnah and Marmarica troughs.

Prospectivity

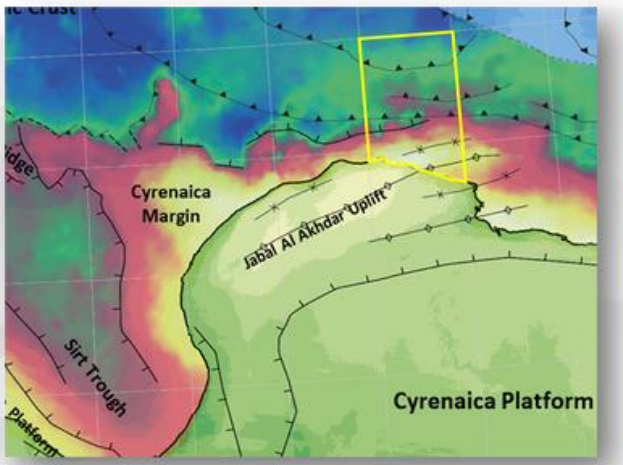
- 1 Prospect and +11 Leads
- Estimated In-Place >2.0 Bboe.

Discoveries

No discovery in the Area O10.

Petroleum Systems and Plays

1. Lower Silurian Tanezzuft Petroleum System
2. Lower Devonian Petroleum System
3. Early to Late Jurassic in Syn-rift Grabens Play
4. Upper Cretaceous / Early Tertiary Limestone Play
5. Lower Cretaceous Carbonate Play
6. Upper Jurassic to Early Cretaceous (Post-Rift) Carbonate Play
7. Triassic Syn-rift Sandstone Play

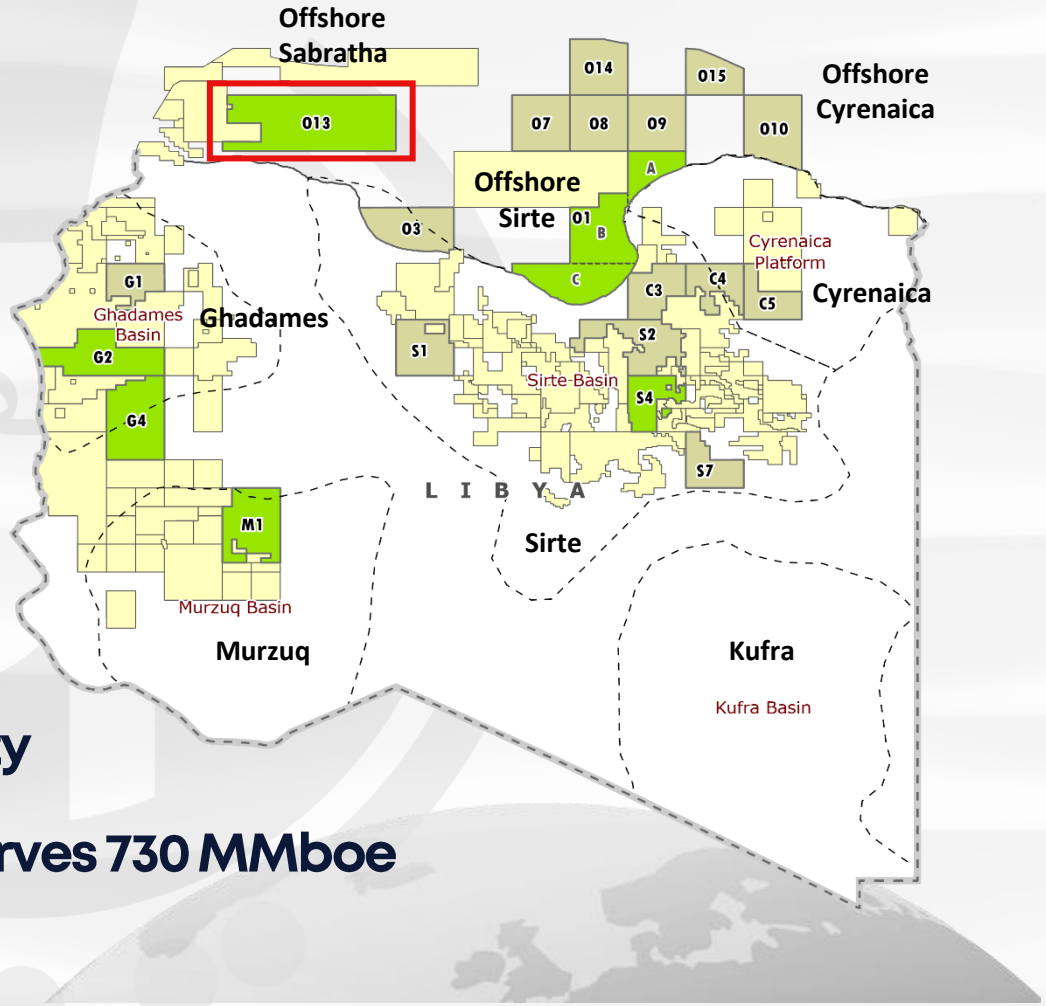


AREAS 17(1,2,3,4),18(1,2,3,4), 19(1,2,3,4) - OFFSHORE SABRATHA BASIN

Offshore O13

Details

Fiscal Regime	PSA
Size	28,133 km²
Location	Offshore Sabratha Basin (Greater Pelagian Basin)
Water Depth (m)	>100 m – 1,200 m
Database	• 2D Lines 71 • 2D Length 6,651 line km • 3D Survey 2 • 3D Survey 2,242 km² • Wells 14



Exploration and Development Opportunity

Three Oil & GAS Discoveries In-Place Reserves 730 MMboe

O13 - AREAS 17 (1,2,3,4),18 (1,2,3,4), 19 (1,2,3,4)

Overview

Offshore Sabratha Basin

Petroleum Systems and Plays

Two petroleum systems Eocene Bou Dabbous (El Gueria) and Cretaceous Bahloul are proven with the possibility of Jurassic petroleum systems. The Eocene and Cretaceous plays are proven in the area. The traps are mainly structural, related to salt movement and fault-bounded 4- to 3-way dip closures.

1. Eocene Bou Dabbous – El Gueria Petroleum System
2. Cretaceous Bahloul S)
3. Jurassic Forum Tataouine (Potential) PS
4. Eocene Metlaoui Gr., Reineche, Cherahil B Jdeir / Harsha / Samdun Play
5. Cretaceous Play (Douleb/Zebbag)

Tectonic Framework

Geological Province: Offshore Sabratha Basin (Greater Pelagian Basin).

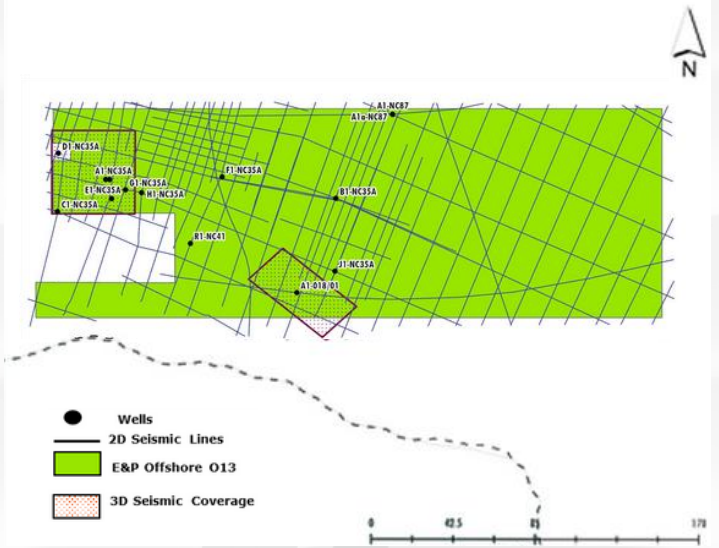
Prospectivity

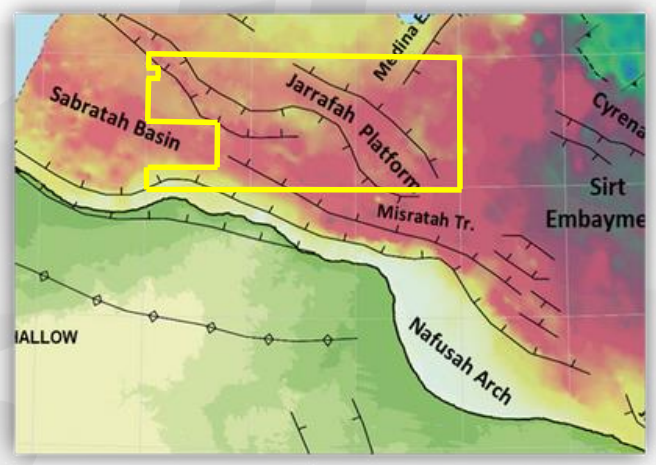
- +3 Prospects and +4 Leads
- Estimated In-Place >1.5 Bboe.

Discoveries

A total of 13 exploratory wells have been drilled in the Area O13, which resulted in three discoveries with a total of P50 in-place reserves of 730 MMboe (2P reserve). These discoveries are included in the area.
•C1-NC35A
•E1-NC35A
•G1-NC35A (In-Place Reserves 730 MMboe).

AREA	# Of 2D Lines	2D Length "Km"	# Of 3D Survey	3D Survey "Km2"	# Of Wells
O13	71	6,651	2	2,677	13



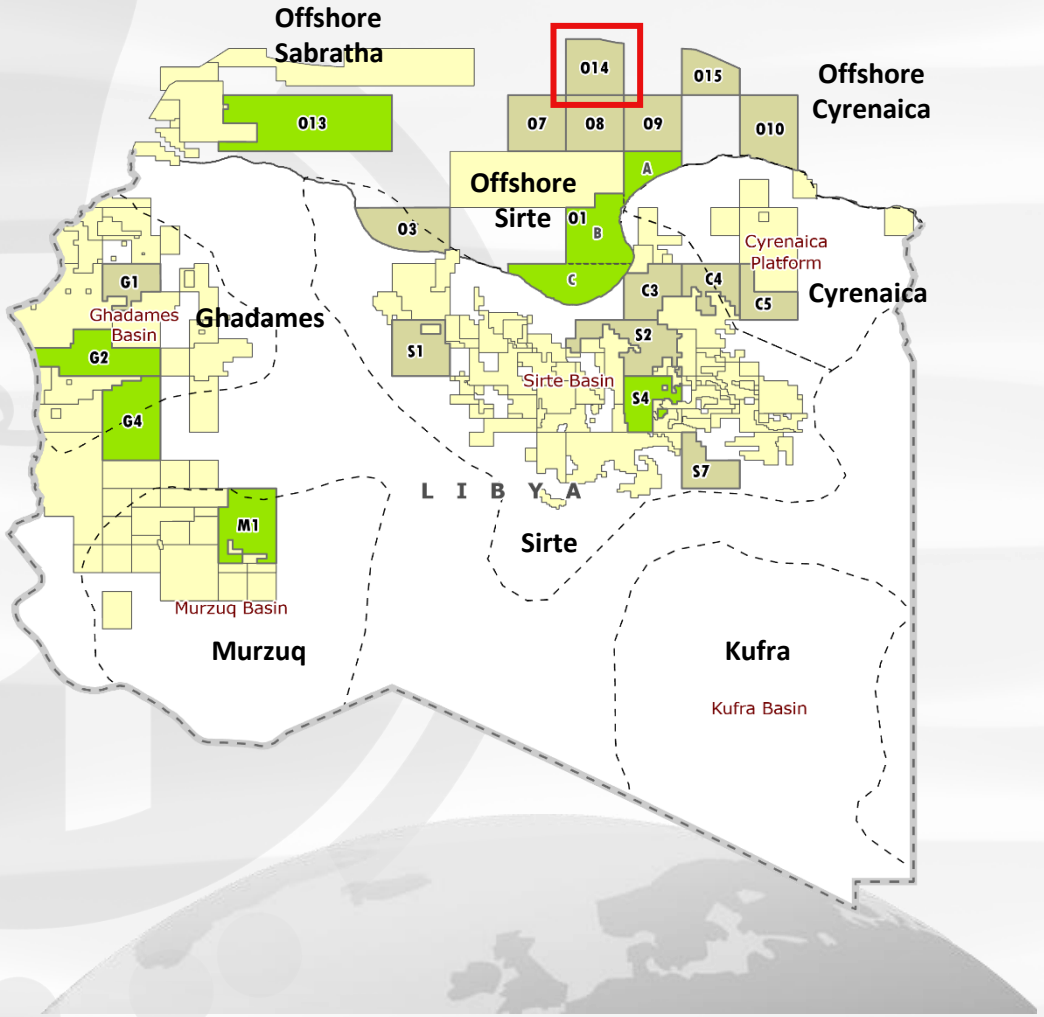


AREA 8 (1,2,3,4) - IONIAN ABYSSAL PLAIN

Offshore O14

Details

Fiscal Regime	PSA
Size	9,995.81 km²
Location	Ionian Abyssal Plain
Water Depth (m)	>2000 m
Database	• 2D Lines 14 • 2D Length 867 line km • 3D Survey None • Wells None



