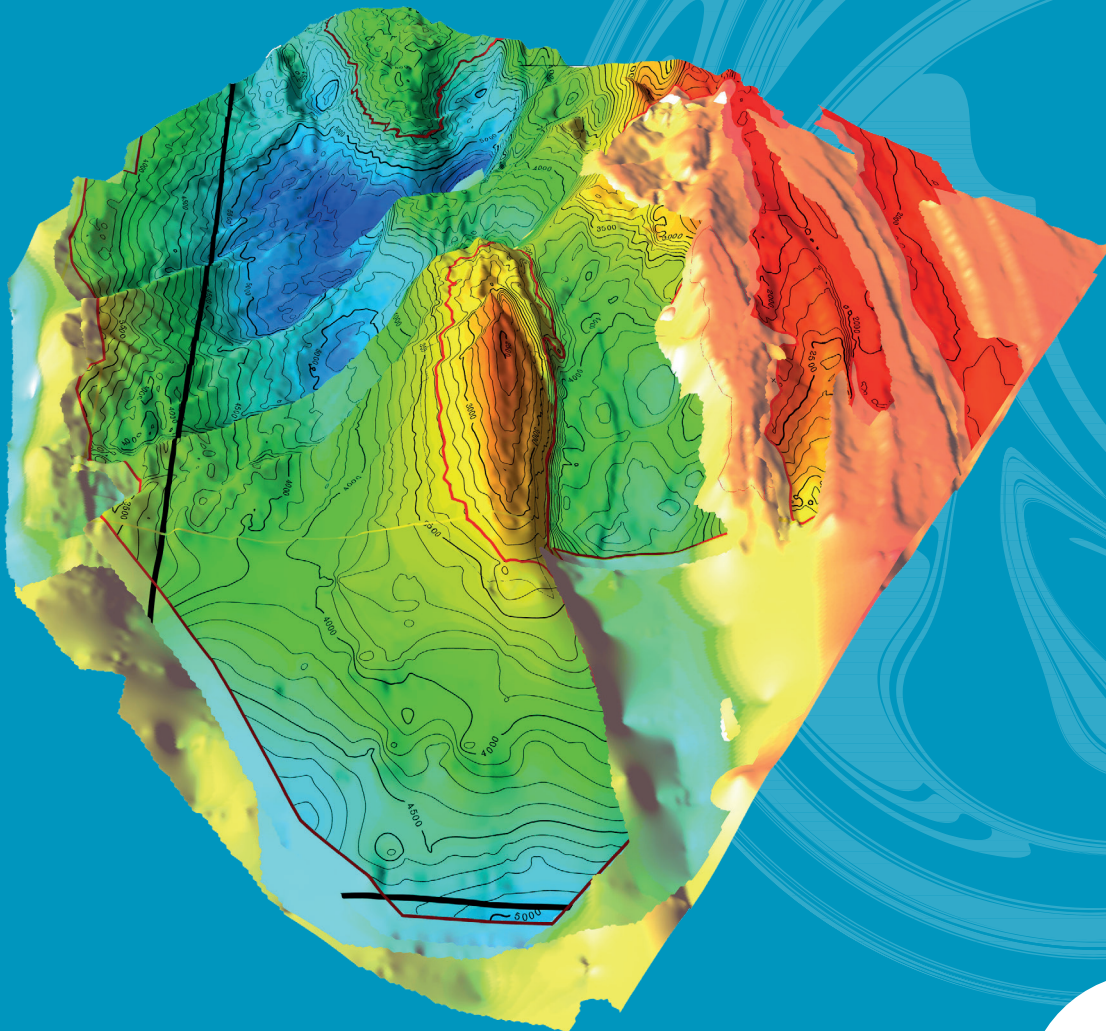




supernova
energy b.v.

INFORMATION MEMORANDUM

Q1 2023



Guinea Bissau

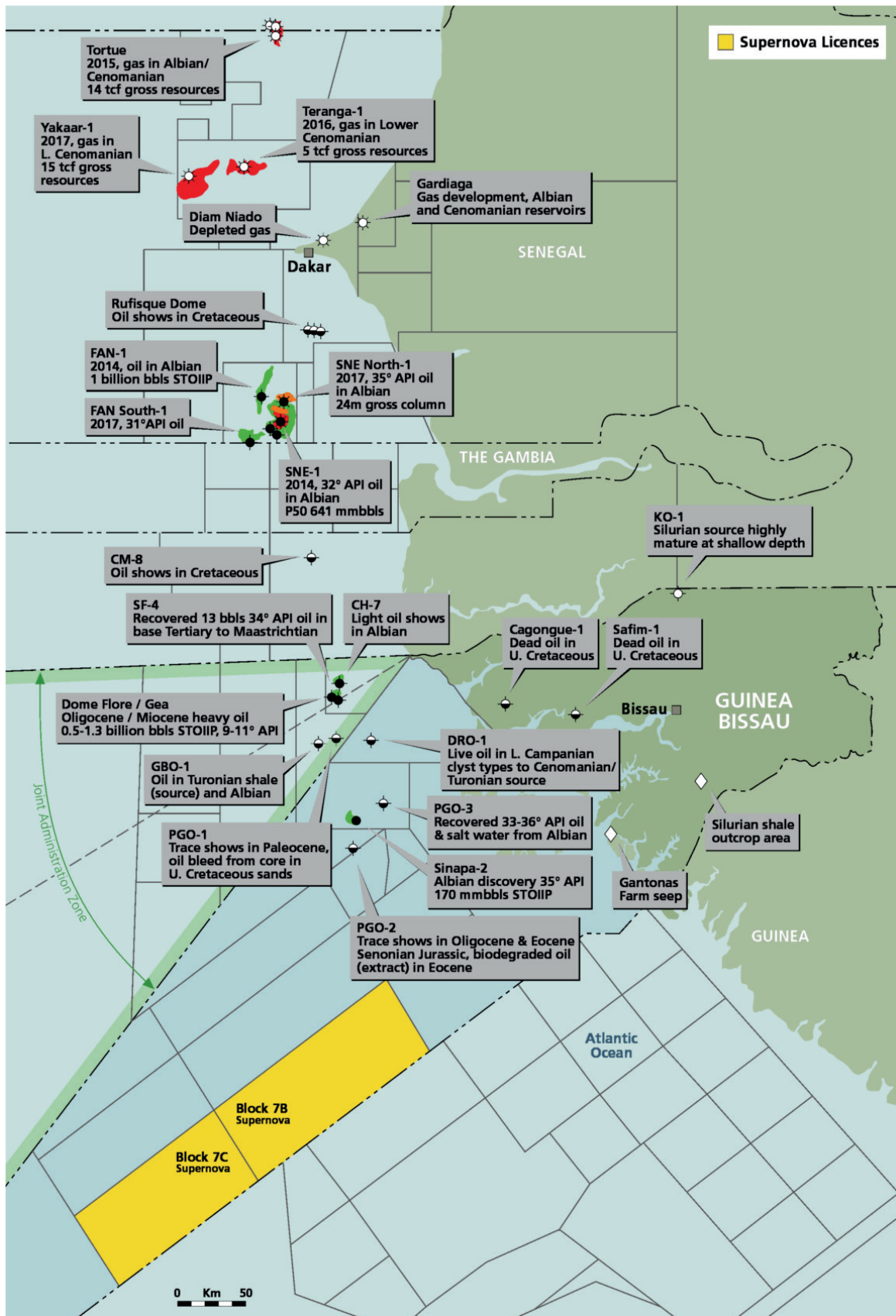
Blocks 7B and 7C - Farm-In Opportunity



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Guinea Bissau

Blocks 7B and 7C: Farm-In Opportunity



2023 Opportunity Summary

Introduction

Supernova Energy B.V. hold a 90% working interest in two licences offshore Guinea Bissau, with 10% held by state oil company Petroguin. Both licences are currently in the seismic phase, until October 2024 and Supernova is seeking a farm-in partner to pursue the exploration campaign on Block 7B (Garoupa) and Block 7C (Cor Cor), with respective areas of 8,736 km² and 7,136 km².

