



## New Project Introduction

### Offshore Ghana

#### Deep Water Tano Basin

#### Central Tano Block

Unique opportunity to participate in the drilling phase of the unexplored, but highly prospective, Central Tano Basin acreage, adjacent to the proven / producing world class Cretaceous Transform Margin Play Fairway.



### Opportunity Highlights

- Participation in an unexplored area of the unique proven / producing Tano Basin, situated between the prolific Cretaceous fields (including Jubilee, Teak and TEN field complex) discovered on the deep water shelf slope of West Africa's transform margin play fairway
- Extensive new interpretation of existing 3D seismic has unlocked multiple stacked Cretaceous leads and prospects, each with 90 – 300+ MMboe resource potential (combined 1,200+ MMboe), in acreage awarded to AMNI after statutory acreage relinquishment
- Acreage with favourable terms and proximity to existing infrastructure, ensuring early development of any discoveries

*The exploration potential described in this overview and the AMNI farmout presentation of the CT Block is by no means a full and complete descriptions of the opportunities available in the acreage. Additional interpretation and analysis may reveal new potential that may exceed the current resource assessment.*



**Introduction:** Amni International Petroleum Development Company Limited (Ghana), ('AMNI'), holds 90% participating interest and operatorship of the 279 km<sup>2</sup> Central Tano Block ('CT Block') situated in the Tano Basin, along the highly productive part of the transform margin, offshore Ghana. The block is approximately 60 km offshore, in water depths between 300 and 1,500+ metres, and is bounded by the retained areas of the prolific Deepwater Tano and Cape Three Points Blocks. These contain the very large Jubilee, Teak, Akasa and so called TEN field complex that followed the play opening discovery in 2007 when the deep water Mahogany-1 well encountered stacked, oil filled Cretaceous post-rift (Turonian) sands. This discovery started an exploration frenzy elsewhere along the African deep-water margin but, to date, only the prolific Tano Basin has proven to be a world class hydrocarbon basin.

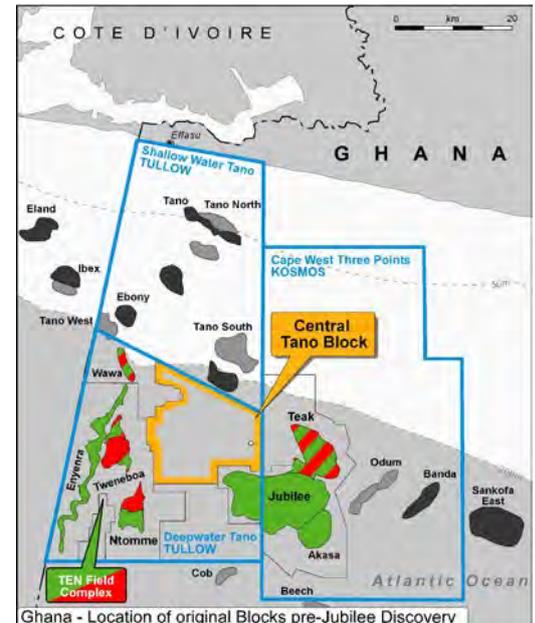
AMNI International Petroleum Development Company, a successful West African exploration and production company, was awarded the Central Tano Block in March 2014 under a seven year licence period subject to three exploration terms. This followed the statutory relinquishment of part of the pre-existing Tullow-operated Deepwater Tano Block. The remaining 10% of the CT Block is held by the Ghana National Petroleum Corporation (GNPC).

Recent remapping of the available 3D by AMNI across their acreage has revealed prospectivity in all of the primary reservoirs, from the syn-rift rotated fault blocks of the Albian to the large stratigraphic and combination traps identified by AMNI in the post-rift Cenomanian, Turonian and Campanian stratigraphy.

AMNI is now seeking an experienced deep-water operator with a successful track record to join them to advance the ongoing geoscience effort with the goal of drilling the best opportunities from the portfolio of 6 drillable prospects and 11 leads so far identified. Estimated recoverable resource potential of each prospect ranges between 90 and 300+ MMboe. AMNI is offering a material interest in their CT Block in return for a contribution to its past costs and the funding of 2 exploration wells (est. US\$ 50 million each) before March 2017.