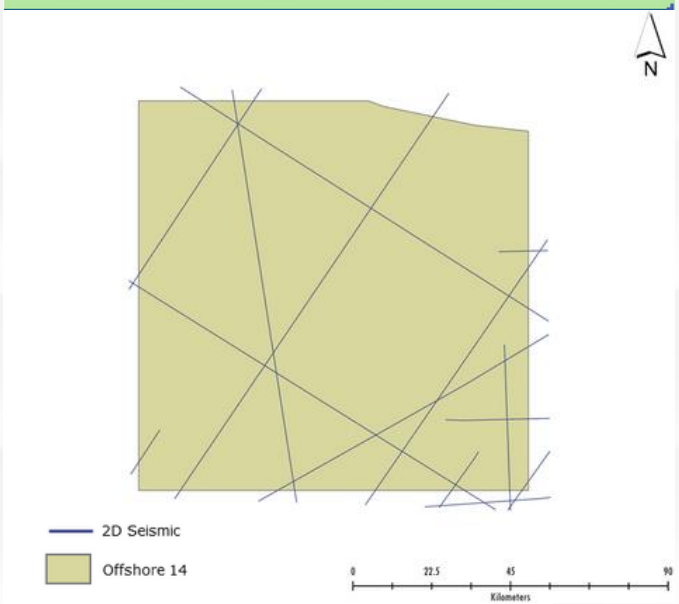
Exploration Opportunity

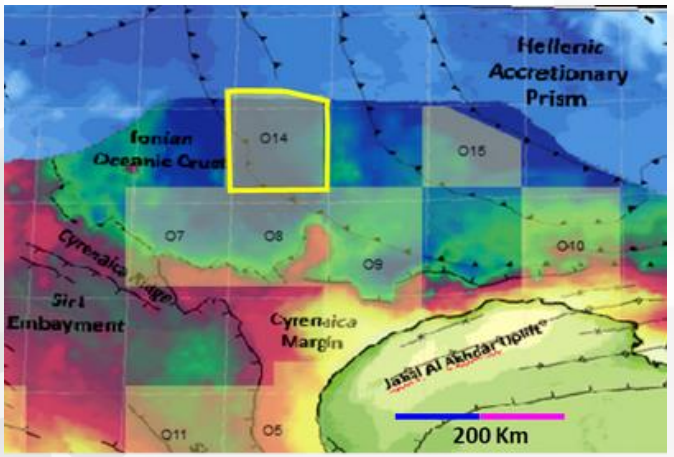
O14 - AREA 8 (1,2,3,4)

Overview

Ionian Abyssal Plain

AREA	# Of 2D Lines	2D Length "Km"	# Of 3D Survey	3D Survey "Km2"	# Of Wells
O14	14	867	0	0	0





Petroleum Systems and Plays

The area may comprise stacked Cretaceous-Tertiary clastics plays deposited in deep-water settings, and the source rocks are speculative and could be intraformational deepwater shales. In addition, biogenic gas play is expected. Both structural and stratigraphic traps are likely to exist.

1. Biogenic Petroleum System (Speculative)
2. Jurassic-Cretaceous Thermogenic Petroleum System (Potential)
3. Stacked biogenic and thermogenic potential plays involving Cretaceous and Tertiary sections

Tectonic Framework

Geological Province: Ionian Abyssal Plain.

Prospectivity

- +3 Leads – New Exploration Frontier
- Estimated In-Place >1.5 Bboe.

Discoveries

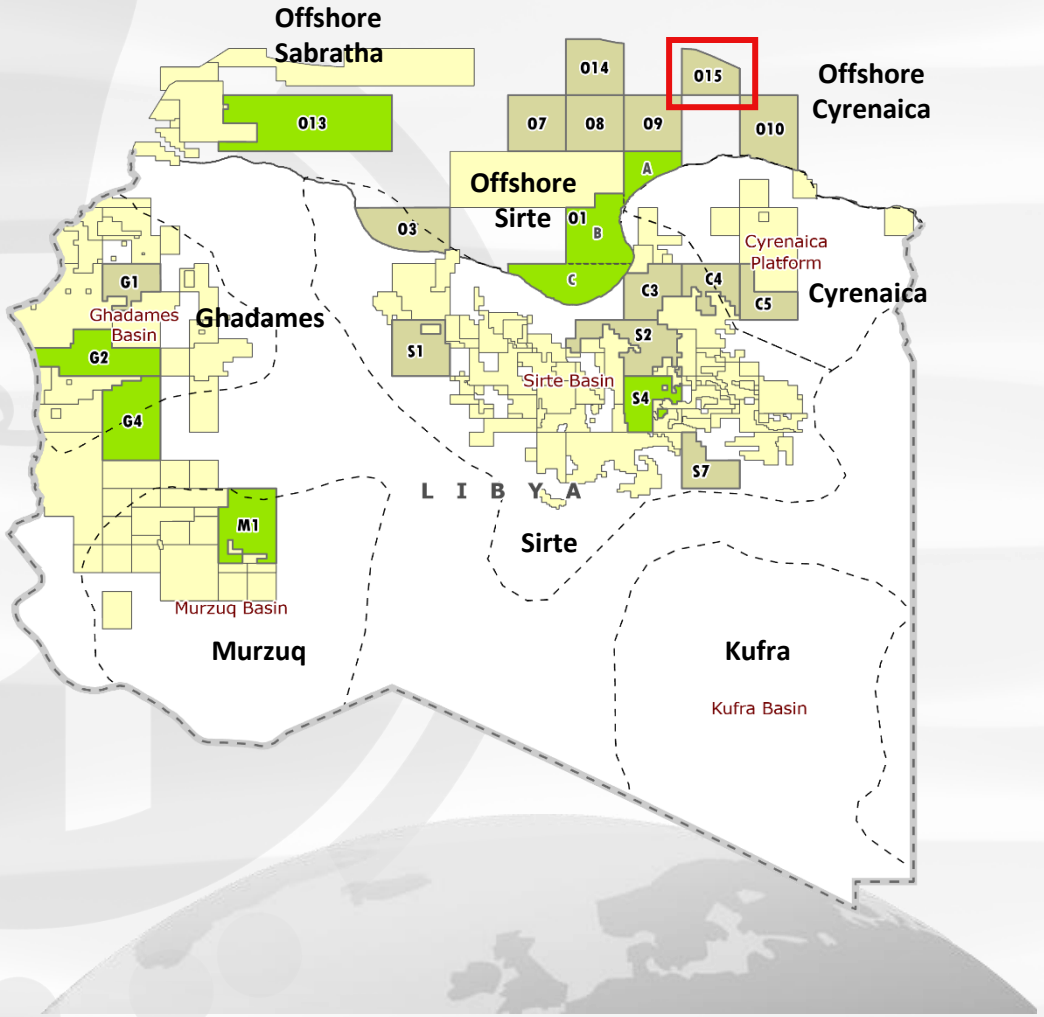
No discovery in the Area.

AREA 10 (1,2,3,4) - MEDITERRANEAN RIDGE

Offshore O15

Details

Fiscal Regime	PSA
Size	7,040.03 km²
Location	Mediterranean Ridge
Water Depth (m)	>2000 m
Database	• 2D Lines 6 • 2D Length 459 line km • 3D Survey None • Wells None



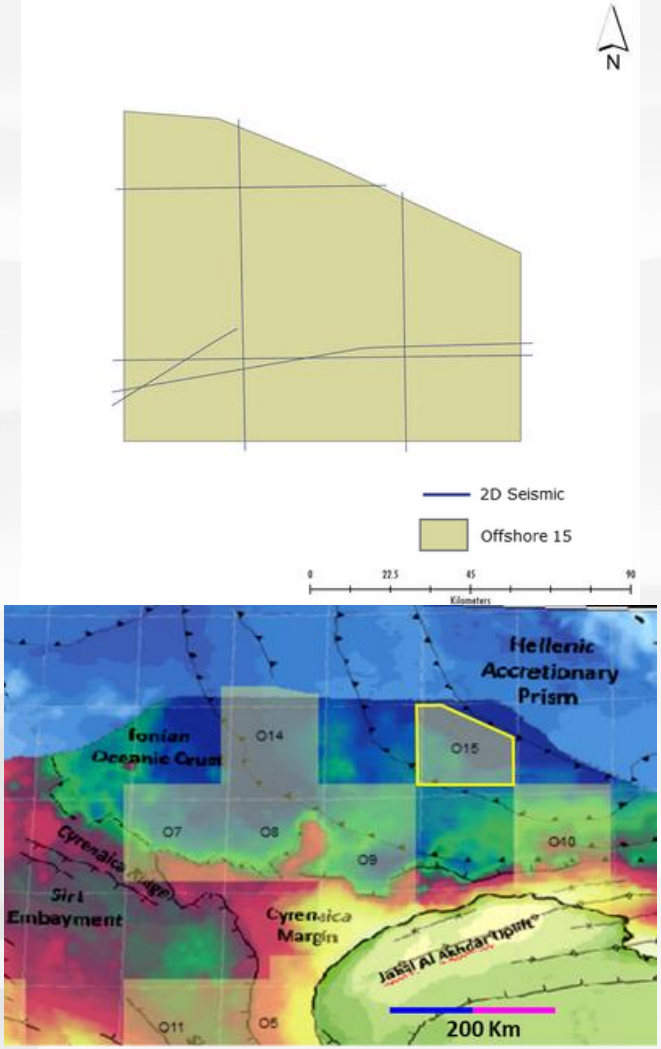
Exploration Opportunity

O15 - AREA 10 (1,2,3,4)

Overview

Mediterranean Ridge

AREA	# Of 2D Lines	2D Length "Km"	# Of 3D Survey	3D Survey "Km2"	# Of Wells
O15	6	459	0	0	0



Petroleum Systems and Plays

The area may comprise stacked Cretaceous-Tertiary clastics plays deposited in deep-water settings, and the source rocks are speculative and could be intraformational deepwater shales. In addition, biogenic gas play may be expected below the salt. Both structural and stratigraphic traps are likely to exist.

1. Biogenic Petroleum System (Speculative)
2. Jurassic-Cretaceous Thermogenic Petroleum System (Potential)
3. Stacked biogenic and thermogenic potential plays involving Cretaceous and Tertiary sections

Tectonic Framework

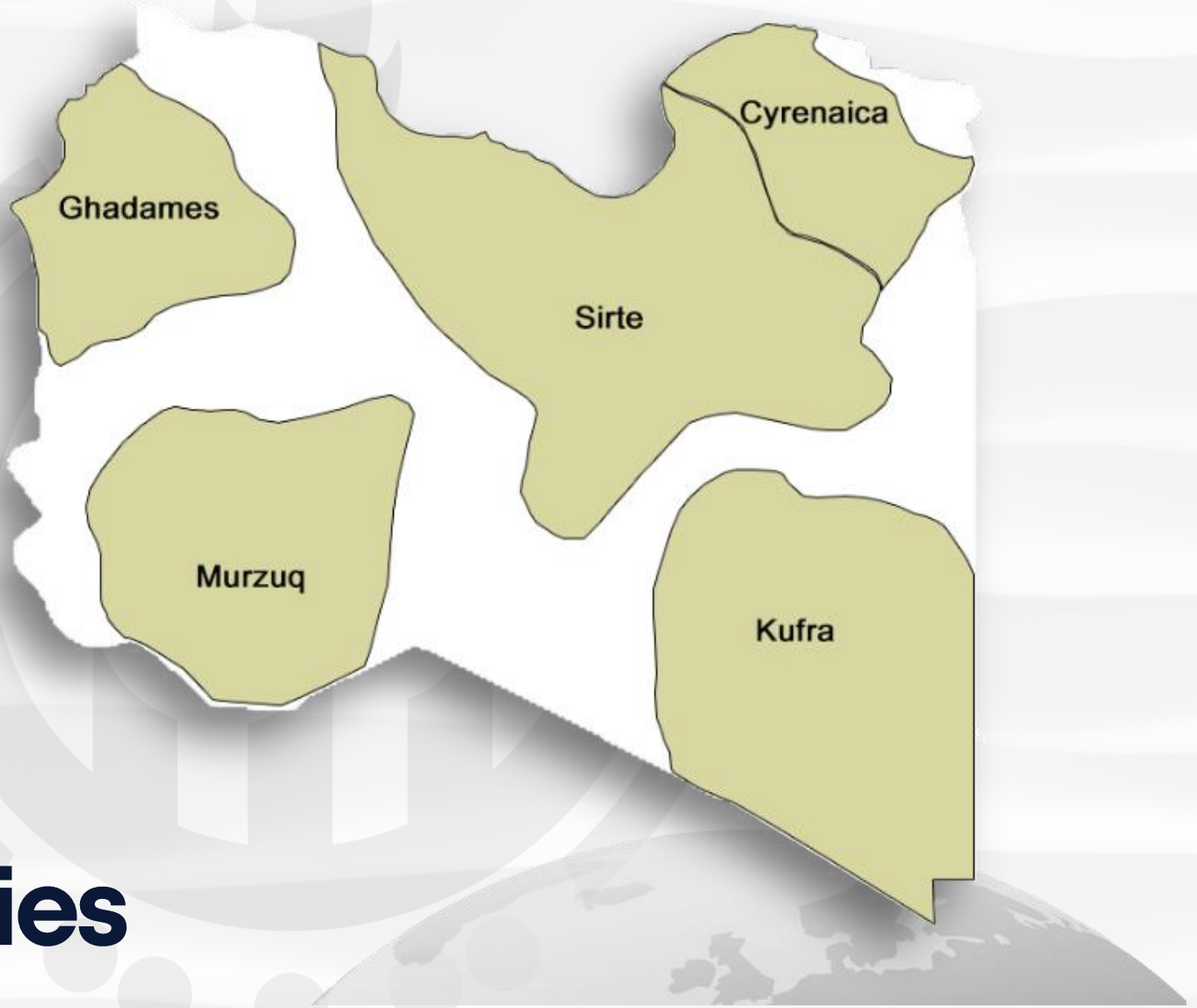
Geological Province: Mediterranean Ridge
.

Prospectivity

- +2 Leads – New Exploration Frontier
- Estimated In-Place <1 Bboe.

Discoveries

No discovery in the Area.