The two blocks lie within the southern part of the MSGBC Basin. This prolific basin hosts the giant Sangomar oil field and the Greater Tortue-Ahmeyim and Yakaar-Teranga gas fields along trend to the north; all of which are currently under development. The blocks also lie on the margin conjugate to the Guyana and Suriname basins, which have seen major exploration success for oil in recent years.

High-impact deep-water wells are scheduled for 2023 / 2024 along trend to the north on the Atum / Anchova prospect (PetroNor; Guinea Bissau Block 2), to test an Albian shelf margin play analogous to the Sangomar field and on Gainde, a Barremian carbonate reef play in the AGC Profond block (CNOOC / Impact Oil and Gas).

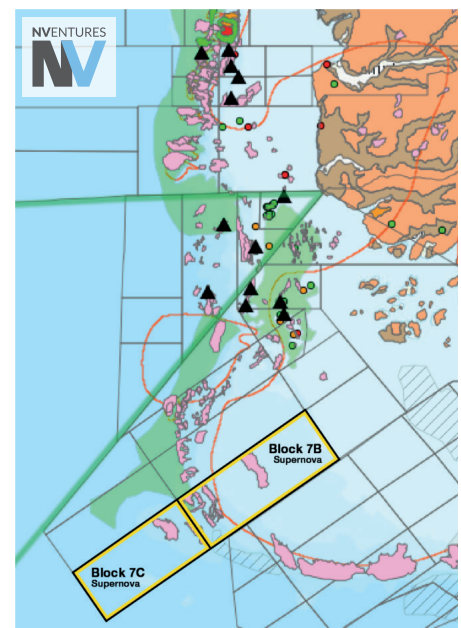
Reducing Geological Risk

- Evaluation of 2,300 km² of 3D seismic (shot in 2013/14) and 6,150 km² of 2D (shot in the early 2000's) has identified multiple leads in the 500 mmbbl to billion-barrel reserve range.



Map Showing the Location of High-graded Leads on the 3D Area

- Seismic amplitude effects along with evidence from slicks, seeps and seafloor geochemistry provide compelling evidence for a working petroleum system on Blocks 7B and 7C.
- The Guinea Bissau deepwater basin continues to be de-risked with recent and ongoing seismic and geotechnical work on Guinea Bissau, the AGC area, Senegal and Gambia by various operators and contractors.
- Major discoveries on the conjugate margin in Suriname and Guyana have proved a prolific, mature oil-prone marine shale source of Albian to Turonian age; the Canje Shale. Equivalent shales provide the source for the Sangomar, Dome Flore and Sinapa oil fields in the MSGBC Basin and are developed on Blocks 7B and 7C.

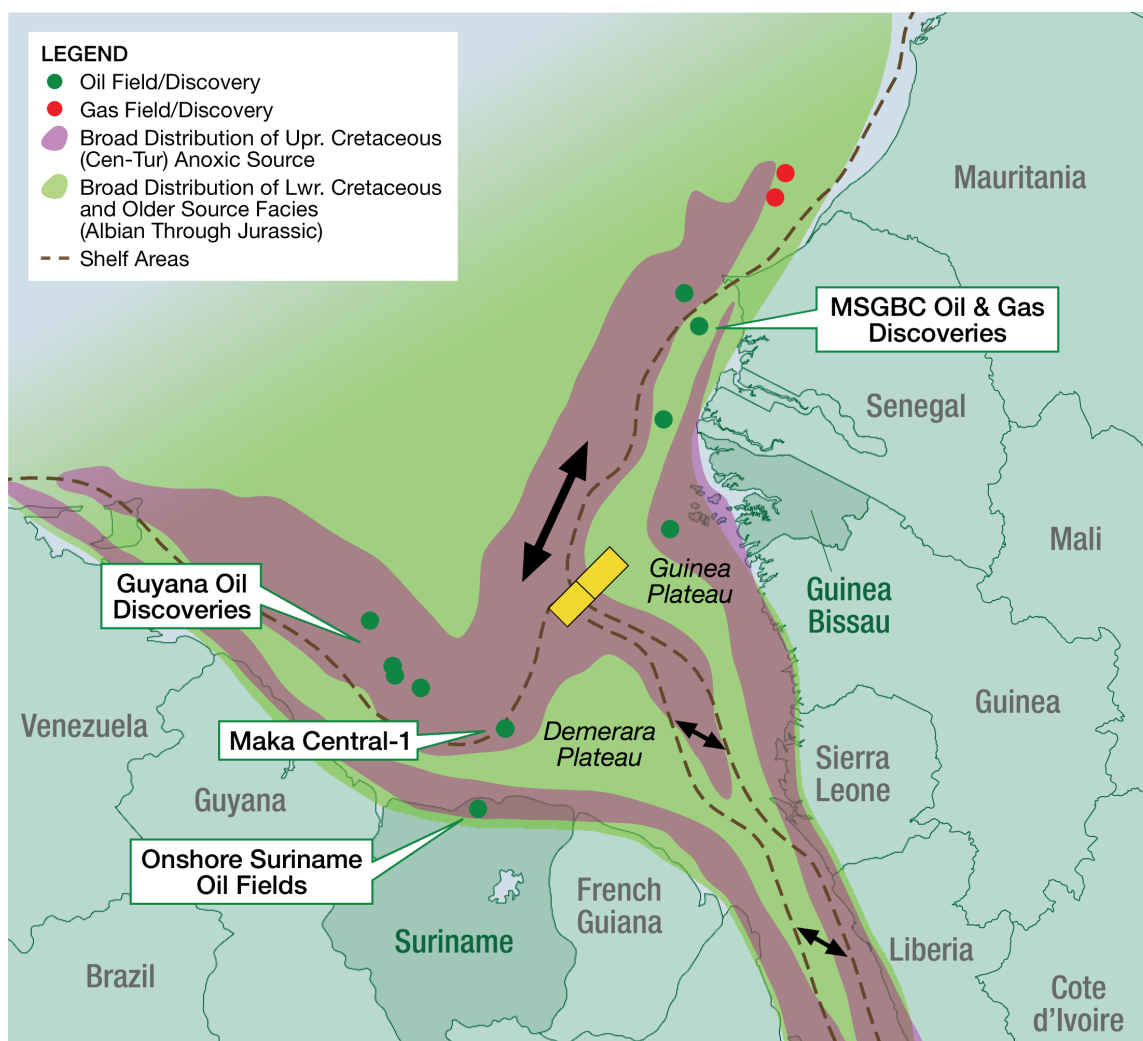


Planned Wells

Guinea Bissau

Blocks 7B and 7C: Farm-In Opportunity

- Detailed re-analysis of the DSDP 367 well by Kosmos proved oil-prone source rocks in the Lower Aptian / Barremian and Valanginian. Both intervals are represented on seismic by prominent and laterally extensive softs; indicative of relatively low-velocity shales. The Lower Aptian shale can be correlated south to Blocks 7B and 7C. Oil-prone marine shales of equivalent age have been proved on the South American conjugate margin and, further afield provide the source for the Venus-1 discovery, offshore Namibia. A basin modelling study for Supernova indicates that this shale would at optimum oil generation and timely for hydrocarbon charge.
- Following agreement on a treaty extension for the AGC area, long-delayed exploration drilling is anticipated, further de-risking the southern MSGBC Basin.