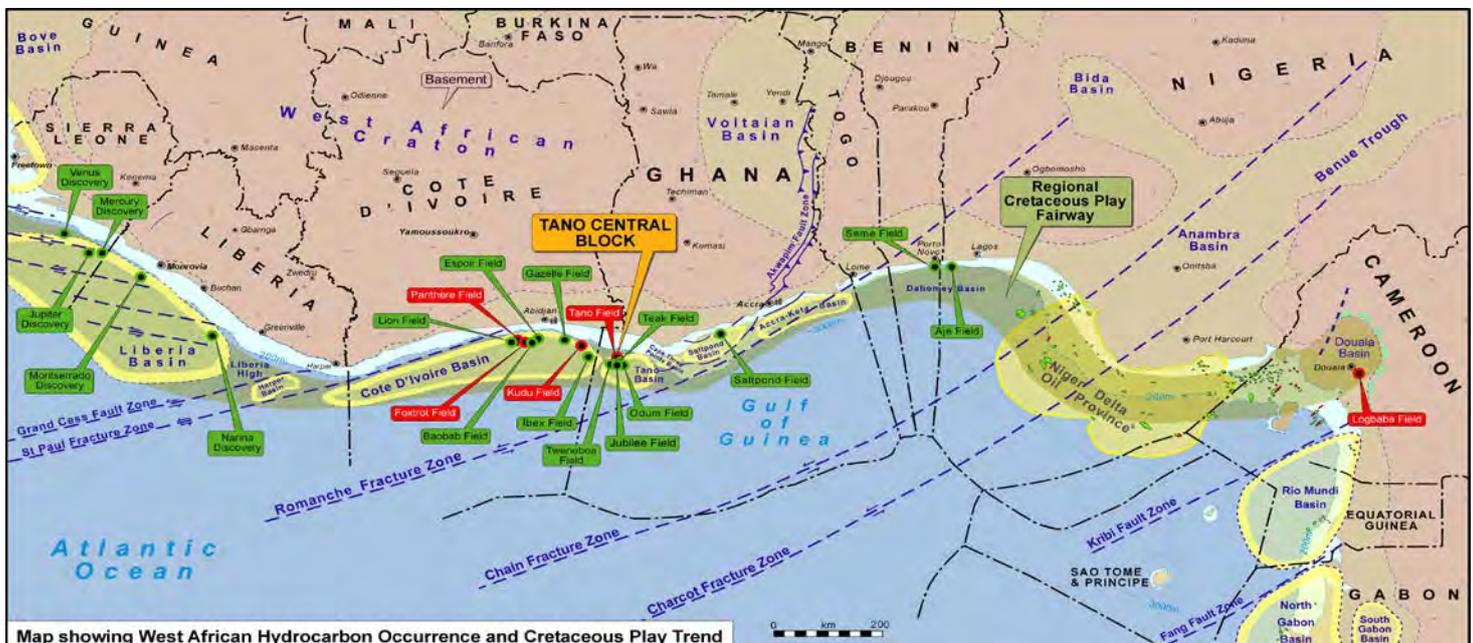
**Brief Exploration History:** AMNI's Central Tano Block is a relinquished part of what was previously the large Deepwater Tano exploration block, awarded to Tullow in 2006. The Jubilee field, discovered in the southeast part of this acreage by the Mahogany-1 well in 2007, was the first of several major stacked Cretaceous finds on the deep-water shelf slope made by Tullow in their original block. The field is reported to contain in excess of 1.2 billion bbls recoverable with current production at over 110,000 bopd.

The Jubilee discovery was followed between 2009 and 2011 by the Tweneboa, Enyenra and Ntomme fields (TEN field complex). The combined development is expected to recover between 400 and 500 MMbbls at a peak production rate of around 100,000 bopd by 2018.



Ghana - Location of original Blocks pre-Jubilee Discovery

The eastern part of the Jubilee field was subsequently defined in the adjacent West Cape Three Points Block, operated by Kosmos. The Teak and Akasa fields were discovered between 2008 and 2011 by Kosmos and turned out to be the northward updip (Campanian) and southwest down dip extensions of Jubilee's Turonian closure. The independent Odum field closure was also found to the east of Jubilee before compulsory part relinquishment of both Tullow and Kosmos' blocks in early 2013 under their respective licence terms.