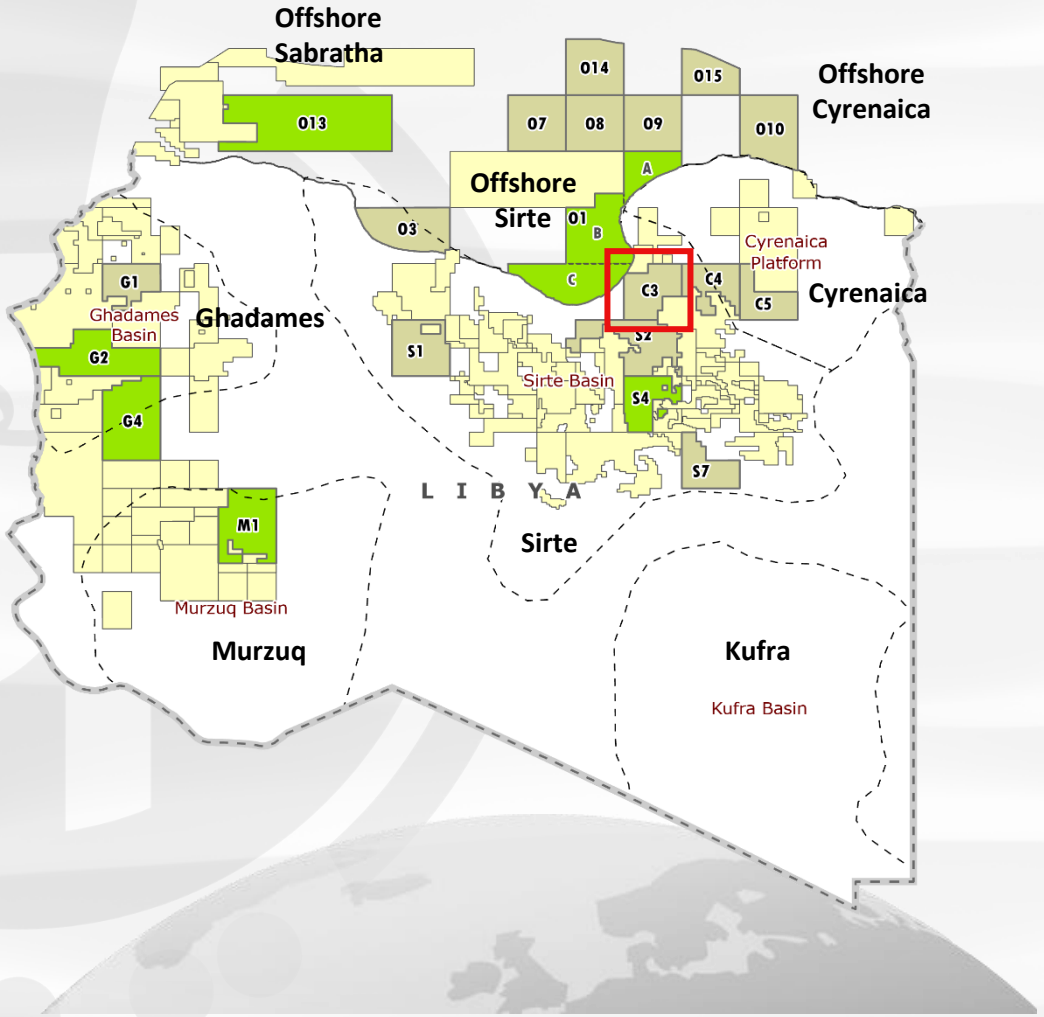
Onshore Opportunities

AREA 73 (1,2,3,4) - CYRENAICA PLATFORM

Onshore C3

Details

Fiscal Regime	PSA
Size	8,262 km²
Location	Cyrenaica Platform / Sirte Basin
Surface Elevation (m)	20m – 120 m
Database	• 2D Lines 128 • 2D Length 5,538 line km • 3D Survey 2 • 3D Survey 1,823 km² • Wells 15



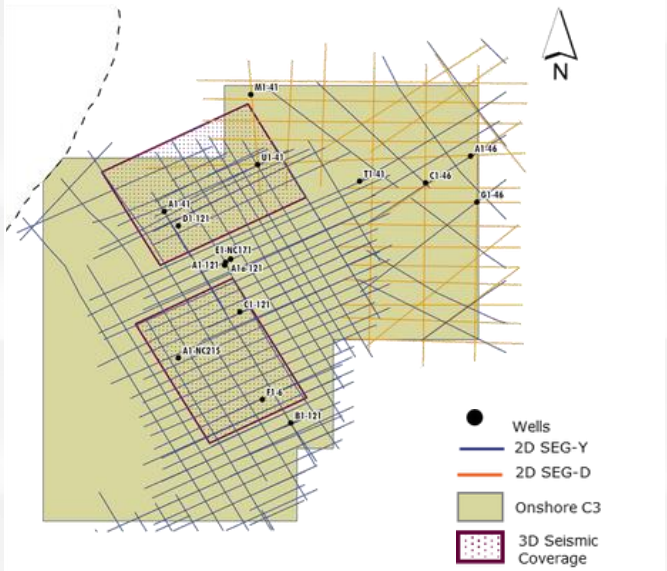
Exploration Opportunity

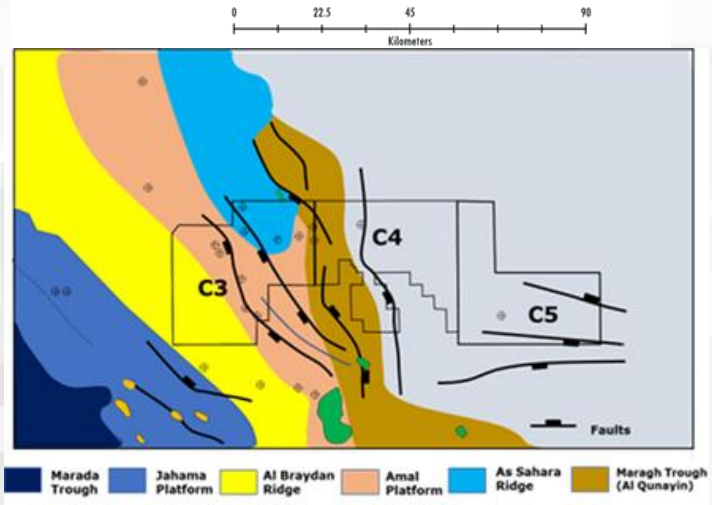
C3 - AREA 73 (1,2,3,4)

Overview

Cyrenaica Platform

AREA	# Of 2D Lines	2D Length "Km"	# Of 3D Survey	3D Survey "Km2"	# Of Wells
C3	128	5,538	2	1,823	15





Petroleum Systems and Plays

The source rocks are locally present, e.g., in H1-41 well, the TOC of Eocene carbonates varies 3.94 to 5.75% with HI 343 to 642 and S2 5.75-6.87 mg/g with Type II kerogen. The Santonian and Coniacian source rocks are also present and mature in the depression.

1. Early Eocene-Paleocene Petroleum System
2. Silurian Tanezzuft Petroleum System
3. Stacked Paleogene Carbonate Plays
4. Lower Cretaceous Nubian/ Bahi Clastics play
5. Devonian fluvial to marginal marine clastics play
6. Silurian sandstone fluvial to Shelfal play
7. Ordovician marginal marine sandstones play

Tectonic Framework

Geological Province: Cyrenaica Platform / Sirte Basin.

Prospectivity

- 1 Prospect and 11 Leads
- Estimated In-Place 0.52 Bboe.

Discoveries

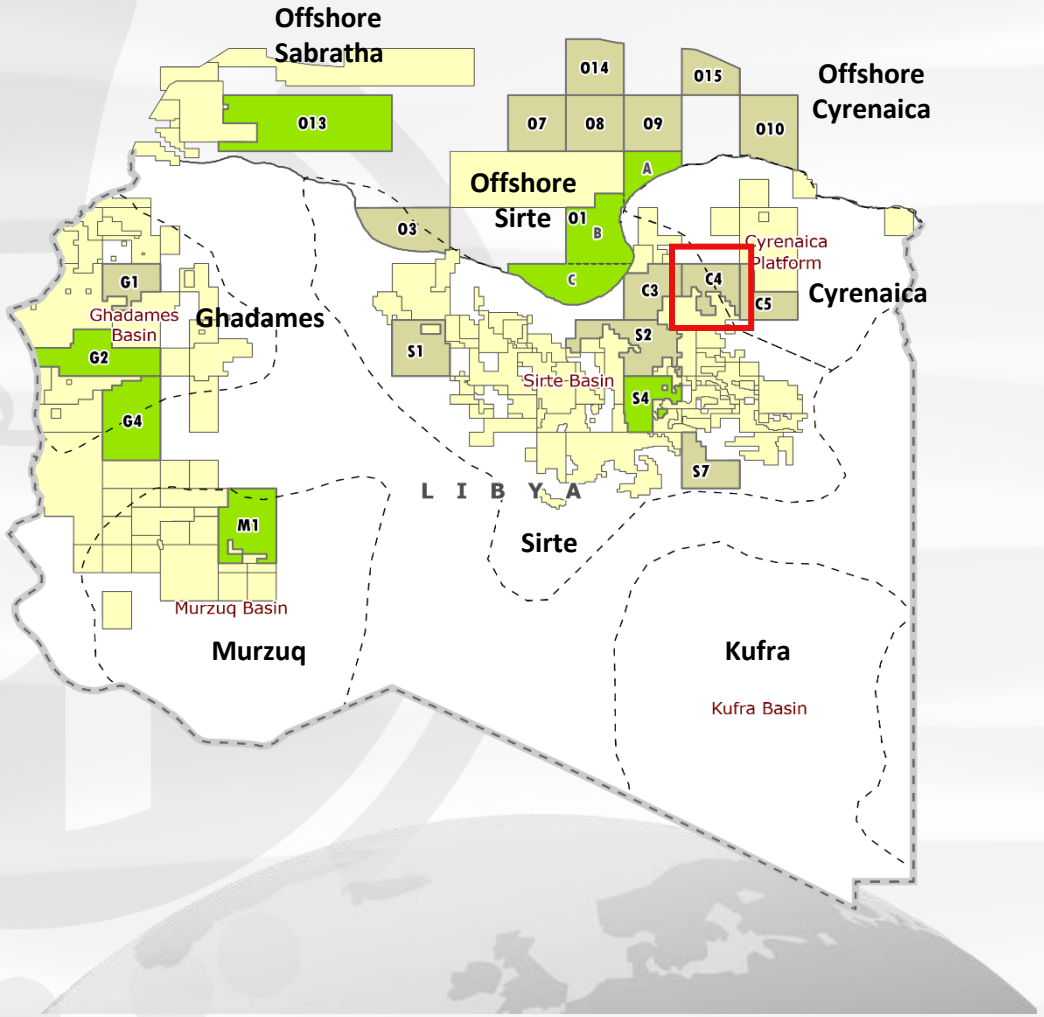
No discovery in the Area.

AREA 74 (1,2,3,4) - CYRENAICA PLATFORM

Onshore C4

Details

Fiscal Regime	PSA
Size	7,218.7 km²
Location	Southern Cyrenaica Platform
Surface Elevation (m)	20 m – 120 m
Database	• 2D Lines 133 • 2D Length 6,054 line km • 3D Survey None • Wells 2 (B1-46; A1-31)



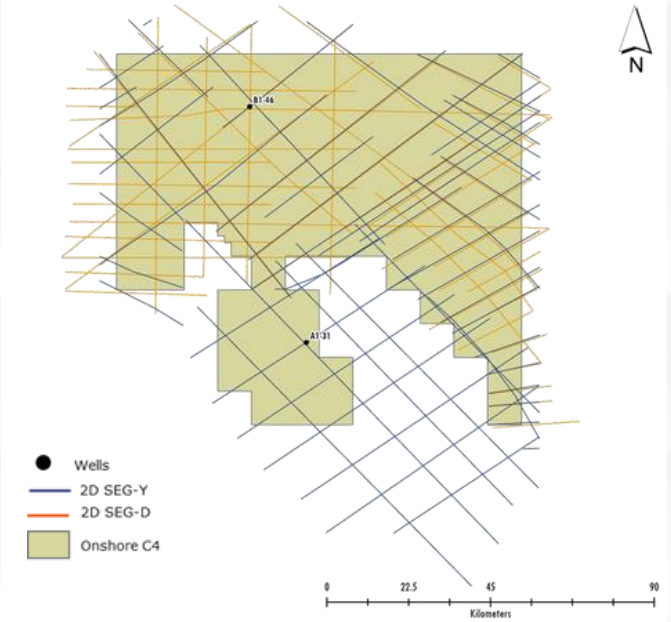
Exploration Opportunity

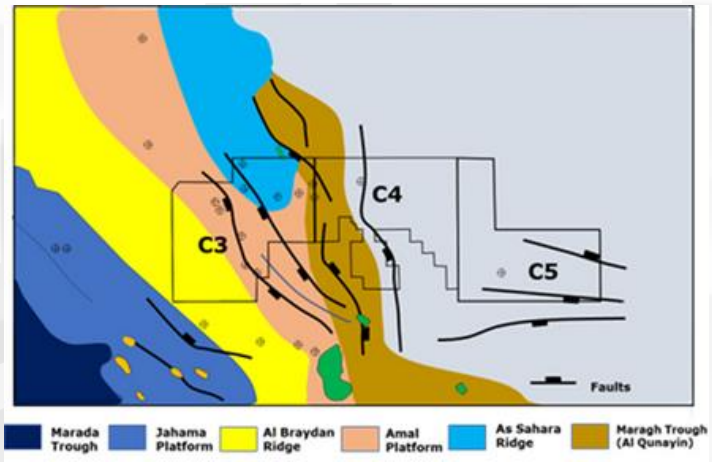
C4 - AREA 74 (1,2,3,4)

Overview

Cyrenaica Platform

AREA	# Of 2D Lines	2D Length "Km"	# Of 3D Survey	3D Survey "Km2"	# Of Wells
C4	133	6,054	0	0	2





Petroleum Systems and Plays

1. Early Eocene-Paleocene Carbonates Plays (Proven)
2. Silurian Tanezzuft PS - Proven
3. Late Cretaceous Mid Nubian PS (Potential)
4. Devonian-Carboniferous PS (Potential)
5. Ordovician Marginal Marine Sandstones Play
6. Silurian Sandstone Fluvial to Shelfal Play
7. Devonian Fluvial to Marginal Marine Clastics Play
8. Lower Cretaceous Nubian/ Bahir Clastics Play
9. Stacked Paleogene Carbonate Plays
10. Pre-Cambrian Fractured Basement Play

Tectonic Framework

Geological Province: Southern Cyrenaica Platform.