Postulated HC Kitchens Pre-Albian in the Guinea Suriname Triple Junction

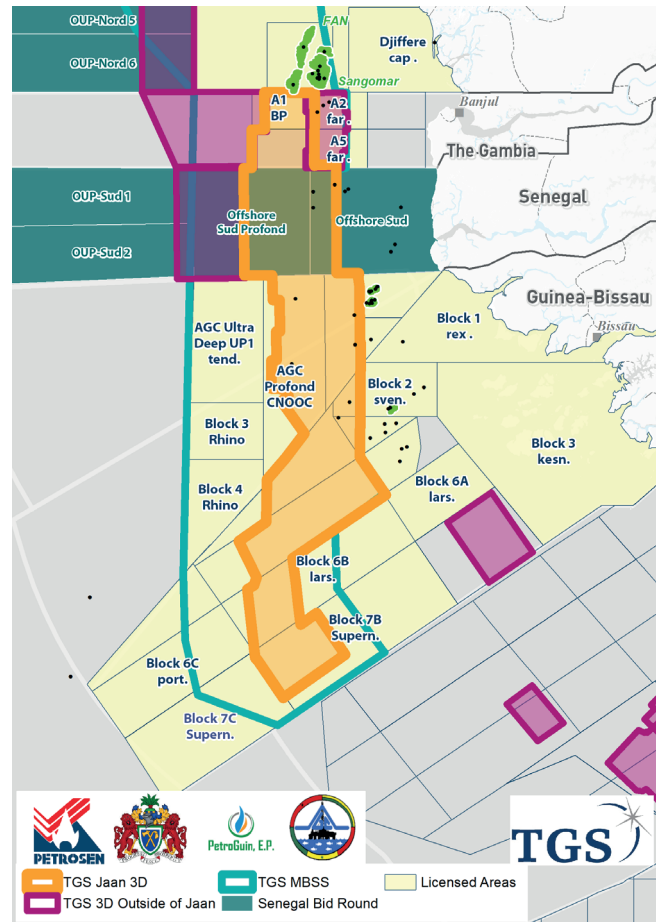
Guinea Bissau

Blocks 7B and 7C: Farm-In Opportunity

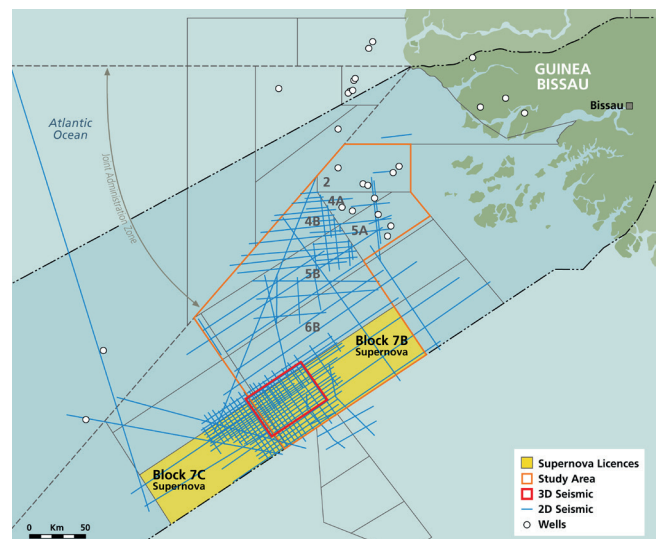


Databases

- In 2020 TGS and partners completed the Jaan 3D project; a major data acquisition and reprocessing programme running from southern Guinea Bissau to northern Senegal. Over 12,000 km² of newly acquired and existing 3D data were processed and harmonised to create seamless 3D PSTM and PSDM volumes.
- This TGS programme includes full 3D reprocessing over Block 7B as part of the larger survey.
- This large seismic footprint is complemented by a 114,000 km² seafloor geochemical survey (MB&SS survey), which includes mapping by Multibeam sonar and seafloor geochemical sampling that revealed several major seep clusters along basin trends, supported by full geochemical analysis.
- Satellite radar seep studies show a number of repeating slicks. A live seep on the coast of Guinea Bissau proved migrant light oil / condensate from geochemical analysis.
- On Blocks 7B and 7C, evaluation of 2,300 km² 3D seismic (shot 2013/14) and 6,150 km 2D seismic (shot in early 2000s) has identified multiple prospects in the 500 million bbl to 1 billion bbl+ reserves range.
- Seismic amplitude effects, geochemical, seep and slick evidence provide compelling evidence for a working petroleum system on Blocks 7B and 7C. A detailed basin modelling study shows that key source horizons could generate commercial volumes of oil and gas and charge the main leads.



Seismic, Multi-Beam and Seafloor Sampling Database Map



Seismic and Well Database Map

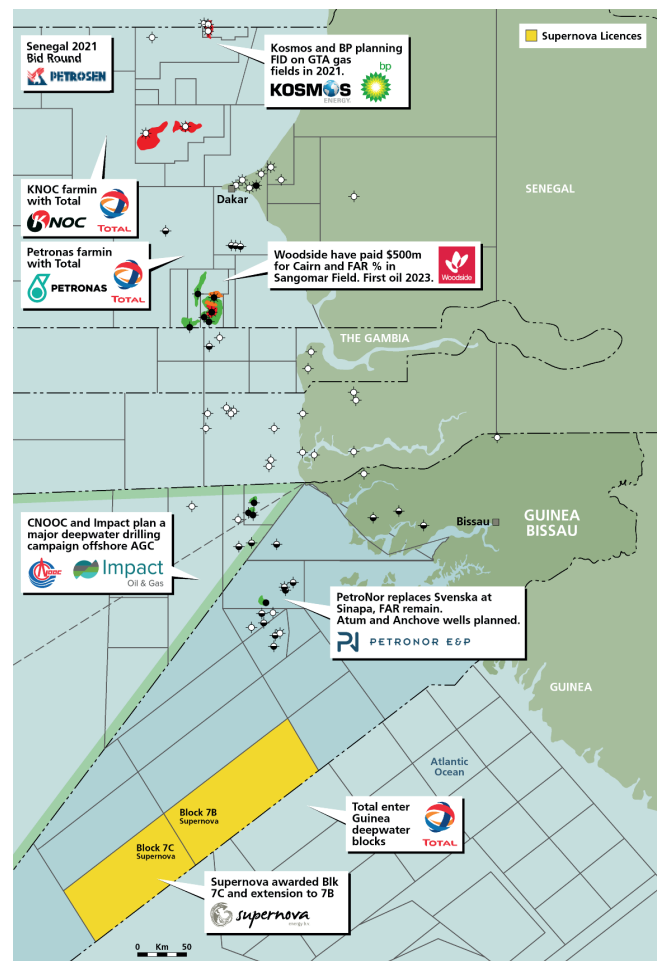
Guinea Bissau

Blocks 7B and 7C: Farm-In Opportunity



E&P Activity

- Block 7B – Supernova Energy has been awarded a two-year extension to Stage 2 of the JVA. Stage 3, which will include a drilling commitment, is now scheduled to begin October 2024.
- Block 7C – In 2022 Supernova Energy was awarded a two-year extension to Stage 1 of the JVA. Block 7C Stage 2 is now scheduled to begin October 2024. The initial 2D commitment for the first two years has been completed.
- In 2017, 2018 and 2021 Beagle Geoscience, on behalf of Supernova prepared major new proprietary studies on Blocks 7B and 7C. These new prospectivity studies integrated detailed seismic mapping and attribute analysis with petroleum systems elements over the entire deepwater Guinea Bissau area, resulting in a comprehensive and coherent evaluation. These data provided the basis of a detailed 3D basin modelling study prepared by Integrated Geochemical Interpretation Limited (IGI) for Supernova in late 2022.
- Regional activity:
 - PetroNor acquired Svenska interests in Guinea Bissau blocks 2, 4A and 5A in 2020, which covers the Sinapa oil field and the shelf-margin Atum and Anchova prospects (Block 2). Planned well on Atum in 2023 or 2024.
 - CNOOC / Impact may drill a high-impact exploration well on the Gainde prospect (AGC Profond Block), a dip-closed Barremian reef / “buried hill” play in 2023/24 following resolution of a dispute between partners Senegal and Guinea Bissau over the AGC area.
 - Having purchased the working interests of Cairn (Capricorn) and First Australian Resources, Woodside are progressing Phase 1 of Sangomar Field development, with first oil anticipated in late 2023.
 - BP are developing the giant Greater Tortue-Ahmeyim (GTA) and Yakaar-Teranga gas fields, with GTA Phase 1 gas production from 3Q 2023 and LNG export by the end of 2023.
 - Total and KNOC plan an ultra-deep water exploration well off Senegal in late 2023 or 2024.