Map showing West African Hydrocarbon Occurrence and Cretaceous Play Trend



Prior to these shelf slope discoveries, all of the pre-existing exploration - carried out between the late 1890s and 2002 - was limited to predominantly structural plays, initially onshore and later offshore on the shallow shelf, north of AMNI's shelf slope-edge acreage.

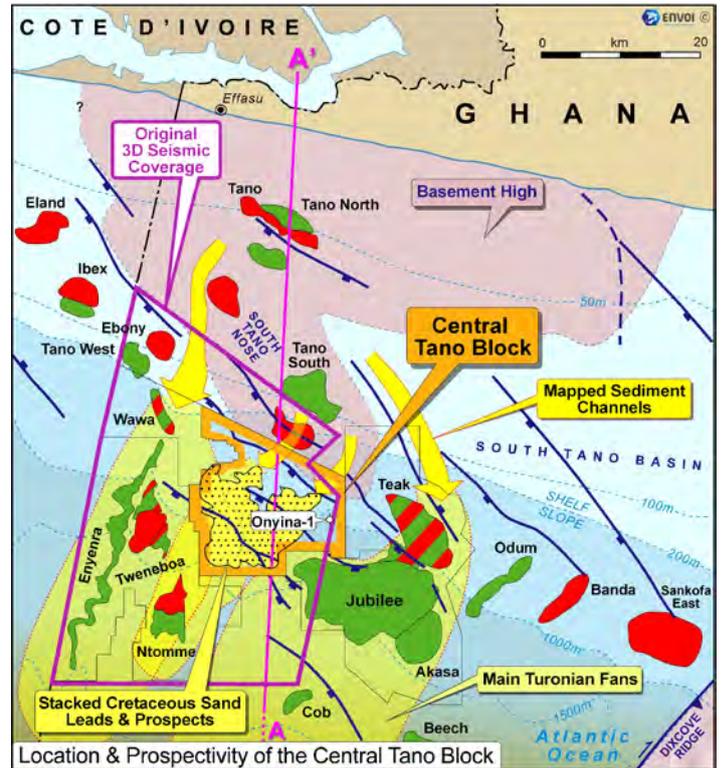
The earliest exploration onshore began in late 1896 when the first Ghana discovery was made. In 1970, the Salt Pond Devonian oil field discovery kicked off the offshore exploration effort. The Tano-1X oil and Cape Three Points 1X gas discoveries followed in Cretaceous structural traps. North and South Tano were subsequently found in 1978. ARCO drilled the first stratigraphic play and encountered shows in Cretaceous turbidites in their TP-1 well on the shelf edge just to the northwest of AMNI's acreage. The shelf fields are all modest in size compared to more recent discoveries which were facilitated by modern 3D seismic data, deeper water drilling capability and a coincidental increase in commodity price during the early 2000s.

Interestingly, the Ebony field, discovered in 2008 by Tullow, lies immediately updip of the TP-1 well which suggests these are an extension of the Cretaceous sediments that were developing in significantly thicker sequences off the shelf break.

In late 2013 AMNI applied for part of the relinquished acreage and were subsequently awarded the present day 279 km<sup>2</sup> CT Block in 2014.

The Onyina-1 well is the only well drilled in the acreage now covered by the new CT Block. It was drilled by Tullow in 2010 within part of their pre-existing block to test an Upper Campanian target, following the successful Upper Campanian Teak field discovery less than 10km to the southeast. The well encountered poor shows in good quality, low net-to-gross reservoir within a highly disturbed channel system. The Onyina fan overlies a thick high net-to-gross bedded Campanian system which truncates known carrier beds in the over pressured lower Campanian shales. Internal disturbed shales and the basal overpressured shales are now interpreted to have acted as migration barriers, explaining the well's failure to find commercial hydrocarbons. Post-well analysis suggests that isolation from charge is more likely than a breached seal.