Prospectivity

- 1 Prospect and +3 Leads
- Estimated In-Place <0.2 Bboe.

Discoveries

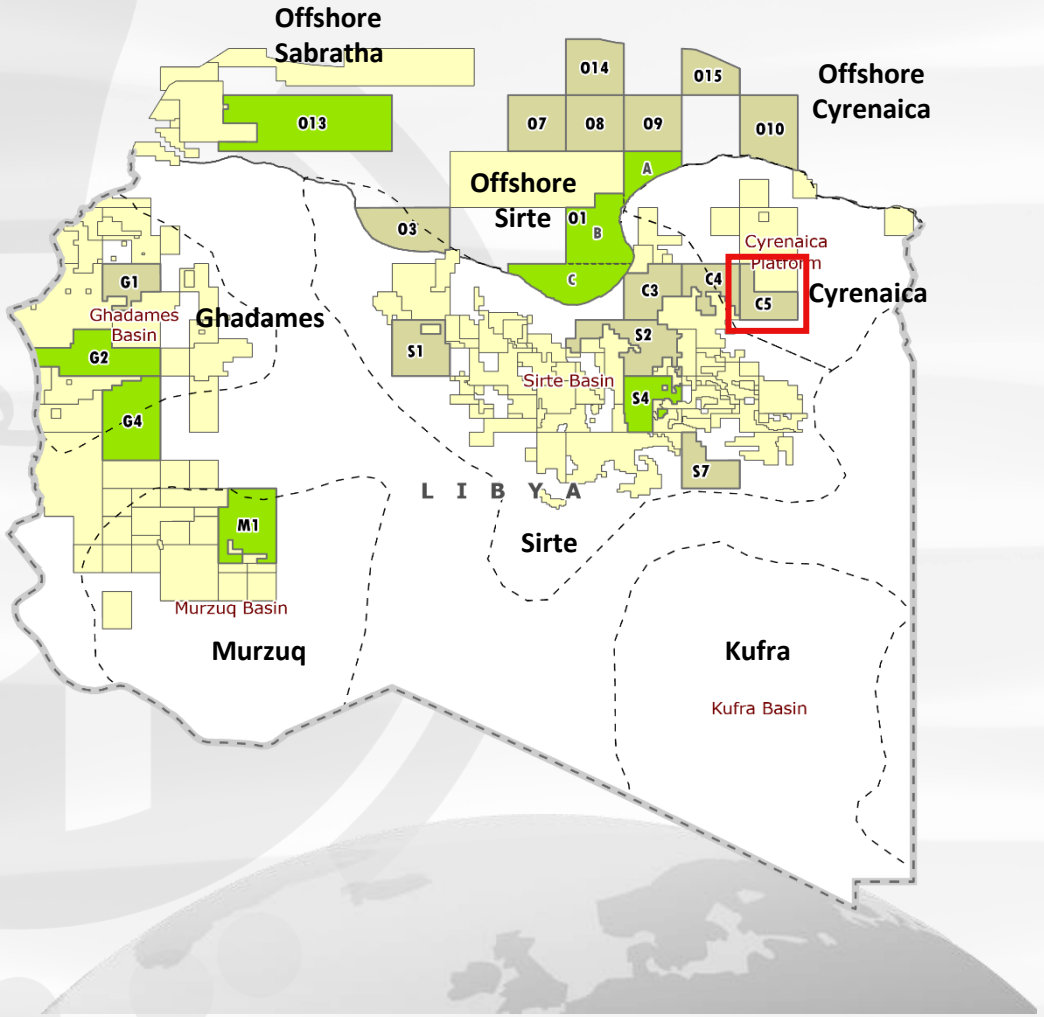
No discovery in the Area.

AREA 75 (1,2,3) - CYRENAICA PLATFORM

Onshore C5

Details

Fiscal Regime	PSA
Size	6,661.8 km²
Location	Southern Cyrenaica Platform
Surface Elevation (m)	60 m – 100 m
Database	• 2D Lines 99 • 2D Length 2,153 line km • 3D Survey None • Wells 1 (D1-31)



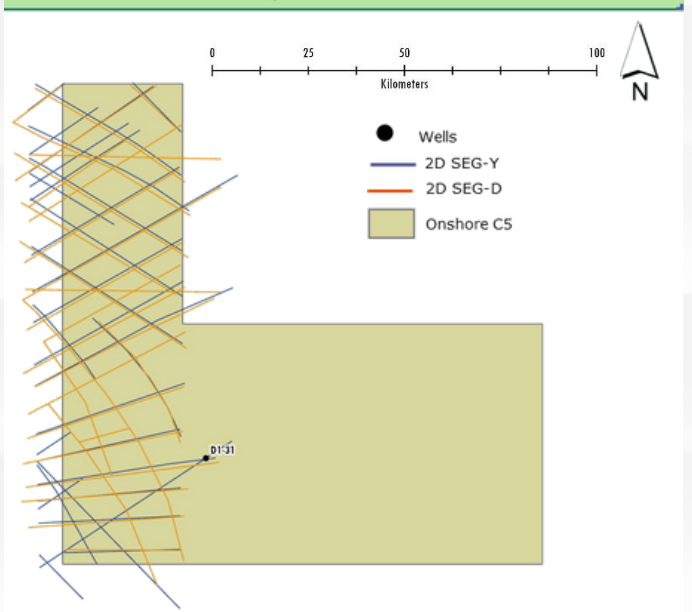
Exploration Opportunity

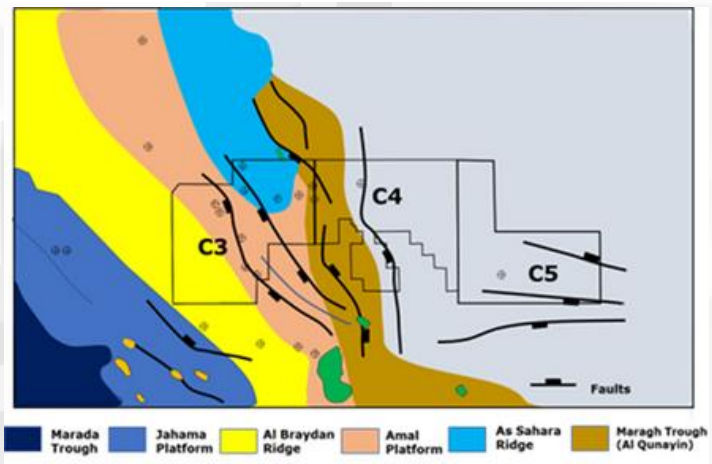
C5 - AREA 75 (1,2,3)

Overview

Cyrenaica Platform

AREA	# Of 2D Lines	2D Length "Km"	# Of 3D Survey	3D Survey "Km2"	# Of Wells
C5	99	2,153	0	0	1





Petroleum Systems and Plays

1. Composite Devonian - Silurian
2. Lower Permian Bir el Gerrarli Clastics and Carbonate Play
3. Upper Carboniferous Tengder Clastics Play
4. Lower Carboniferous Hamim Clastics and Carbonate Play
5. Late Devonian Ash Shaqiq Clastics Play
6. Middle Devonian Ghirrid Play Potential are
7. Lower Ordovician Maqar Clastics Play
8. Cambro-Ordovician Clastics Play

Tectonic Framework

Geological Province: Southern Cyrenaica Platform.

Prospectivity

- 1 Prospect and +3 Leads
- Estimated In-Place <0.2 Bboe.

Discoveries

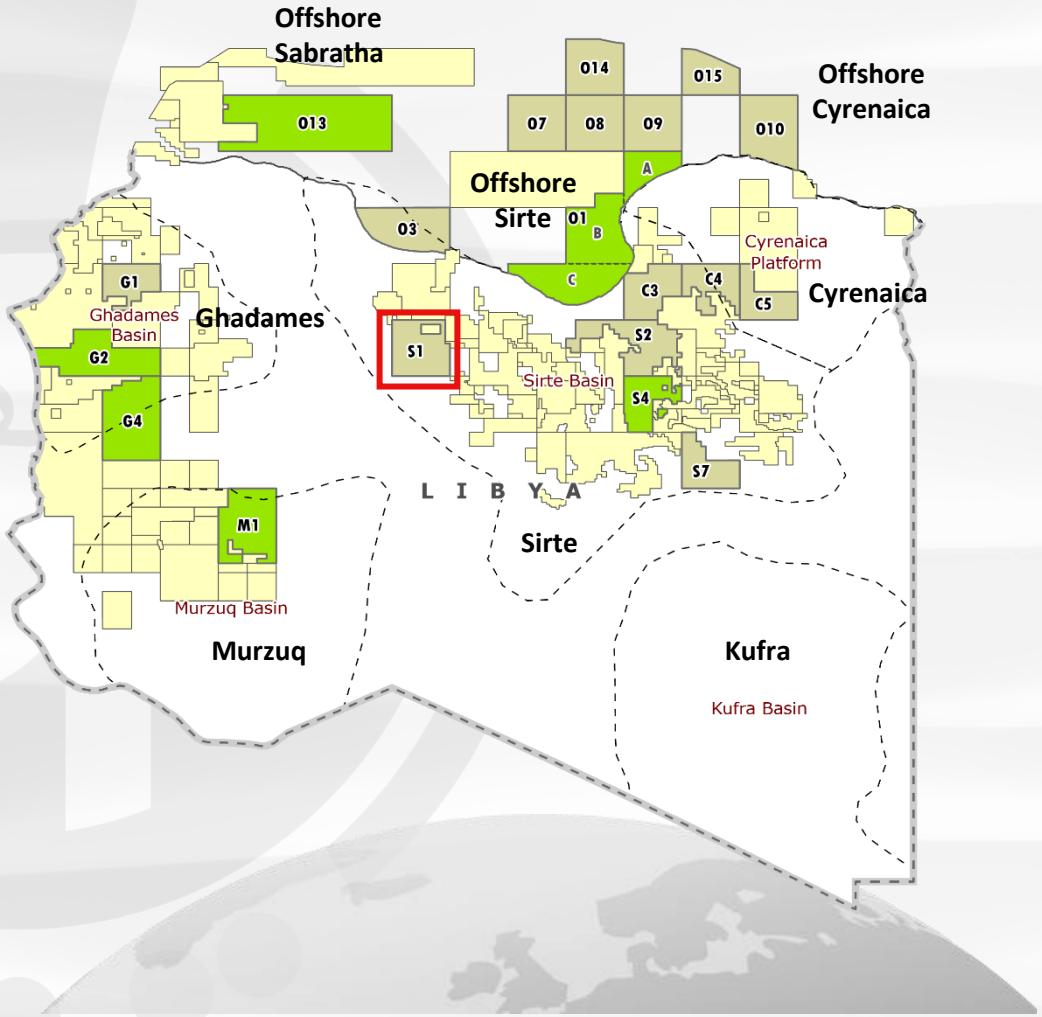
No discovery in the Area.

AREA 86 (1,2,3,4) – SIRTE BASIN

Onshore S1

Details

Fiscal Regime	PSA
Size	9,781 km²
Location	Waddan Platform; Hun Graben
Surface Elevation (m)	250 m – 375 m
Database	• 2D Lines 100 • 2D Length 2,266 line km • 3D Survey None • Wells 11



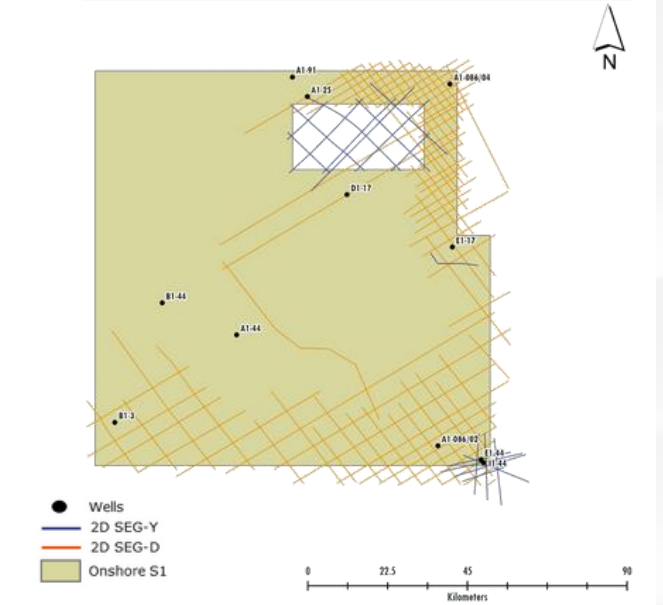
Exploration Opportunity

S1 - AREA 86 (1,2,3,4)

Overview

Sirte Basin

AREA	# Of 2D Lines	2D Length "Km"	# Of 3D Survey	3D Survey "Km2"	# Of Wells
S1	100	2266	0	0	11



Petroleum Systems and Plays

1. Upper Campanian Sirte Shale Proven
2. Silurian Tanezzuft Hot Shale Well A1-86/2 90' of hot shale – Gross Thickness 790 feet
3. L. Eocene Gir Fm. Hon Dolomite Play
4. Early Eocene Dolomite Play (Facha Member)
5. Late Paleocene Harash/Zelten Play
6. Maastrichtian Kalash Lst Play
7. Cenomanian Lidam Dolomite
8. Paleocene Upper Satal /Hagfa Carbonate Play
9. Late Cretaceous Argub Sst Play
10. Late Cretaceous (Turonian) Limestone Play
11. Cretaceous Bahi Sst Play
12. Lower Paleozoic Gargaf Quarzitic Fractured Play

Tectonic Framework

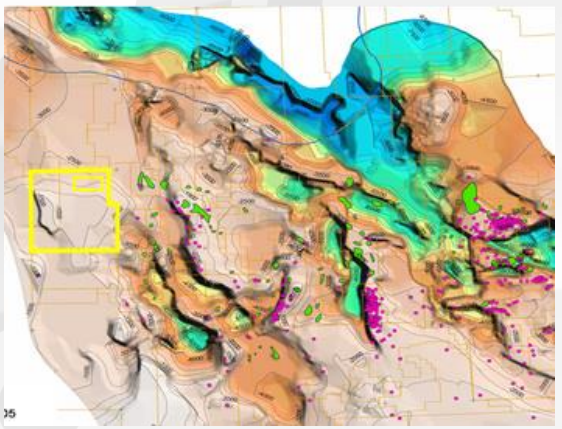
Geological Province: Waddan Platform; Hun Graben.