Regional E&P Activity Map

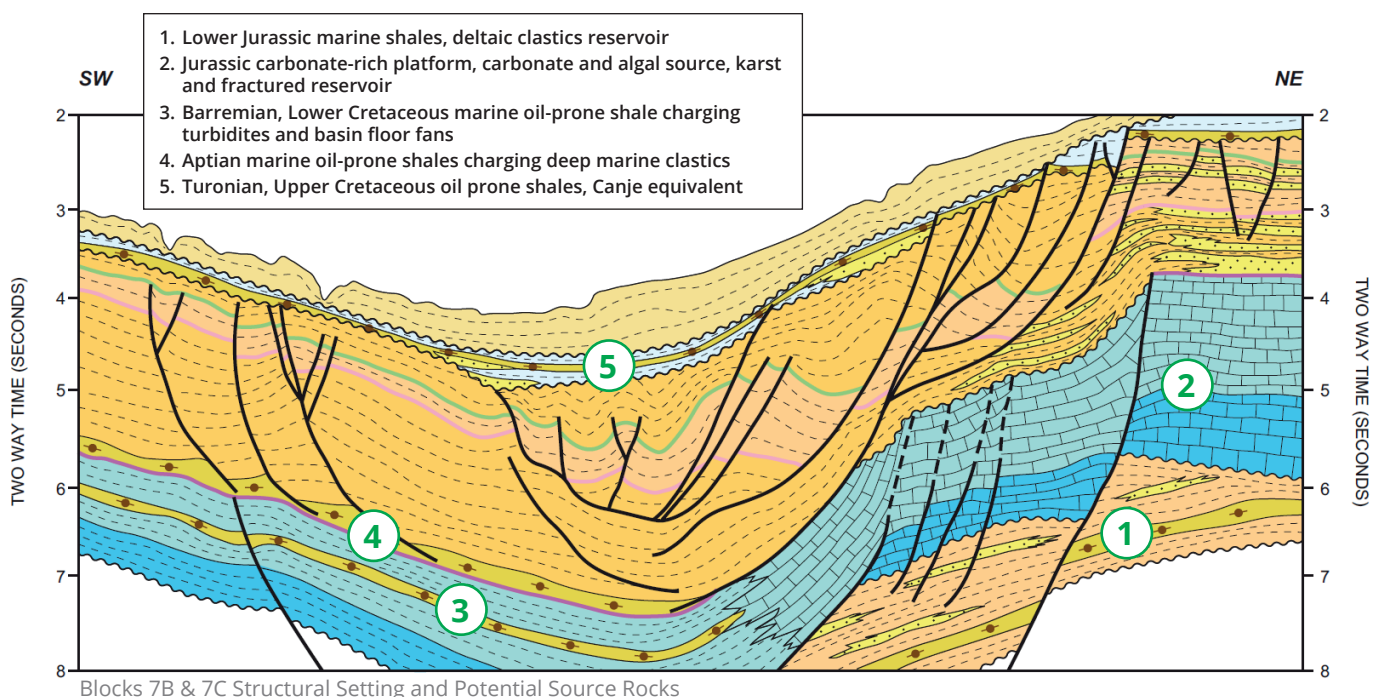
Oil and Gas Prospectivity

Detailed interpretation and geotechnical studies carried out by Beagle Geoscience in 2017, 2018 and 2021 have high-graded ten significant leads from 3D and 2D seismic data in water depths from 400 m to 2,500 m. These leads include large dip-closed fault block and anticline structures with the potential to hold recoverable resources from 500 mmbbl to more than 1,000 mmbbl in Aptian shallow and deep-water sands and with the potential for stacked reservoirs. Potential reservoir targets in the Lower and Middle Aptian show amplitude support for sand development and, in some cases evidence of conformance from amplitude and AVO data. Several deep-water Cenomanian channel systems, clearly identified by amplitude data, are also considered prospective.

Located on the NW-SE trending shelf margin Leads A and A1 are structurally closed subconformity traps; an analogous setting to the Sangomar field, with Lower and Middle Aptian sandstones sealed below Upper Cretaceous claystones.

Lead F is a large tilted fault block, with a well-defined closure from 3D and 2D data. This prominent structure is one of several large fault block and anticlinal traps developed on these blocks which are unique within the MSGBC Basin and result from mid Cretaceous rifting and separation between the Guinea margin and Guyana / Suriname. Seismic amplitudes, although uncalibrated, support the presence on Lead F of potential stacked deep-marine fan sandstones within the Lower to Middle Aptian, with several horizons exhibiting strong conformable amplitude and AVO anomalies.

Leads E and I are Cenomanian channel plays, overlying the main intra-Cretaceous unconformity and defined by prominent amplitude anomalies.



Guinea Bissau

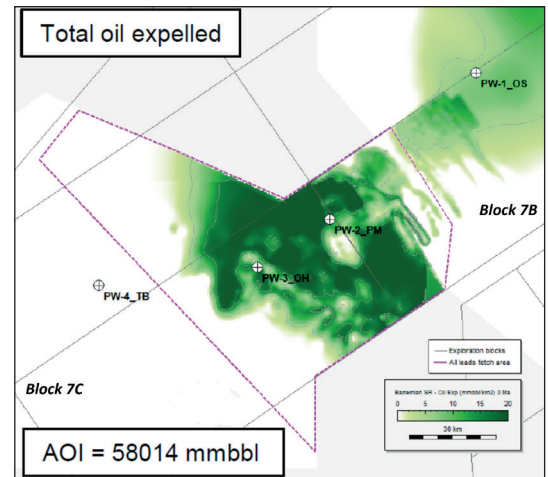
Blocks 7B and 7C: Farm-In Opportunity



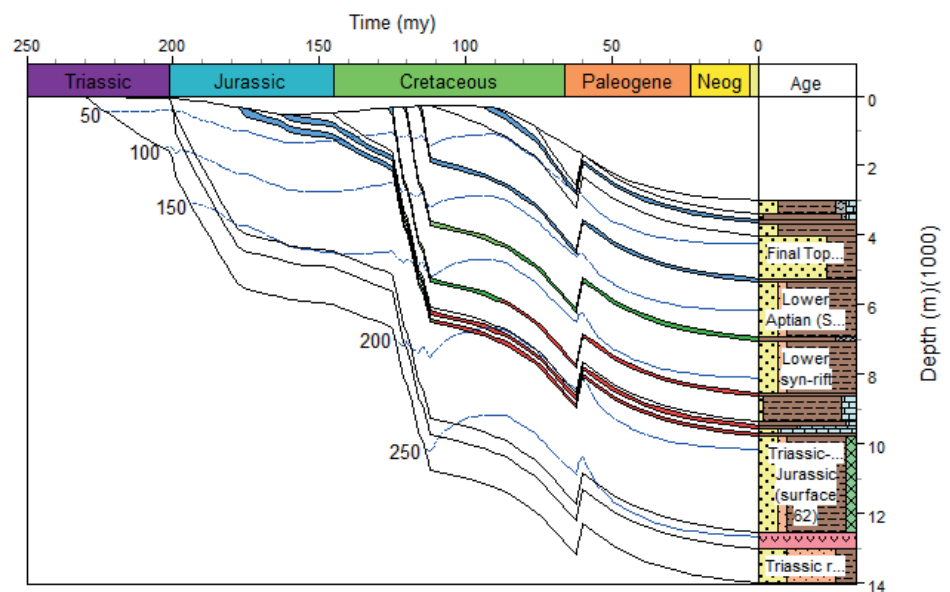
In 2018 Supernova participated in a major regional source rock study with First Exchange Corporation. This study provided a comprehensive and up to date review of all hydrocarbon occurrences in the region, along with an evaluation of source rock facies distribution models and maturation mapping from 1D basin modelling. In particular, the study supported the presence and significance of an Upper Jurassic source rock interval, as well as further evaluation of the proven Lower Cretaceous source models documented to the north and on the Guyana / Suriname conjugate.