As the entire CT Block is covered in high quality 3D seismic data, AMNI is currently completing its interpretation of

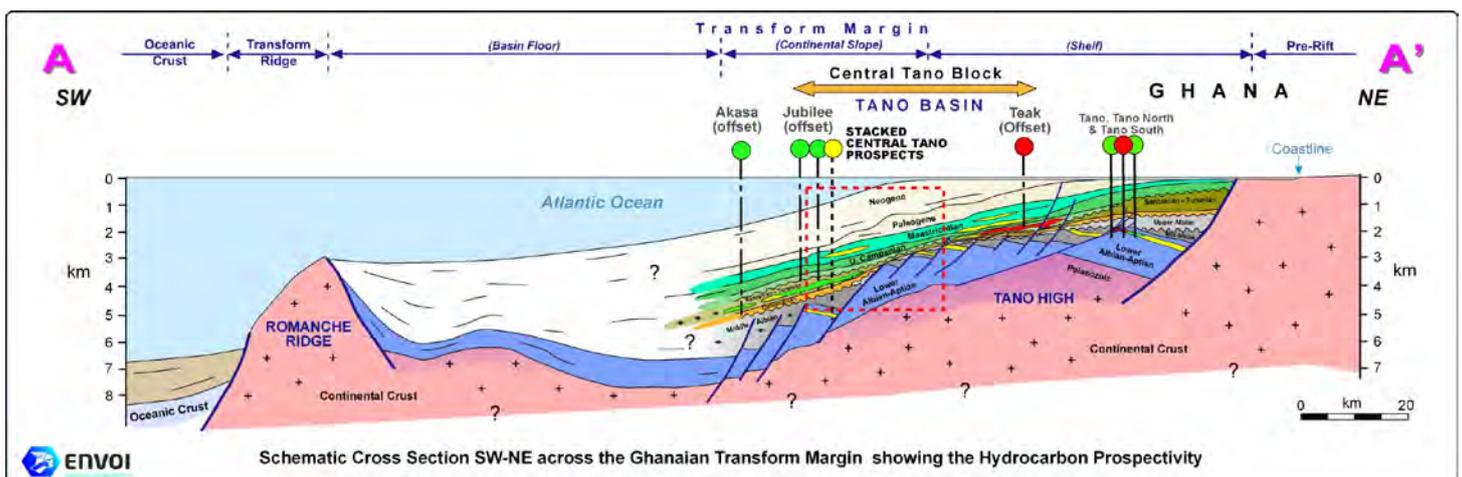


approximately 2,000 km<sup>2</sup> of both the PSTM and PSDM processed 3D, acquired between 2002 and 2008. The primary goal is to de-risk prospective well locations that can test multiple reservoir targets within the CT Block. Further data is being obtained, including regional 2D seismic data and additional well data, through data trades and purchases. Prospect generation, play definition, AVO analysis and petroleum system studies are all ongoing.

**Regional Geology, Evolution & Play Setting:**

The Tano Basin is one of a series of linear West African passive continental margin sub-basins running parallel to, and locally overlapping, the West African coastline. Situated approximately 60 km from the Ghanaian coast, it straddles the shelf and slope with water depths ranging from 80 to 3,000 m.

The region's main hydrocarbon plays evolved from the breakup of Gondwana during the Early Cretaceous (125 Ma), causing the South American plate to separate from the African plate. This generated transtensional and





transpressional rift basins along the South Atlantic Equatorial Margin. The resulting rifted margin developed continental lakes and fluvial systems which were then infilled with siliciclastic and carbonate rocks. The initial rift phase was followed by a transitional phase of subsidence in the Late Aptian to Early Albian (110 Ma).



Erosion of the uplifted rift flanks along the continental margin resulted in deposition of deltaic to shallow marine sands on the platform. Early stages of oceanic crust formation and seawater ingression caused rapid deepening of the depositional environment. This also allowed local accumulation of late Aptian evaporites in some of the equivalent basins on the opposite side of the rift system and now evident across the Atlantic, such as the Ceará Basin which developed offshore Brazil.