Prospectivity

- 1 Prospect and 12 Leads
- Estimated In-Place <0.5 Bboe.

Discoveries

No discovery in the Area S1
Though wells Oil Shows in Gir, Dahra, and Kalash/Sirte Fms.

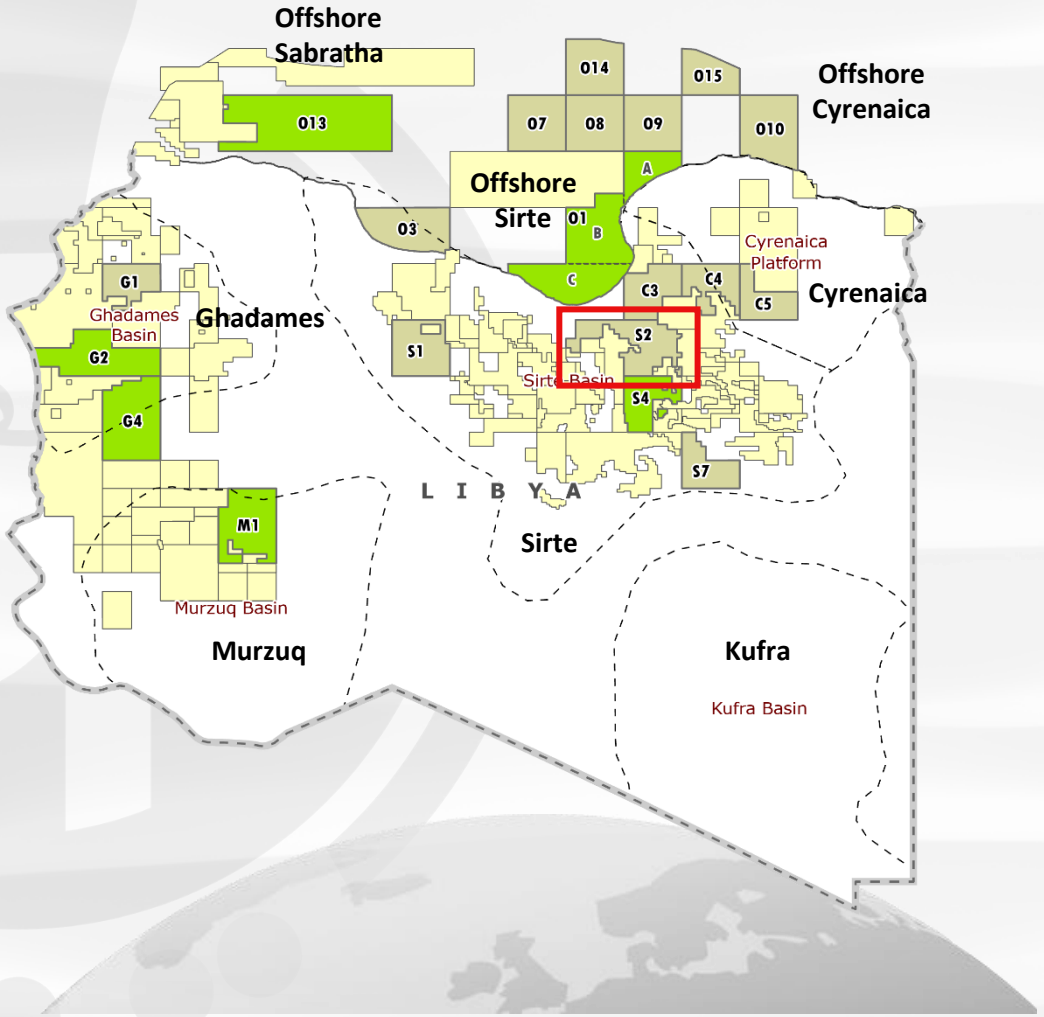


AREAS 89 (1,2,3,4), 90 (1,2,3,4) – SIRTE BASIN

Onshore S2

Details

Fiscal Regime	PSA
Size	11,336 km²
Location	Ajdabia Trough, Zelten Platform and Marada Trough
Surface Elevation (m)	250 m – 375 m Desert
Database	• 2D Lines 375 • 2D Length 10,416 line km • 3D Survey 4 • 3D Survey 10,028 km² • Wells 51



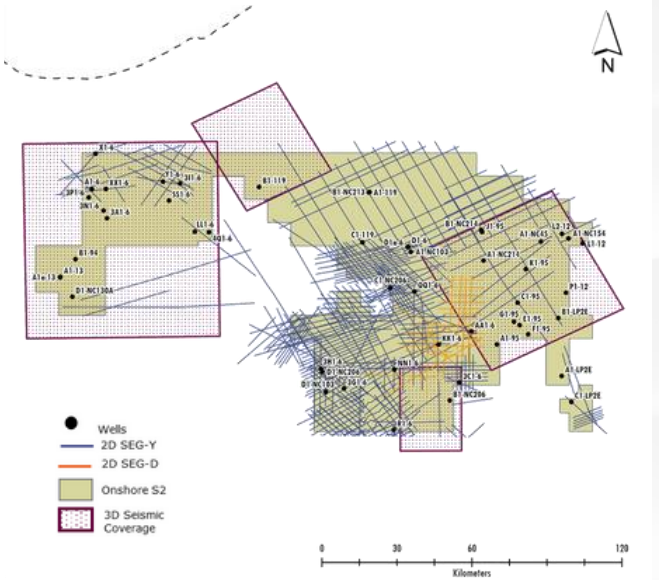
Exploration Opportunity

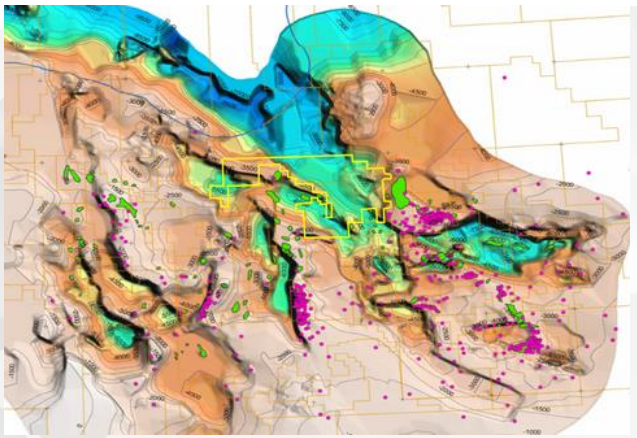
S2 – AREAS 89 (1,2,3,4), 90 (1,2,3,4)

Overview

Sirte Basin

AREA	# Of 2D Lines	2D Length "Km"	# Of 3D Survey	3D Survey "Km2"	# Of Wells
S2	375	10,416	4	10,028	51





Petroleum Systems and Plays

1. Upper Campanian Sirte Shale Proven
2. Lower Cretaceous Middle Nubian Shale Proven
3. Eocene Gir and Gialo Plays
4. Paleocene Zelten Carbonate Play
5. Upper Cretaceous Kalash Carbonate Play
6. Upper Cretaceous Waha Carbonate Play
7. Upper Cretaceous Sirte/Rachmat Clastics Play (Potential)
8. Cenomanian Lidam / Argub Dolomite Play (Potential)
9. Cenomanian Bahi Sandstone Play
10. Lower Cretaceous Nubian Sst Play
11. Triassic Sandstone Play (Potential)
12. Lower Paleozoic Gargaf Quarzitic Play (Combined Fractured)

Tectonic Framework

Geological Province: Ajedabia Trough, Zelten Platform and Marada Trough.

Prospectivity

- 1 Prospect and 12 Leads
- Estimated In-Place <0.5 Bboe.

Discoveries

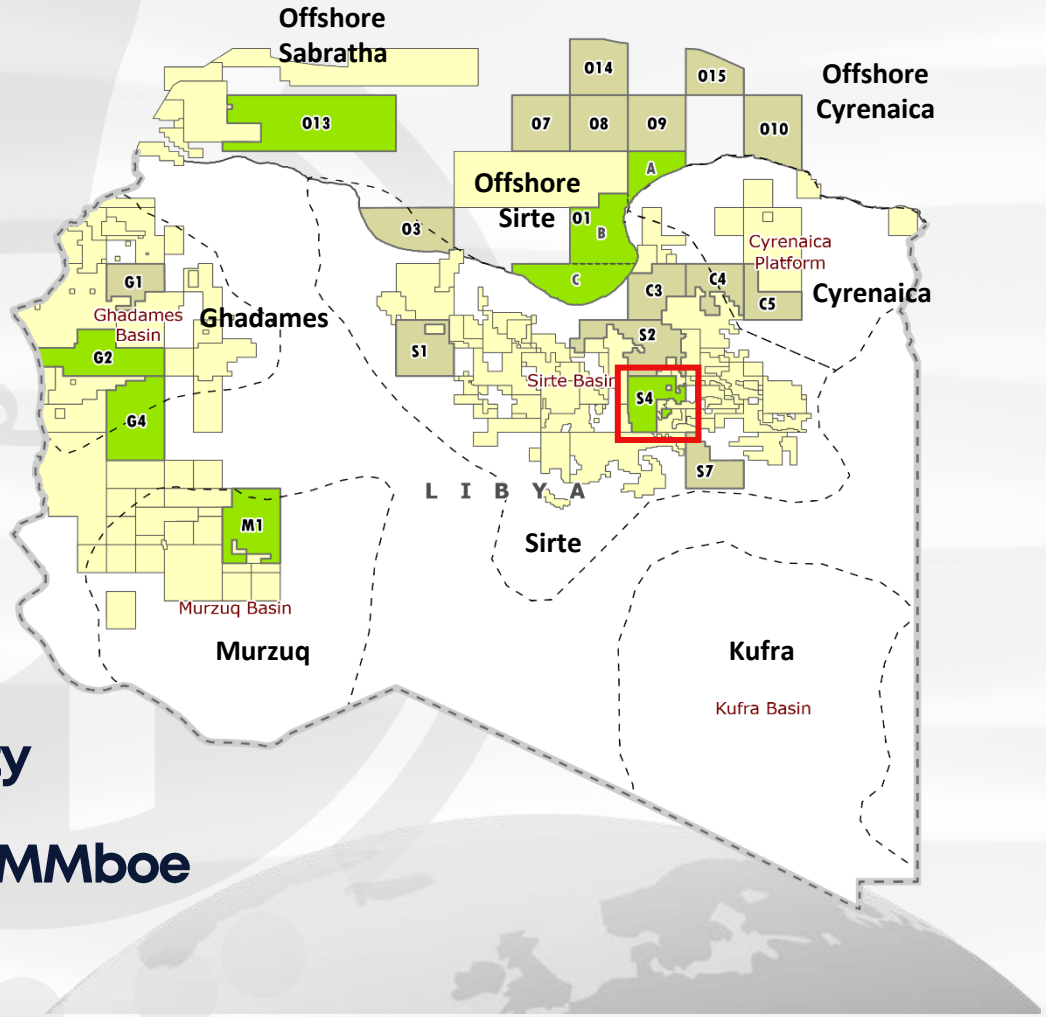
The area is surrounded by discoveries.