Supernova commissioned IGI to prepare a detailed 3D basin modelling study in 2022 to evaluate the generative potential of the full licence area and charge capacity for the main leads. Based on the 3D / 2D seismic grid six potential source rock units, ranging in age from the early Jurassic (Toarcian) to the late Cretaceous (Cenomanian-Turonian) were modelled using source parameters from regional well and seismic control and geothermal models for an extensional transform margin calibrated to temperature gradients from well control and sea floor heat flow data.

This study showed that several source rock units of Albian age or older could generate significant hydrocarbon volumes. The Upper Barremian to Lower Aptian, which correlates with proven oil-prone source rocks, and to a mobile shale unit within the licence area, is optimally located to generate commercial volumes of oil into overlying Aptian and Cenomanian traps.



Basal Aptian Source: Total Oil Expelled (Present Day)



Burial history model for location PW-2

Several play analogues from productive basins have been identified that support understanding of the hydrocarbon prospectivity of Blocks 7B and 7C. These include Maka Central (Suriname), Cap Juby (Morocco), Sangomar (Senegal) and Deep Panuke (Nova Scotia).

Prospect Inventory

Mapping of the 3D and 2D data sets have identified ten main leads on Blocks 7B and 7C; several with the potential for stacked reservoirs, with amplitude support for reservoir development and, in some cases evidence for a conformable amplitude response and associated AVO.

The main identified play types are:

1. Lower to Middle Aptian deep-marine fan sandstones in structural traps as fault blocks (Leads F and H) and anticlines (Leads C and G) with potential stacked reservoirs and mature Lower Cretaceous (Aptian or Barremian) marine shales as the most likely oil-prone source.
2. Cenomanian deep-water channel-fill sandstones with amplitude support in stratigraphic traps (Leads E and I) with an Aptian / Barremian oil-prone source.
3. Lower to Middle Aptian shelf sandstones in structural, shelf margin fault block traps (Leads A and A1) with an Aptian / Barremian oil-prone source.

Block 7B Lead	WD (metres)	Unrisked Probabilistic Oil-in-Place mmbbl
Lead A	1,300	1,500
Lead E	1,800	1,500
Lead F - Mid-Aptian	2,100	2,500
Lead F - Lower Aptian	2,100	4,500

The main leads are shown in the map below and some of the principal leads are summarised on the following page.



Map Showing the Location of High-graded Leads on the 3D Area

Guinea Bissau

Blocks 7B and 7C: Farm-In Opportunity

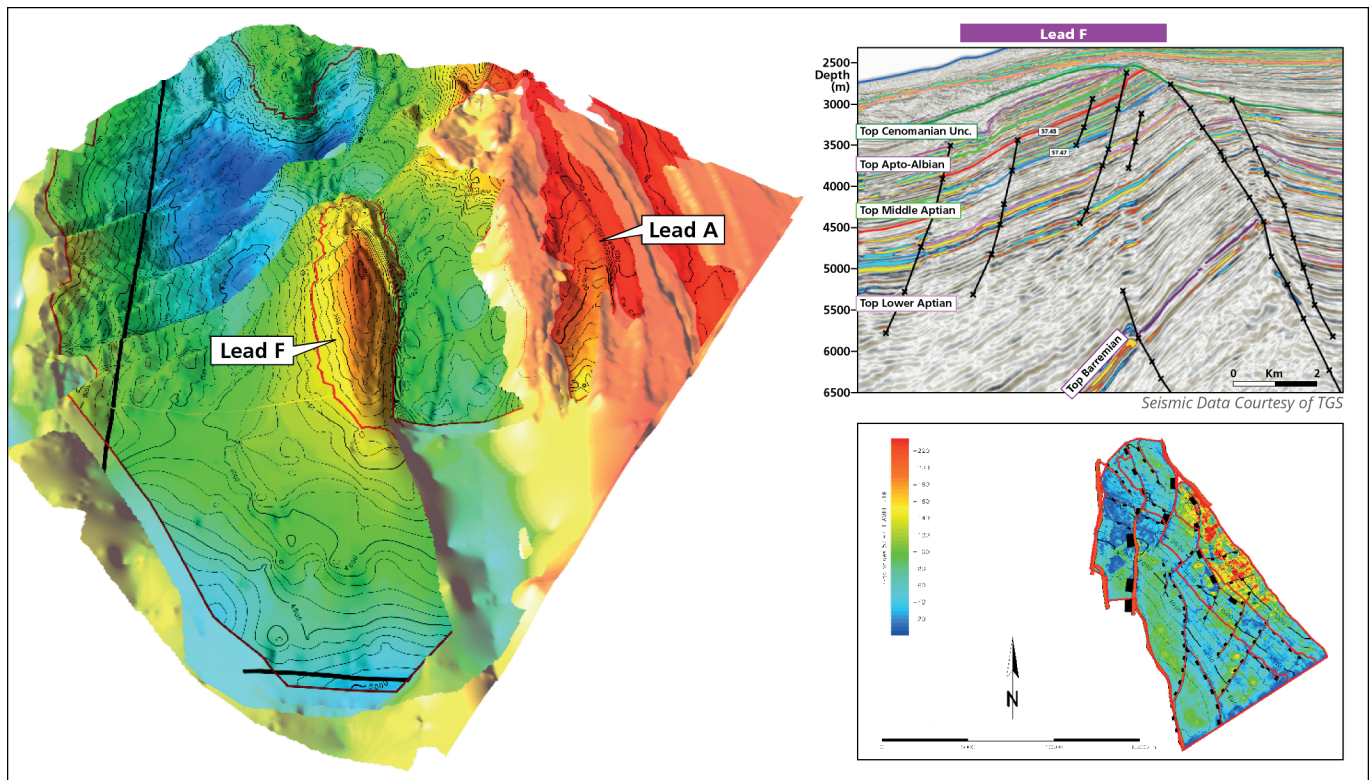
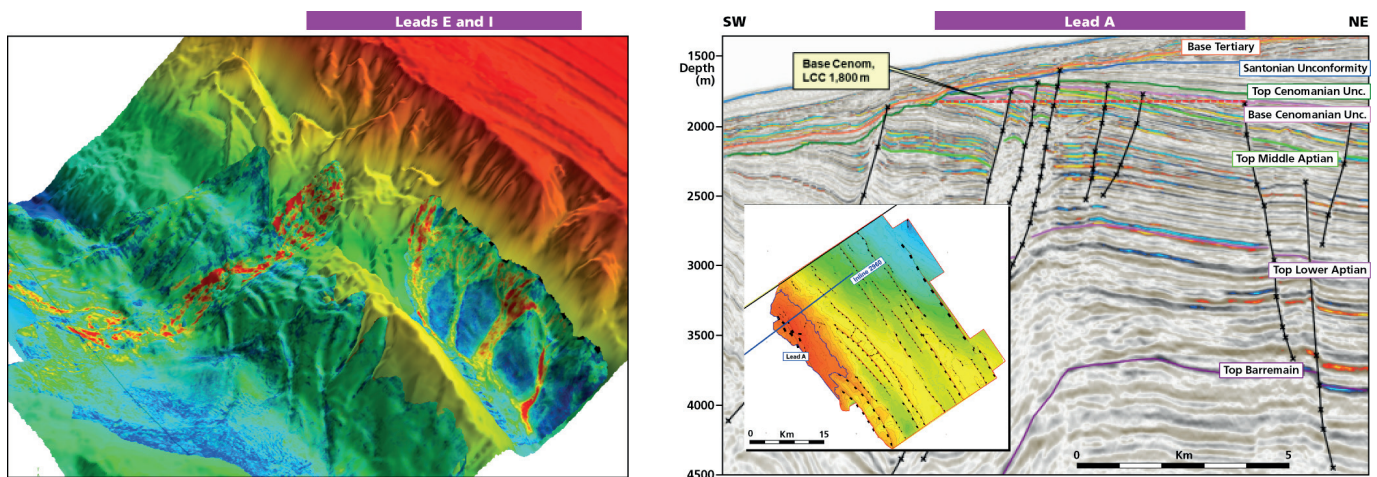


Illustration of Lead F Showing Potential for Giant Structure at Lower Cretaceous Level, Along With High Amplitudes at the Crest, Conforming to the Structure of the Lead.