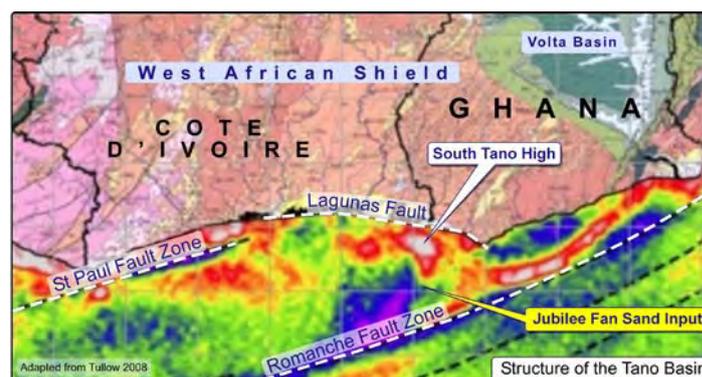
After continental breakup and total separation of the plates by inception of oceanic crust in the Late Albian (100 Ma), the deepening of the sedimentary environment resulted in an oceanic basin influenced by worldwide sea level rises and falls. During the Late Albian to Turonian (Late Cretaceous), organic-rich shales and marls were deposited in maximum sea level-rising episodes that gave origin to the global Oceanic Anoxic Events. By Late Santonian to Early Campanian (85 Ma) the divergent margins were totally separated by the active spreading centres. Previous sedimentary successions were deformed by extensional and compressional forces.

Episodes of sea level falls gave rise to the development of erosional incisions of the deltaic and coastal sand deposits on the platform and in shallow marine environments. The steep continental slope favoured the growth of canyons, which acted as pathways for sand-rich turbidite currents and hyperpycnal flows into deep-water marine environments during sea level low-stands. These sands were deposited as amalgamated channel-lobe reservoirs, as found in the Jubilee field. Similar deposits have also been identified along the conjugate margin. For example, the Zaedys discovery, near the French Guiana/Amazon Cone area.

During the deposition of these turbidites, sea bottom topography played a significant role in creating important sedimentary facies variations. These are characterised by onlap and pinch-out seismic features, especially when associated with structural highs in the transition from distal rift border to oceanic crust. These have successfully been tested where the traps contain sand-prone sequences along the entire West Africa margin, although the reservoir sequences are particularly well developed in the Tano Basin.

The Tano Basin is positioned between the Romanche and St. Paul transform fault zones of the West African Transform margin. It is uniquely located down-dip of the South Tano High that created a depositional sink during the Cretaceous into which thick clastic sediments were preferentially deposited. Thinner areas on the flanks, where the sands may not have been deposited, help form traps.

The Jubilee fan itself drapes over the South Tano High, directly on top of source rock, and focuses charge up-dip migrating from the large oil generating kitchen to the south (ref: blue and mauve area in gravity display below). The stratigraphic sections of particular interest are the continental-to-marine half graben, syn-rift fill intervals and the deep-water prograding clastics of the post-rift sag section. The Mid-to-Late Albian section is productive on trend from fluvial to fan sand sequences sourced from an adjacent or down dip restricted marginal marine environment and/or the overlying onlapping transgressive deep marine shales of the sag/post-rift Upper Albian or Cenomanian. These source sections and the lower Turonian/Cenomanian shales, are the primary sources for the overlying post-rift Cenomanian, Turonian and Campanian fields.



Syn-rift production is dominated by rotated eroded footwall blocks in structural trapping positions or truncations. Post-rift production is predominantly stratigraphic trapping in nature but strongly influenced by structural migration focusing. The CT Block is positioned on the southern part of the pronounced South Tano High, where the prospective Jubilee sequences appear to extend into the AMNI block from the southeast. The TEN field facies are also now thought to extend into the CT Block from the southwest.