AREA 106 (1,2,3,4) - SIRTE BASIN

Onshore S4

Details

Fiscal Regime	PSA
Size	7,437 km²
Location	Ajedabiya Trough and Zelten Platform and associated toughs and highs
Surface Elevation (m)	50 m-320 m
Database	• 2D Lines 277 • 2D Length 6,710 line km • 3D Survey 1 • 3D Survey 165 km² • Wells 64



Exploration and Development Opportunity

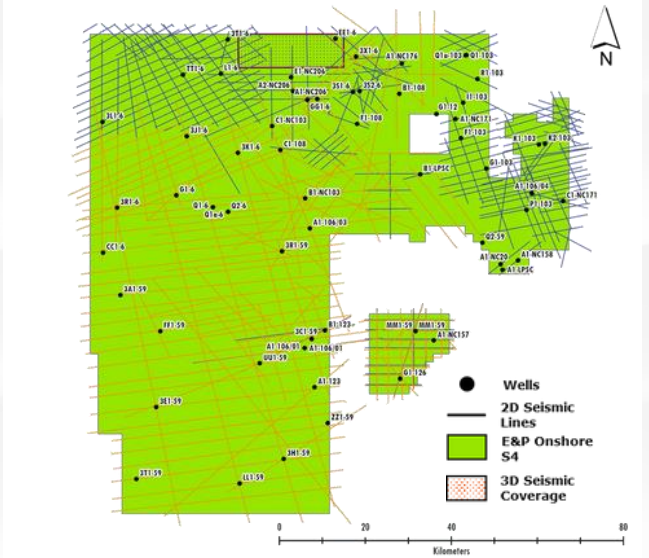
One Gas Discovery In-Place Reserves 100 MMboe

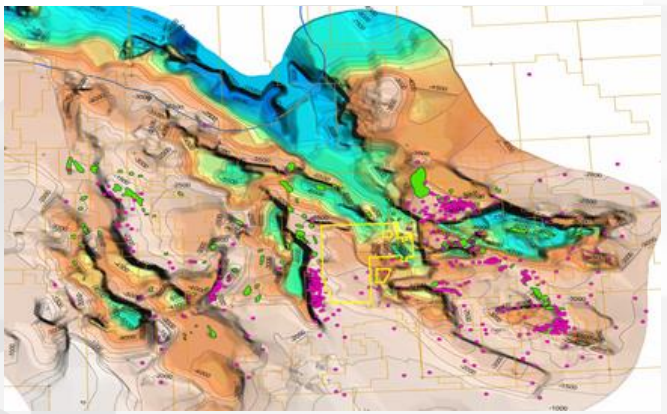
S4 - AREA 106 (1,2,3,4)

Overview

Sirte Basin

AREA	# Of 2D Lines	2D Length "Km"	# Of 3D Survey	3D Survey "Km2"	# Of Wells
S4	277	6,710	1	165	64





Petroleum Systems and Plays

1. Upper Campanian Sirte Shale Proven
2. Lower Cretaceous Middle Nubian Shale Proven
3. Eocene Gir and Gialo Plays
4. Paleocene Zelten Carbonate Play
5. Upper Cretaceous Kalash Carbonate Play
6. Upper Cretaceous Waha Carbonate Play
7. Upper Cretaceous Sirte/Rachmat Clastics Play (Potential)
8. Cenomanian Lidam / Argub Dolomite Play (Potential)
9. Cenomanian Bahi Sandstone Play
10. Lower Cretaceous Nubian Sst Play
11. Triassic Sandstone Play (Potential)
12. Lower Paleozoic Gargaf Quarzitic Play (Combined Fractured Play

Tectonic Framework

Geological Province: Ajedabiya Trough and Zelten Platform and associated toughs and highs.

Prospectivity

- +7 Leads
- Estimated In-Place <0.3 Bboe.

Discoveries

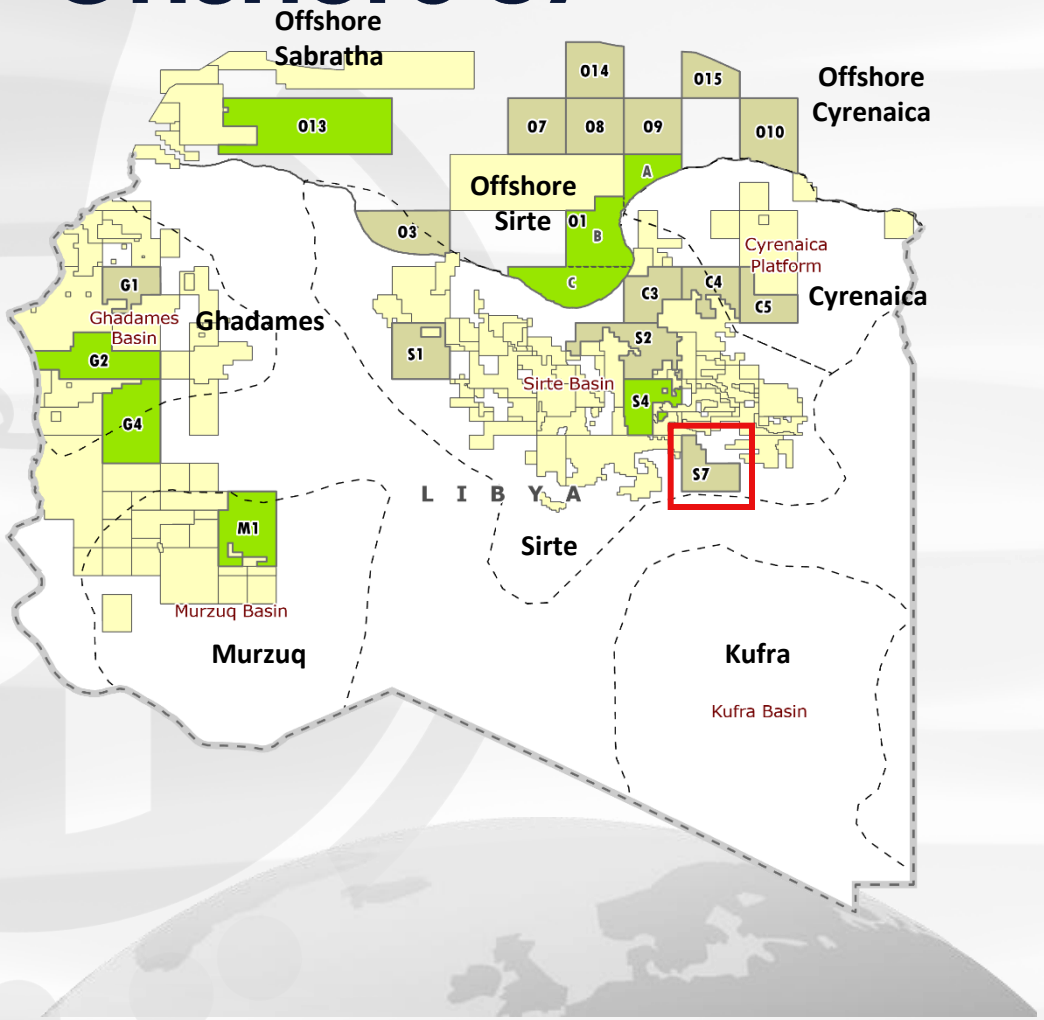
1 Gas Discovery, 100 MMboe (2P reserve). Surrounded by major oil discoveries.

AREA 123 (1,2,3,4) SIRTE BASIN

Onshore S7

Details

Fiscal Regime	PSA
Size	7,454.58 km²
Location	Southern Sarir Trough / High
Surface Elevation (m)	50 m – 320 m
Database	• 2D Lines 88 • 2D Length 3,372 line km • 3D Survey None • Wells 13



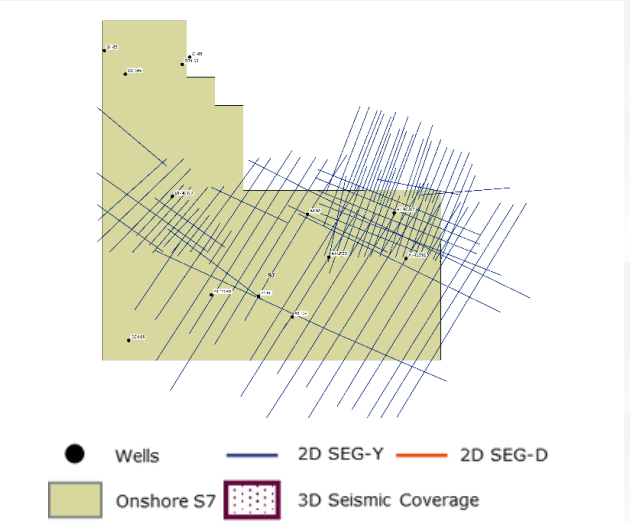
Exploration Opportunity

S7 – AREA 123(1,2,3,4)

Overview

Sirte Basin

AREA	# Of 2D Lines	2D Length "Km"	# Of 3D Survey	3D Survey "Km2"	# Of Wells
S7	88	3372	0	0	13



Petroleum Systems and Plays

1. Upper Campanian Sirte Shale PS Proven
2. Lower Cretaceous Middle Nubian Shale PS Proven
3. Eocene Gir and Gialo Play
4. Paleocene Zelten Carbonate Play
5. Upper Cretaceous Kalash Carbonate Play
6. Upper Cretaceous Waha Carbonate Play
7. Upper Cretaceous Sirte/Rachmat Clastics Play (Potential)
8. Cenomanian Lidam / Argub Dolomite Play (Potential)
9. Cenomanian Bahi Sandstone Play
10. Lower Cretaceous Nubian Sst Play
11. Triassic Sandstone Play (Potential)

Lower Paleozoic Gargaf Quarzitic Play (Combined Fractured)

Tectonic Framework

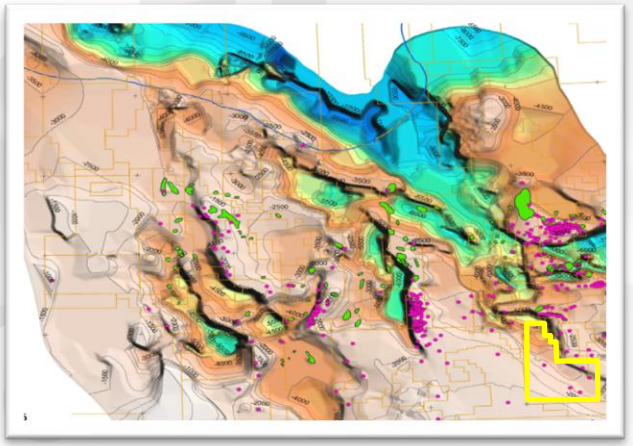
Geological Province: Sothern Sarir Trough / High.

Prospectivity

- 1 Prospect and 3 Leads
- Estimated In-Place <0.3 Bboe.

Discoveries

The area is surrounded by discoveries.

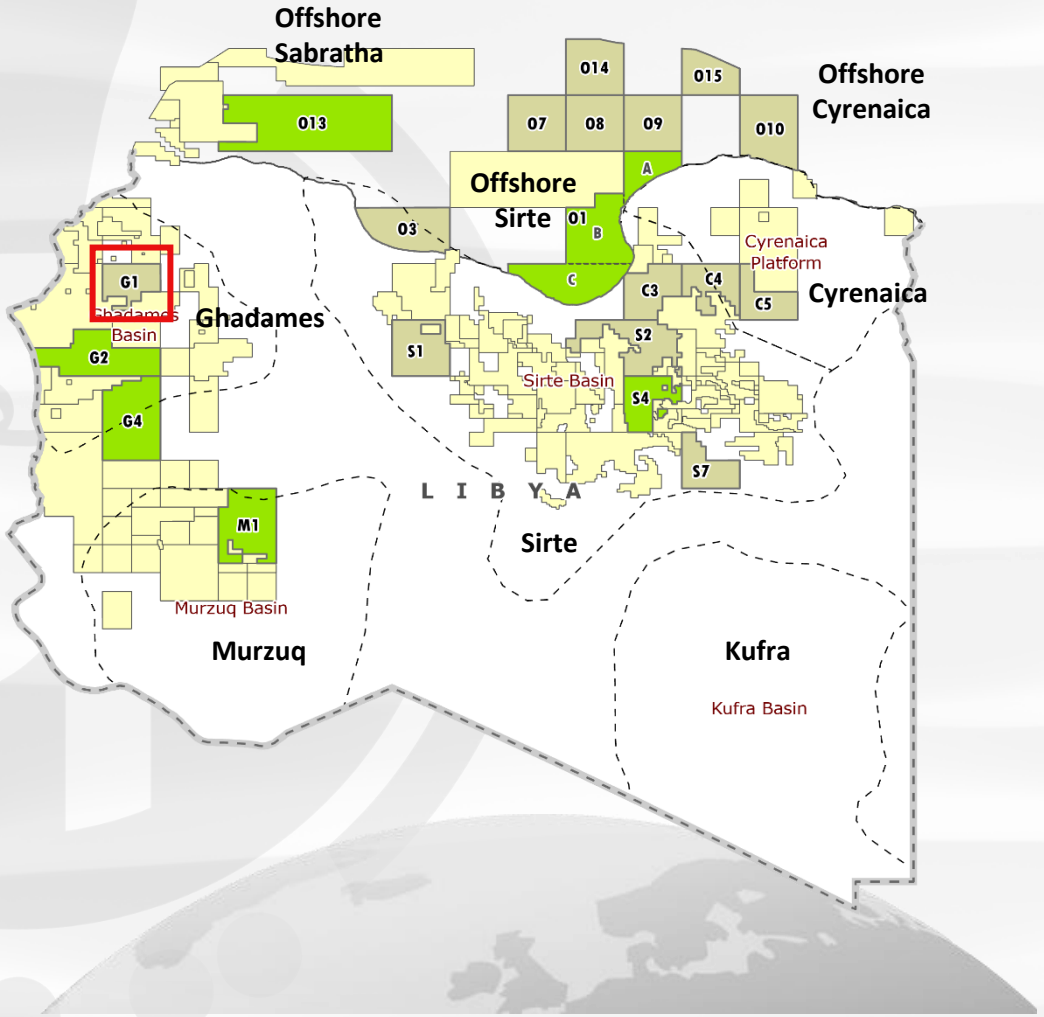


AREA 64 (1,2,3,4) – GHADAMES BASIN

Onshore G1

Details

Fiscal Regime	PSA
Size	6,576.5 km²
Location	Central Ghadames Basin
Surface Elevation (m)	650 m – 700 m Desert
Database	• 2D Lines 124 • 2D Length 3,348 line km • 3D Survey 1 • 3D Survey 4,540 km² • Wells 10