Deepwater Channels in the Block 7B Showing Strong Amplitude Character

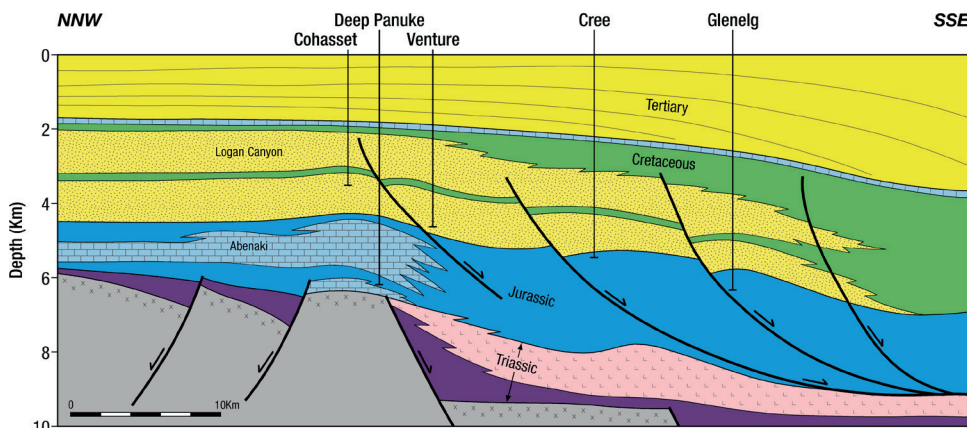
Illustration of Platform Edge Structural Prospects (Lead A)

Prospectivity on the licence is supported by evidence of migrant oil from piston cores on Block 7B, by surface slicks and the Gantonas Farm seep of light oil / condensate on the coast of Guinea Bissau. Proven migrant hydrocarbons include light oil in Albian sandstones at the Sinapa field (Guinea Bissau Block 2) to the north and over one billion barrels of heavy oil in the Oligocene at Dome Flore and Dome Gea in the AGC zone.

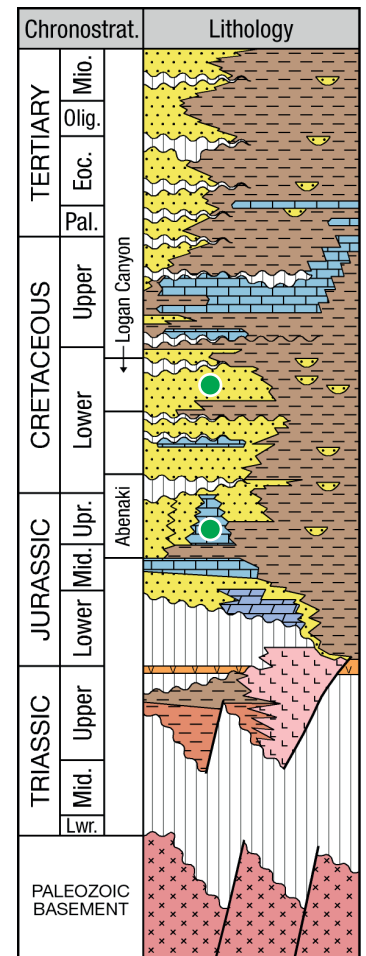
Analogues

Analogue - 1. Deep Panuke, East Canada

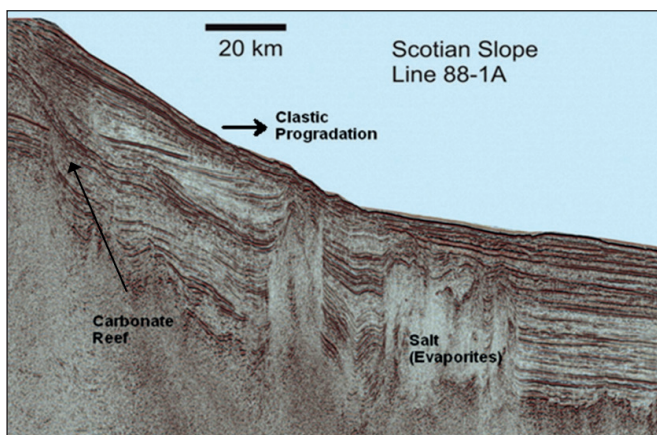
Indications of the potential of the offshore Atlantic margin come through comparisons with its conjugate margin in Nova Scotia. The Deep Panuke field offshore Eastern Canada is expected to be an analogue for the Lower Cretaceous and Jurassic play fairway in the MSGBC margin. Corresponding plays show a convincing symmetry in structure and stratigraphy. In the Scotian Margin off Canada over 200 wells have resulted in 23 fields and proven resources of 6 TCF gas and 200 mmbbl.



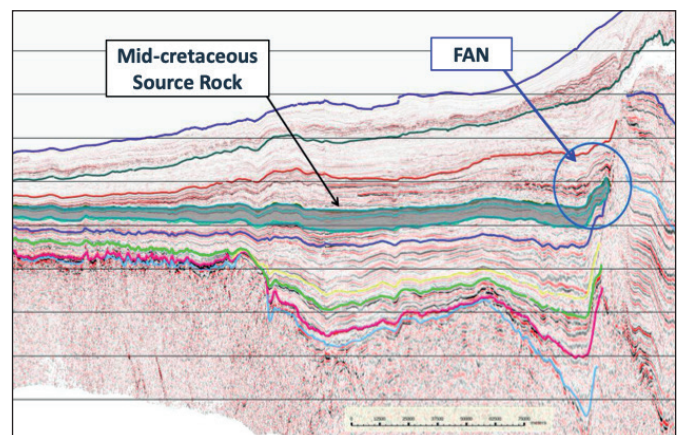
Geological Context of the Deep Panuke Gas Field



Stratigraphic Chart of the Scotian Margin Offshore Eastern Canada



Scotian Slope Rifted Margin. Illustrating the Carbonate Reef, Platform and Salt Diapirs



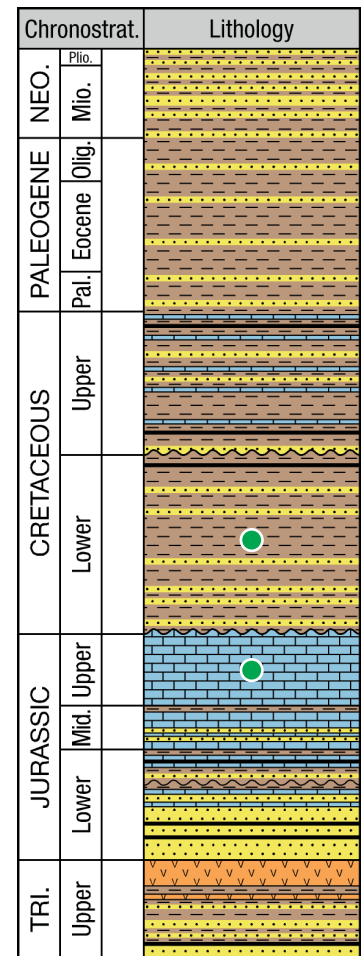
MSGBC Rifted Margin Illustrating the Carbonate Platform and Thick Lower Cretaceous

The East Canada Scotian Margin illustrates good symmetry to the northern MSGBC region with proved hydrocarbons on both margins.