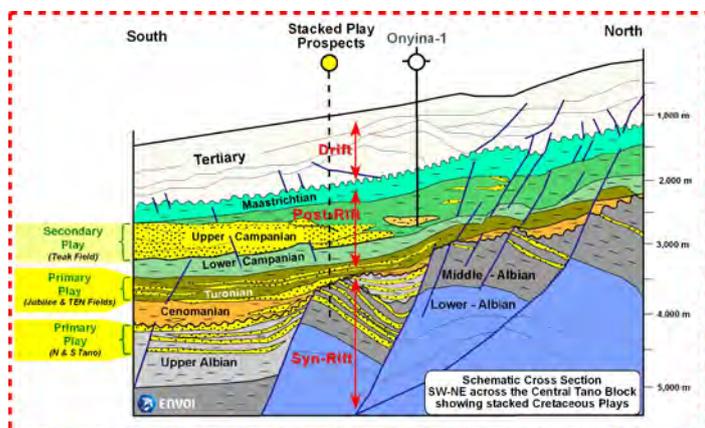
**Central Tano Prospectivity:** As a result of its position in the heart of the most productive area of the Tano Basin, AMNI's acreage is considered highly prospective with three different plays being evaluated. In order of low to higher risk these can be summarised:

- I. **Middle Cretaceous:** Turonian & Cenomanian fan systems (*analogous to the Jubilee field*)
- II. **Lower Cretaceous:** Albian syn-rift clastics in rotated fault blocks
- III. **Upper Cretaceous:** Campanian fan systems

A total of 6 prospects and 11 leads have so far been mapped by AMNI following the comprehensive re-



interpretation of the pre-existing 3D data sets and attribute volumes in the Central Tano area. These offer stacked potential in overlying plays that have a total combined mean recoverable resource potential estimated to be in excess of 1.2 Bboe. The six individual prospects range in resource potential between 90 and 300+ MMboe each.



AMNI's technical evaluation of the CT Block has identified well locations with stacked resource potential in the Mid Albian, Upper Albian, Cenomanian, Turonian and Campanian sections. Follow up prospects and leads within each play type offer significant upside to the drillable prospects already identified.

Direct Hydrocarbon Indicator (DHI) and Amplitude Verses Offset (AVO) analysis are being matured over these opportunities and integrated into targeting and chance factor analysis. Apparent hydrocarbon flags are numerous across the acreage from the top of the Albian up through the top of the Cretaceous. Relatively high impedance reservoir sands make some play opportunities dim out when charged with oil, resulting in poorly defined limits to some identified targets.

AMNI believes that the proximal Jubilee and TEN fields have analogues in its acreage albeit on a smaller, but nonetheless commercially material, scale located only 15km from both the TEN and Jubilee developments.

**Fiscal & Economic:** Under AMNI's PSC terms the government take, based on a royalty and tax system, is between 40% and 45%. While the potential for sizeable, stand-alone field developments exists, even modest new discoveries will benefit from proximity to nearby infrastructure and much improve their economic viability.

**Obligations & Work Programme:** AMNI's Central Tano Block License comprises a 7 year term (including a 1 year extension) which carries commitments and work obligations in three phases of exploration. The initial Phase 1 requires the drilling of two new exploration wells by 21<sup>st</sup> March 2017. The wells, estimated likely to cost US\$ 50 million (dry hole) each, must reach a depth of 4,400m or 300m into the lower Cretaceous and 4,000m or 150m into the primary objective. The license can subsequently be extended for two additional phases of 1½ years each with one additional well per period.

There are no relinquishments required across the license term. Production permits are granted based on appropriate plans being submitted. AMNI's government partner, GNPC, is carried until production for 10%, but the license terms include appropriate cost recovery provisions.

AMNI would like to have the initial commitment well drilled in late 2016 to allow sufficient time to properly evaluate the results before the second exploration well location is finalized, prior to the exploration period expiring in March 2017.

**The Opportunity:** AMNI is looking for a strategic partner with proven deep water operating experience to join them and earn a material equity interest in return for a contribution to past costs and the funding of the two exploration wells, each estimated to cost US\$ 50 million.

**Additional Information:** Envoi is currently preparing a management presentation on the opportunity which will be made available to seriously interested parties that meet Ghanaian qualification requirements and sign a Confidentiality Agreement (CA). Such parties will subsequently be invited for a presentation and physical data room review of the project in either of AMNI's Houston or London offices. Available data will include 3D and 2D seismic data (time and depth volumes and derivative products), well data, plus appropriate commercial and overview materials. Seismic data will be on an SMT platform.

All expressions of interest and requests for more information, including a request for authorisation to receive the CA for execution prior to access to the data room, should be made through Envoi.

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