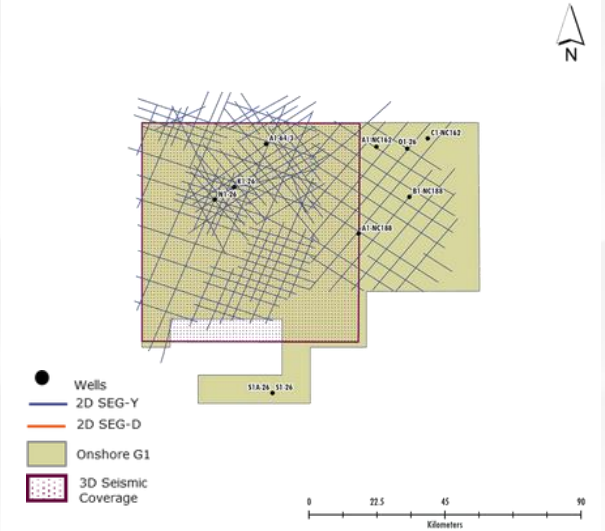
Exploration Opportunity

G1 - AREA 64 (1,2,3,4)

Overview

Ghadames Basin

AREA	# Of 2D Lines	2D Length "Km"	# Of 3D Survey	3D Survey "Km2"	# Of Wells
G1	124	3,348	1	4,540	10



Petroleum Systems and Plays

1. Silurian Tanezzuft-Acacus System; oil prone Type II marine kerogen - Proven
2. Devonian-Francian anoxic radioactive shales oil and gas prone Type II TOC up to 15%; HI up to 500 mg/g TOC - Proven
3. Composite Devonian-Carboniferous-Silurian Tanezzuft- Tadrart /Acacus System
4. Triassic Sandstone Play
5. Lower Devonian-Carboniferous Tahara and M'Rar Shelfal Clastic Play
6. Lower-Middle Devonian Shelfal Clastics Play
7. Upper Silurian Shallow Marine Acacus Clastic Play
8. Ordovician Qarqaf Gp. Clastics Play

Tectonic Framework

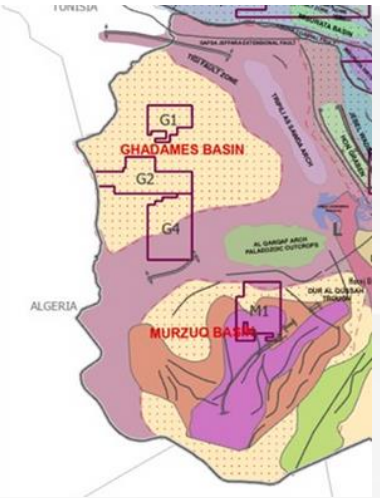
Geological Province: Central Ghadames Basin.

Prospectivity

- +30 Leads
- Estimated In-Place >1.0 Bboe.

Discoveries

At least 12 Oil and Gas fields have been discovered in the vicinity of the Onshore G1 between 1995 to 2006.

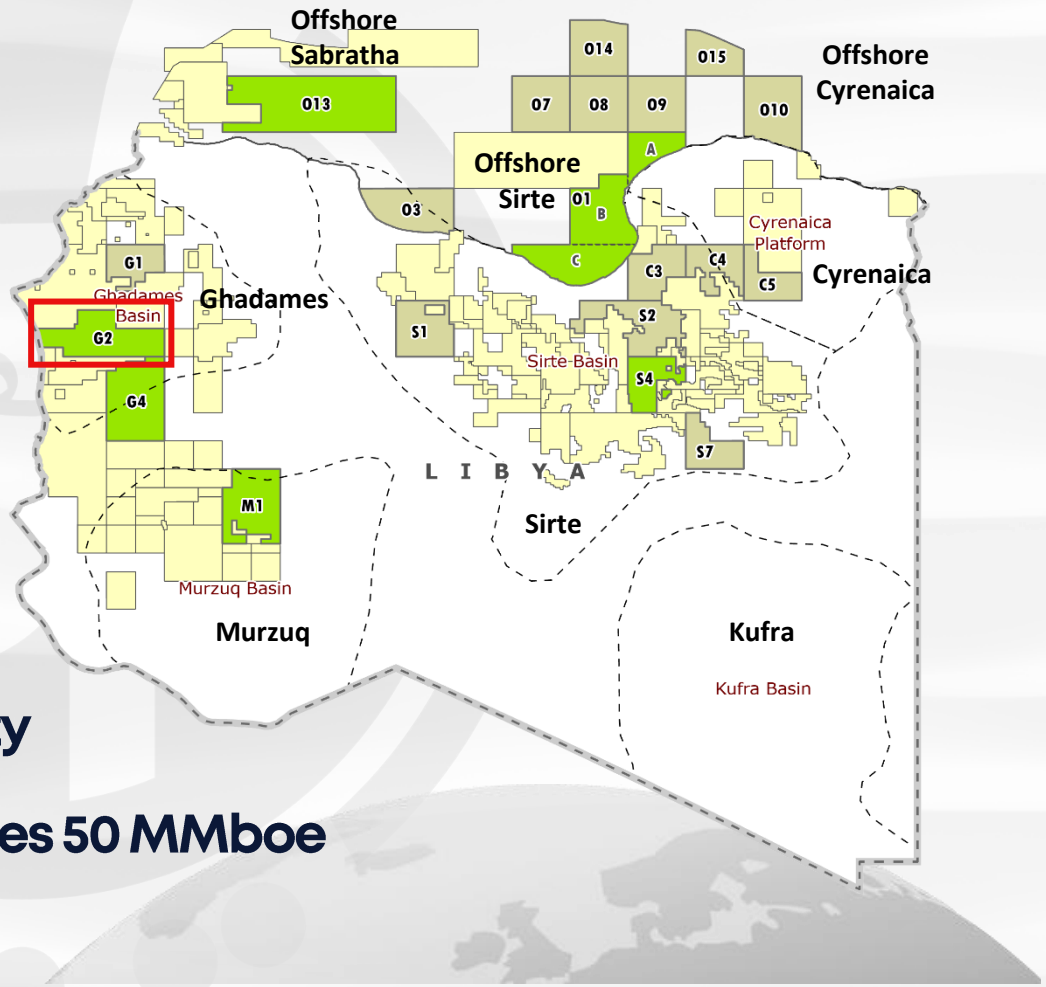


AREAS 79 (2), 80 (1,2,3,4),81 (1,2,3) – GHADAMES BASIN

Onshore G2

Details

Fiscal Regime	PSA
Size	13,428.7 km²
Location	Central Ghadames Basin
Surface Elevation (m)	650 m – 700 m Desert
Database	• 2D Lines 207 • 2D Length 6,429 line km • 3D Survey 3 • 3D Survey 1,233 km² • Wells 5



Exploration and Development Opportunity

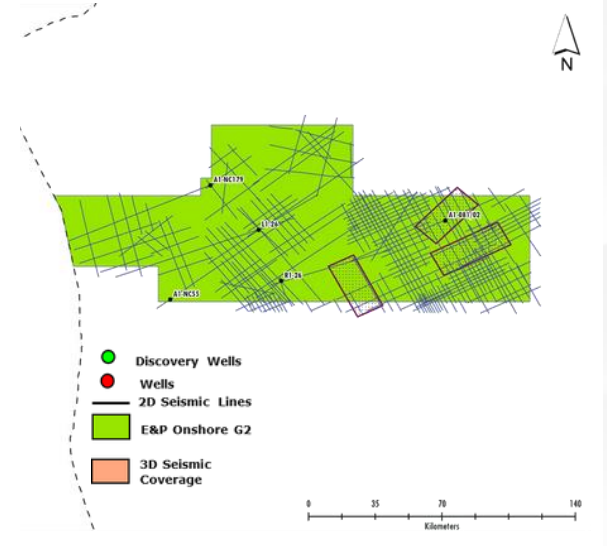
Two Oil & Gas Discoveries In-Place Reserves 50 MMboe

G2 - AREAS 79 (2), 80 (1,2,3,4),81 (1,2,3)

Overview

Ghadames Basin

AREA	# Of 2D Lines	2D Length "Km"	# Of 3D Survey	3D Survey "Km2"	# Of Wells
G2	207	6,429	3	1,233	5



Petroleum Systems and Plays

1. Silurian Tanezzuft-Acacus; oil prone Type II marine Kero
2. Devonian-Fracian anoxic radioactive shales oil and gas prone Type II TOC up to 15%; HI up to 500 mg/g TOC
3. Triassic Play - Potential
4. Lower Devonian Carboniferous Shelfal Clastic Play
5. L-M Devonian Shelfal Clastics of AwaynatWaninFms.
6. Upper Silurian Shallow Marine Clastic Play
7. Ordovician (Mamuniyat and Hawaz) Clastics Play
8. Potential stratigraphic pinch-out and truncations plays towards the basin margins and unconformities plays

Tectonic Framework

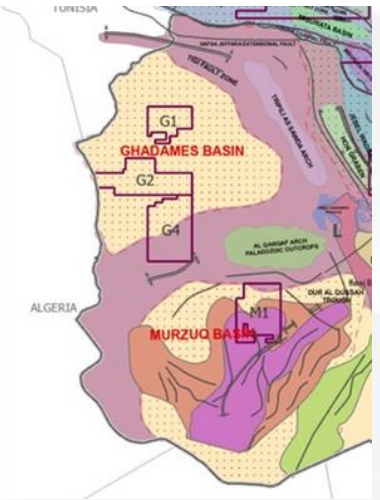
Geological Province: Central Ghadames Basin.

Prospectivity

- 1 Prospect and 10 Leads
- Estimated In-Place <0.5 Bboe.

Discoveries

Super Giant Fields shared between Algeria and Libya.
In the Area A1-NC179 and A1-81/2.
Nearby the Area, Al Wafa; Gazeil fields.

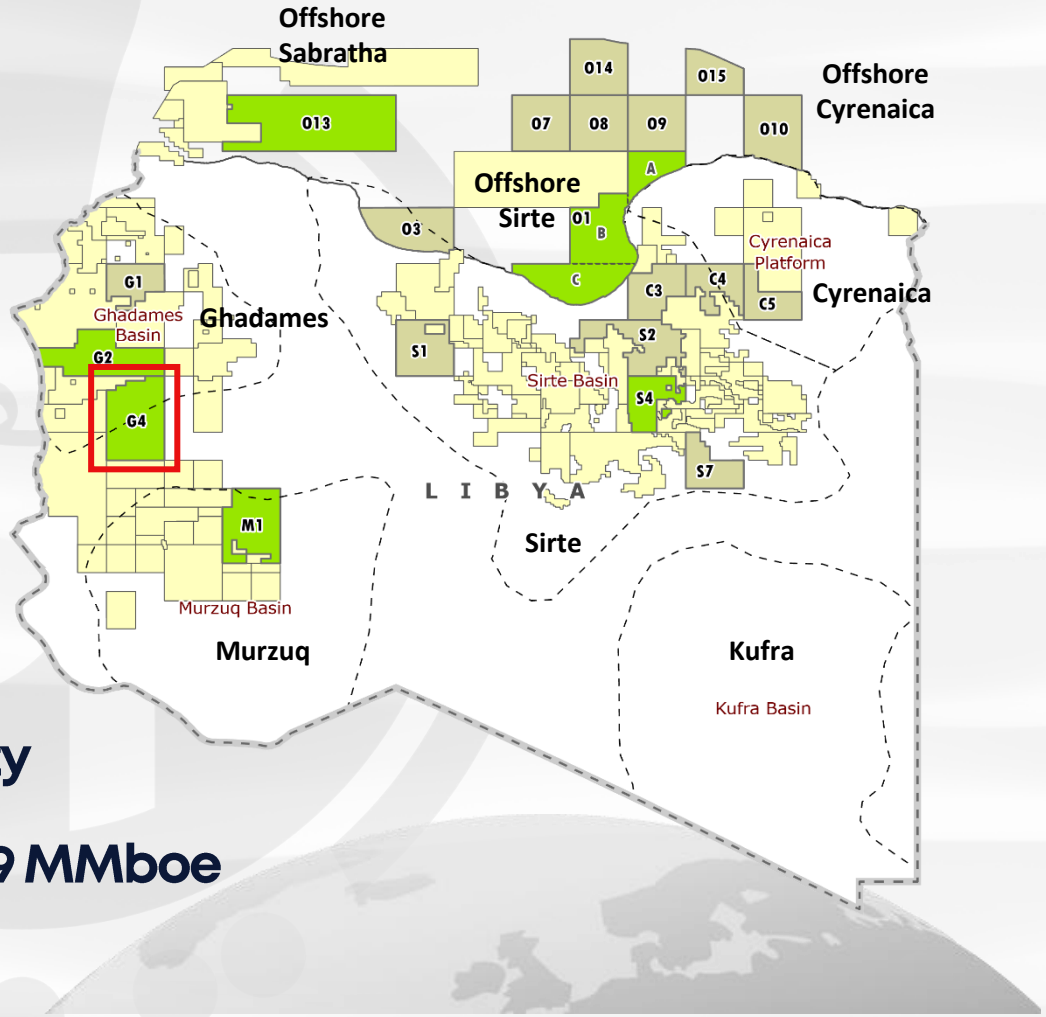


Details

Fiscal Regime	PSA
Size	15,262.5 km²
Location	Southern Ghadames Basin
Surface Elevation (m)	500 m – 800 m
Database	• 2D Lines 209 • 2D Length 7,058 line km • 3D Survey None • Wells 8