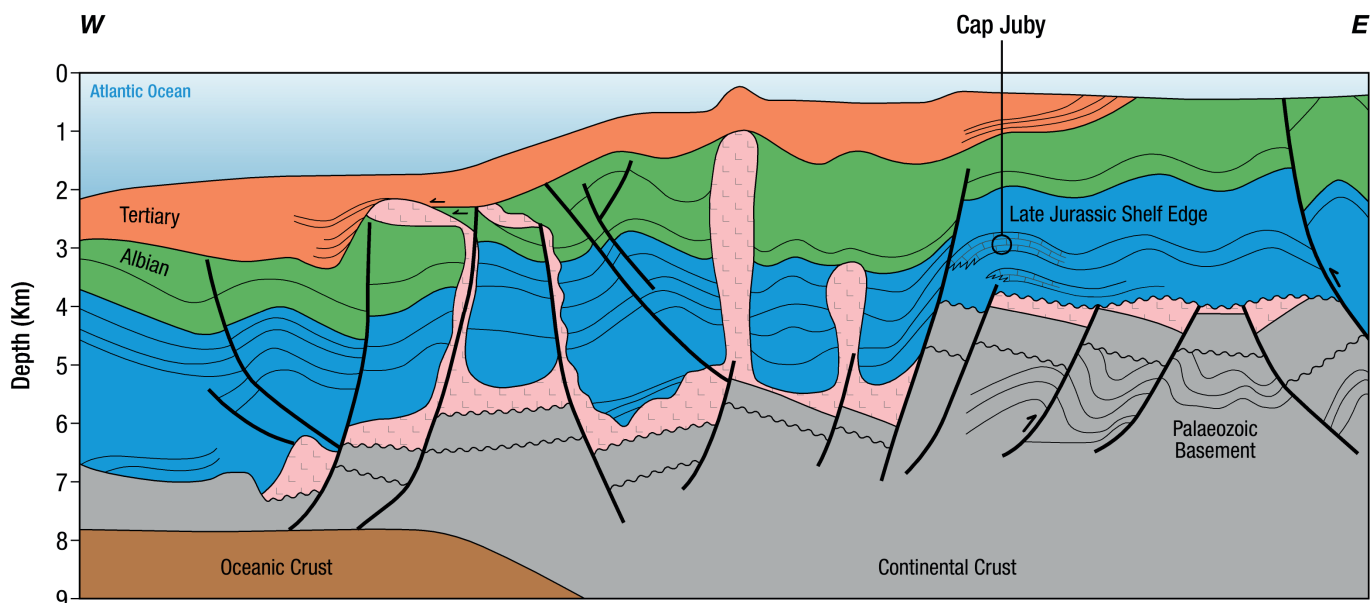
Analogue - 2. Cap Juby, Morocco

Cap Juby Field is a heavy oil discovery in 100m water, located 40km offshore Tarfaya, Morocco. Esso drilled the discovery well MO-2 in 1969, targeting a structural closure at the northern edge of a Jurassic carbonate platform. The well intersected karstified and fractured carbonates in the Upper Jurassic below 2,076m. Testing with acidisation returned 2,377 bopd of 10-12° API biodegraded oil. Formation water reached up to 40% cut. Porosity from core analysis reported between 1 and 13%. The Cap Juby play illustrates the potential for a structural trap in the platform edge sourced by Lower Cretaceous and / or Jurassic source facies along this margin. The play should persist north and south through the entire Jurassic platform of offshore NW Africa. The heavy oil result has perhaps dampened the enthusiasm for testing this carbonate play through the MSGBC basins, with discoveries at Sangomar targeting clastic systems above the platform margin and Tortue etc targeting clastic systems in the deepwater basin floor. Light oil has been recovered across the MSGBC region however and this Jurassic carbonate source / reservoir / structure petroleum system still holds great potential through the area.

Mesozoic sources offshore Morocco also include Triassic lacustrine syn-rift and rich Upper Jurassic source rocks, up to 10% TOC .



Stratigraphic Chart of the NW Africa Margin

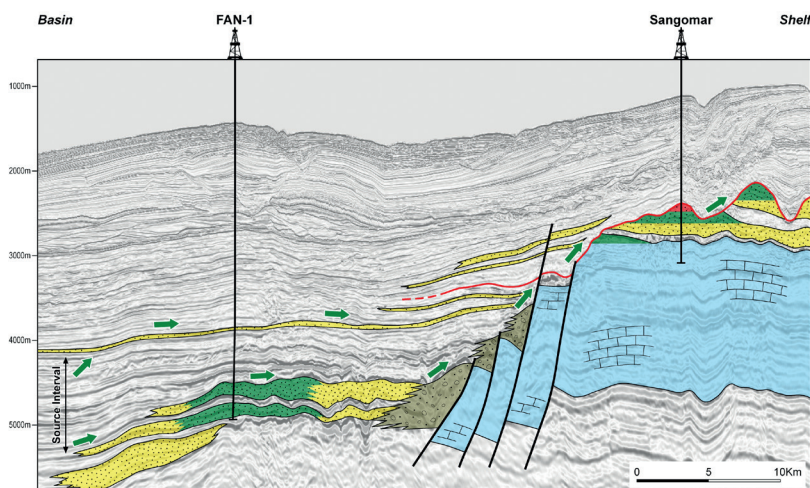


Geological Context of the Cap Juby Heavy Oil Field

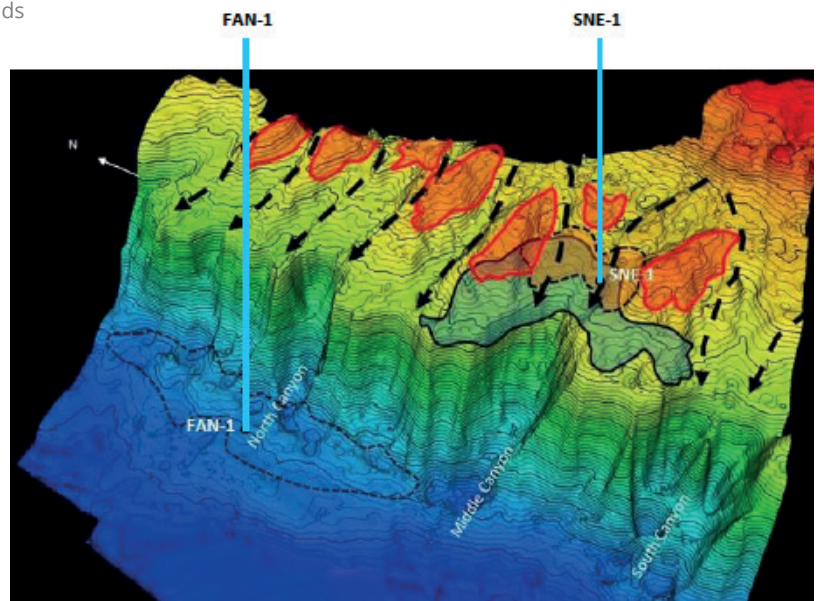
Analogue - 3. Sangomar, Senegal

The play-opening Sangomar (previously SNE) field is located on the Sangomar Deep block, in water depths ranging from 650 to 1,400 m. Discovered by Cairn in 2014, Woodside is now the operator with Phase 1 FID taken in January 2020 and production start-up scheduled for late 2023. Reserves are estimated at 130 mmbbl of light, 32° API oil with 2,400 bcf gas.