AREAS 97 (1,2,3,4), 113 (3,4) - GHADAMES BASIN

Onshore G4



Exploration and Development Opportunity

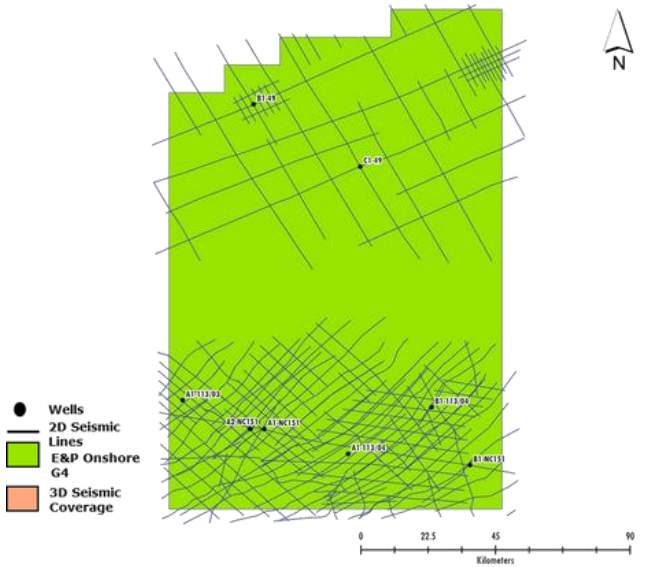
Two Gas Discoveries In-Place Reserves 159 MMboe

G4 - AREAS 97 (1,2,3,4), 113 (3,4)

Overview

Ghadames Basin

AREA	# Of 2D Lines	2D Length "Km"	# Of 3D Survey	3D Survey "Km2"	# Of Wells
G4	209	7,058	0	0	8



Petroleum Systems and Plays

1. Silurian Tanezzuft-Acacus; oil prone Type II marine Kero
2. Devonian-Fracian anoxic radioactive shales oil and gas prone Type II TOC up to 15%; HI up to 500 mg/g TOC
3. Triassic Play - Potential
4. Lower Devonian Carboniferous Shelfal Clastic Play
5. L-M Devonian Shelfal Clastics of AwaynatWaninFms.
6. Upper Silurian Shallow Marine Clastic Play
7. Ordovician (Mamuniyat and Hawaz) Clastics Play
8. Potential stratigraphic pinch-out and truncations plays towards the basin margins and unconformities plays

Tectonic Framework

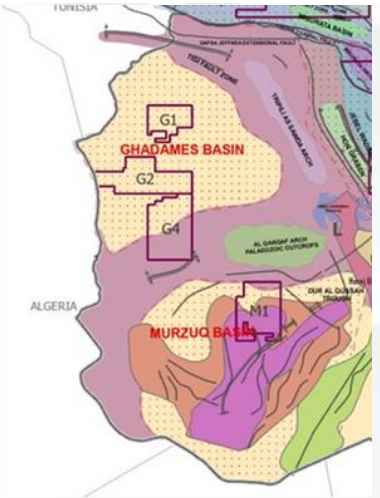
Geological Province: Southern Ghadames Basin.

Prospectivity

- +4 Leads
- Estimated In-Place >1.2 Bboe.

Discoveries

In the Area B1-49 and A1, A2-NC151 Nearby the Area, Al Wafa; Gazeil fields.

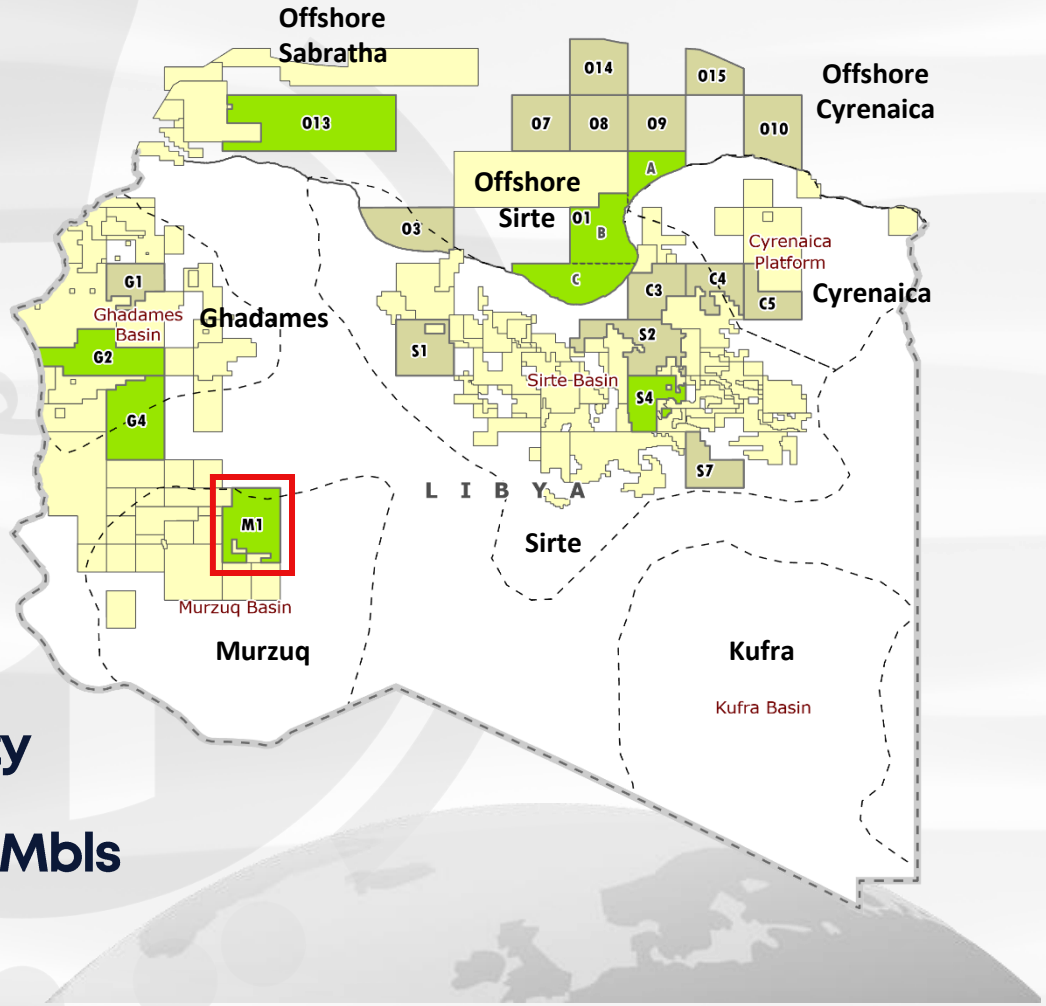


AREAS 131 (1,2,3,4), 147 (3,4) – MURZUQ BASIN

Onshore M1

Details

Fiscal Regime	PSA
Size	13,133.2 km²
Location	Northern Murzuq Basin
Surface Elevation (m)	480 m – 750 m
Database	• 2D Lines 115 • 2D Length 5,096 km • 3D Survey 1 • 3D Survey 362 km² • Wells 22



Exploration and Development Opportunity

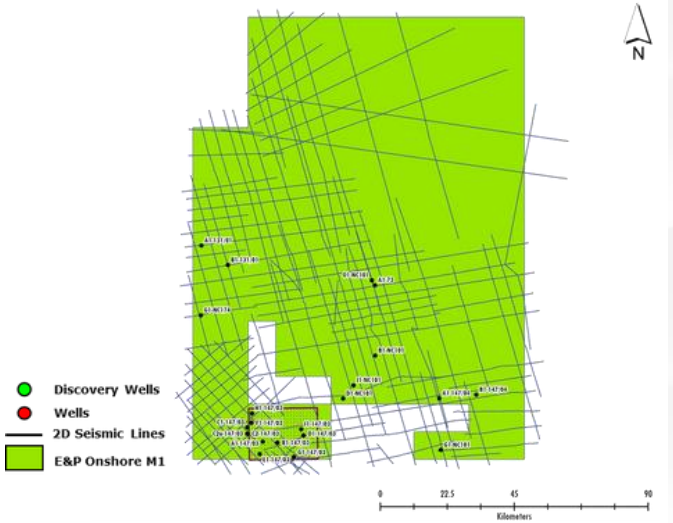
Six Oil Discoveries In-Place Reserves 181 MMbls

M1 - AREAS 131 (1,2,3,4), 147(3,4)

Overview

Murzuq Basin

AREA	# Of 2D Lines	2D Length "Km"	# Of 3D Survey	3D Survey "Km2"	# Of Wells
M1	115	5,096	1	362	22



Tectonic Framework

Geological Province: Northern Murzuq Basin.

Petroleum Systems and Plays

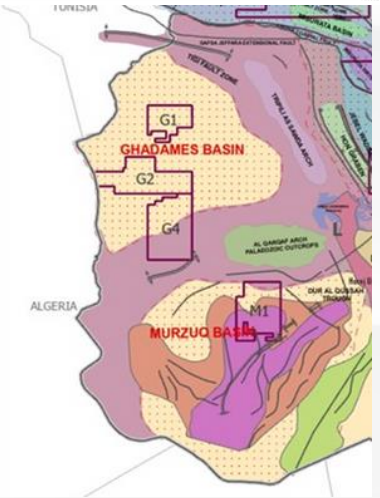
1. Silurian Tanezzuft-Acacus System; oil prone Type II marine kerogen.
2. Devonian-Frasnian anoxic radioactive shales oil and gas prone Type II TOC up to 15%; HI up to 500 mg/g TOC
3. Carboniferous Sst. Play Potential
4. Upper Devonian Sst Play
5. Middle to Upper Devonian Sst Play
6. Upper Ordovician Sst Memouniat Fm.) Play
7. Ordovician Sandstone Play

Prospectivity

- 3 Prospects and +3 Leads
- Estimated In-Place 1.2 Bboe.

Discoveries

From 1959 to 2010, 22 exploratory wells were drilled in the area. Drilling yielded six discoveries, totaling 181.2 million barrels (2P reserve). These discoveries have been included in the Onshore M1.



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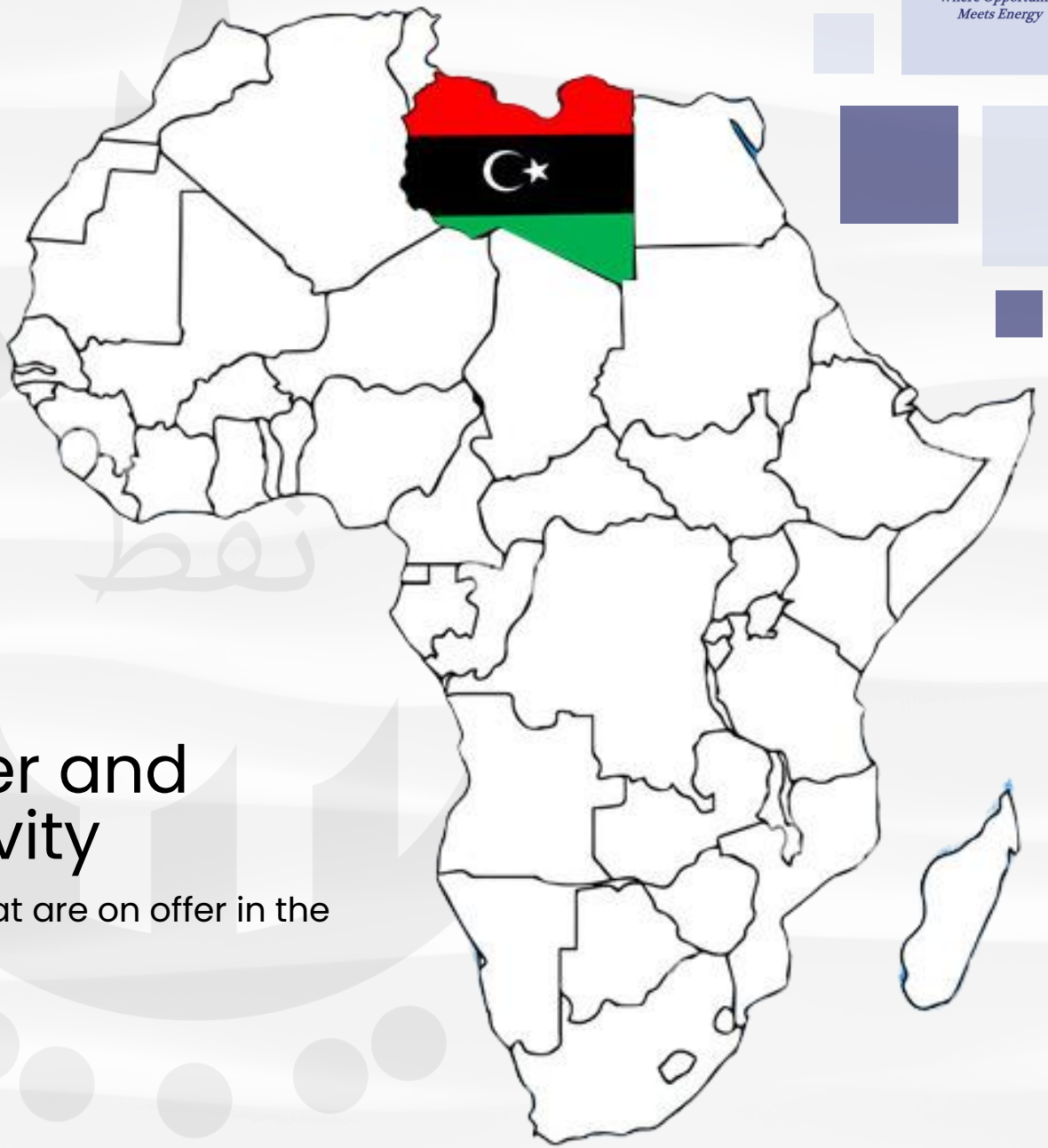

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