The Sangomar field has two main pay zones in shallow marine to slope facies Albian sandstones overlying a carbonate platform, with closure defined by a combination of eastern structural tilt and reservoir truncation at the platform margin unconformity, with overlying Upper Cretaceous claystones providing the top-seal. The oil has been correlated geochemically to basinal Albian and Cenomanian marine black shales which have been proven, oil-mature west of the platform margin and Sangomar field in the FAN-1 well.



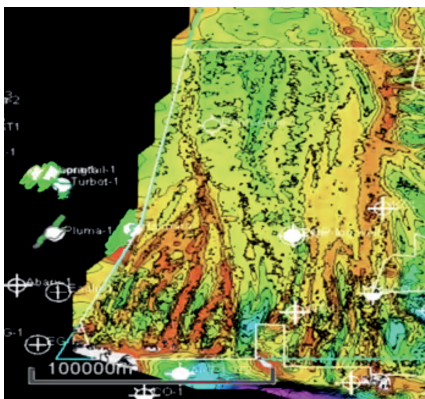
Geological Context at the Sangomar and FAN Oil Fields



Structure and Trapping at the Sangomar and FAN Fields, With Clastic Entry Points

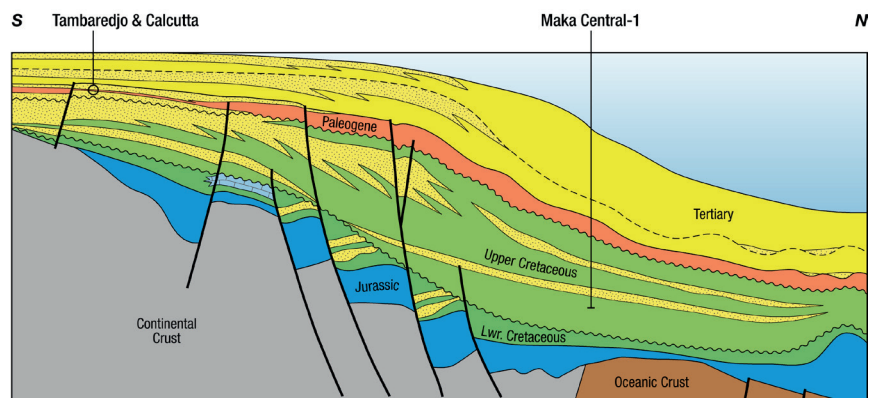
Analogue - 4. Maka central, Suriname

The Guyana Suriname margin has seen great success at Liza and Maka Central in recent years, with many follow-up discoveries. The play consists of Upper Cretaceous channels fed from a Lower Cretaceous / Jurassic platform to the west, coalescing into large high amplitude channels and turbidites. The discoveries to date rely on the “Canje” play, with a world class Cen-Tur marine source rock interval. Lower Cretaceous source and reservoir potential is now being tested in Suriname.



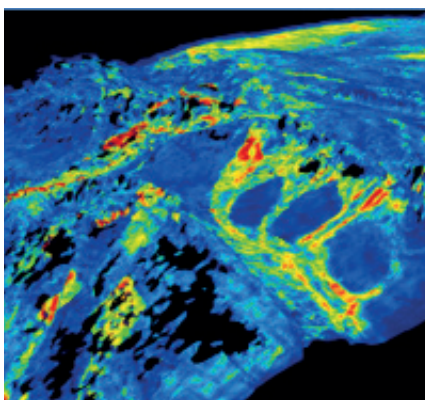
Campanian Thickness Map

Courtesy Staatsolie Hydrocarbon Institute Presentation 2020



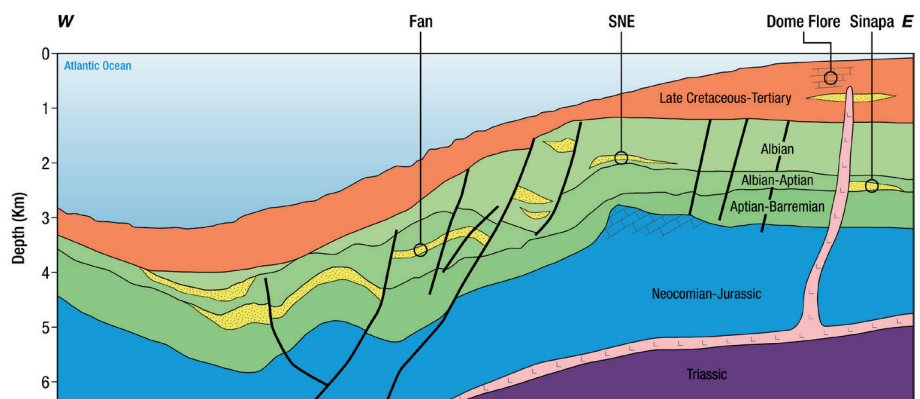
Geological Context of the Maka Central Discovery

Similar geometries are observed in the Lower Cretaceous along the southern MSGBC margin, with channels fed from the Lower Cretaceous / Jurassic platform to the east, coalescing into large high amplitude channels and turbidites. This play currently relies on Lower Cretaceous marine oil-prone source rocks, proven at Sangomar and probable source for Tortue, but Jurassic source rocks may also exist (as seen offshore Morocco). The Upper Cretaceous Cenomanian-Turonian marine source is also proven in the coastal basins, and may be replicated in the ultra-deepwater, where overburden increases.



Top Lower Cretaceous Amplitude Map

Courtesy TGS Multiclient 3D and Lyme Bay DRS Imaging



Geological Context of the MSGBC Margin

Joint Venture Agreement

1. JVA Fiscal terms

- Administration / Training fees
- Royalty 2.5%
- Tax..... 25%
- Government take capped at 55%
- Cost recovery 90%
- Low discovery bonuses

2. JVA Timeline

STAGE	WORK PROGRAMME
Stage 1: Block 7B	G&G interpretation and reprocessing 2D (Complete)
Stage 1: Block 7C (Extended to October 2024)	G&G interpretation and 2D licensing and interpretation (complete)
Stage 2: Block 7B (Extended to October 2024)	2,377 km ² 3D (Complete)
Stage 3	1 well

Licence Updates

- In October 2020 the President of Guinea Bissau signed the Decree to award the Block 7C (Cor Cor) Licence to Supernova, effective 3 October 2020. The 6 year licence has an initial 2 year phase in which to licence or acquire 2D seismic data.
- In 2022 the government awarded a two year extension to Block 7B (Garoupa) Licence Stage 2 to October 2024, and a two year extension to Block 7C (Cor Cor) Licence Stage 1 to October 2024.

The Company

Supernova Energy B.V. participates as a technical and financial partner in oil & gas exploration and production.

Formed in 2007, Supernova aims to expand its portfolio of equities in oil & gas developments initially as non operator, and where possible providing its corporate expertise and experience with field development, floating production systems and marine terminals.

www.supernova-energy.com

Farm-out Process

Supernova are seeking suitable industry partners, preferably with deepwater exploration experience, to participate in the exploration stage of the JVA Licences. Block 7B is currently within a 2 year Stage 2 extension phase. A drilling commitment is expected in Stage 3. Block 7C is currently within the initial 2D seismic phase.

A data room is being held in London. Interested companies are invited to apply for a CA and data room access from Supernova or their London representative for this project, Peter Elliott.

peter.elliott@pveconsulting.co.uk

Timing

The Data Room is available in London through 2023.

Summary

- An exciting exploration Farm-in opportunity in a prospective region of West Africa.
- Major new structural lead in a tilted fault block with high amplitude over the crest conforming with structure and over 1 BBO Prospective Resources unrisked.
- Multiple prospects identified in the 500 million bbl to 1 billion bbl+ range (unrisked recoverable prospective resources).
- Strong supporting evidence for a working petroleum system in the MSGBC Basin and Blocks 7B and 7C.
- Favourable fiscal terms.

Contact

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