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Specialist A&D Services to the international  
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***International Pavilion***

***(AAPG - Salt Lake City)***

# Project Locator

(as @ May 2018)



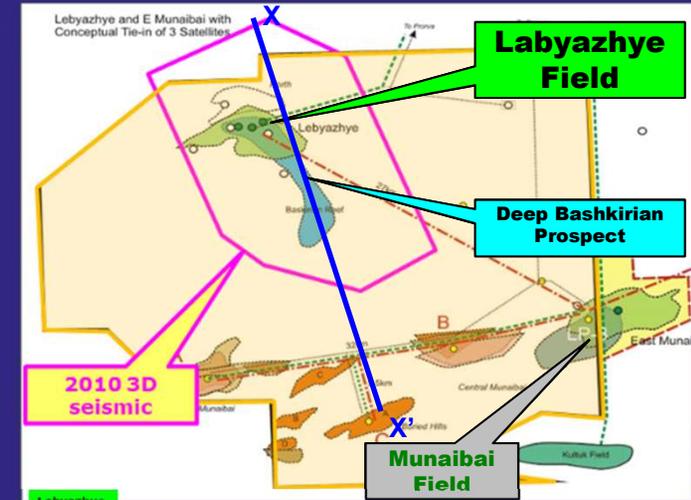
**Key :**

- Active Projects
- Projects Summarised in Presentation

# 1. Onshore Western Kazakhstan

## Yuzhnaya Block – Mangystau Producing Province

Development of existing field with large Exploration Upside



### Lucent Petroleum (100% Interest & Operator)

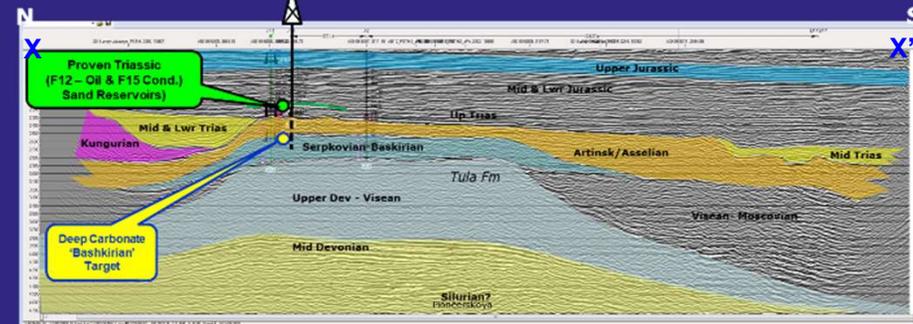
- Region's hydrocarbon potential proven by numerous fields including 6 billion bbl Tengiz field immediately to north of Yuzhnaya Acreage.
- Opportunity to participate in Development & Deep exploration of Labyazhye field in Lucent's Yuzhnaya Block
- Development of other Munaibai field on Block already funded and in process of development drilling (started Q3 ~ 2017)

### Prospectivity

- Initial development of Labyazhye field's existing 27 MMboe Triassic reserves to be exploited by initial re-entry of existing 4 wells (2018)
- Two subsequent horizontal wells through Triassic during 2018/19
- Deepening of L-14X well to penetrate large undrilled Carboniferous Reef Play potential with Est. 150+ MMboe additional resource potential.

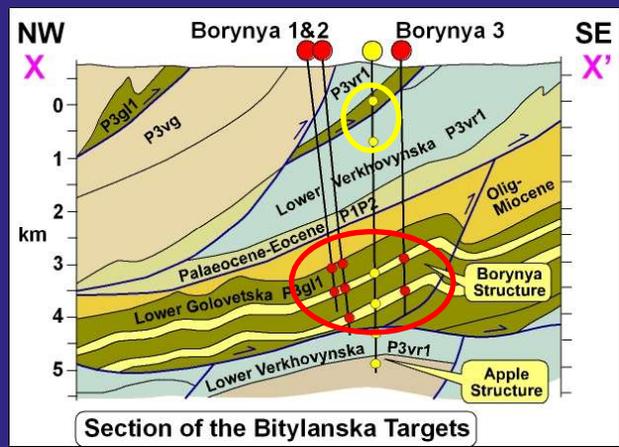
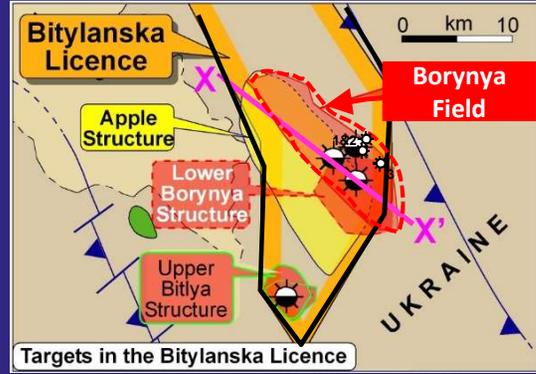
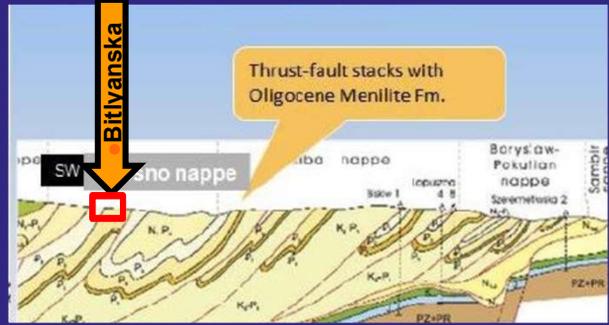
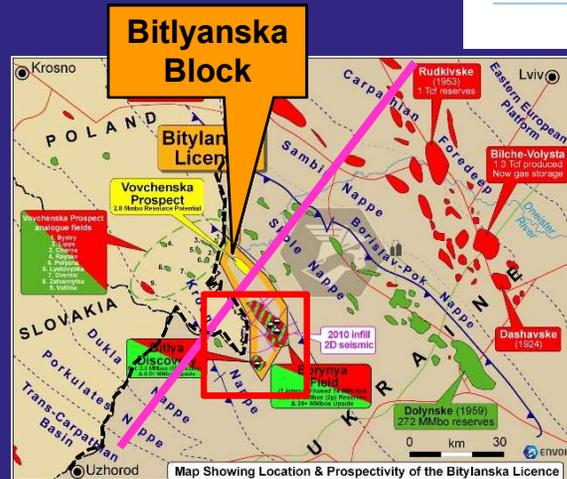
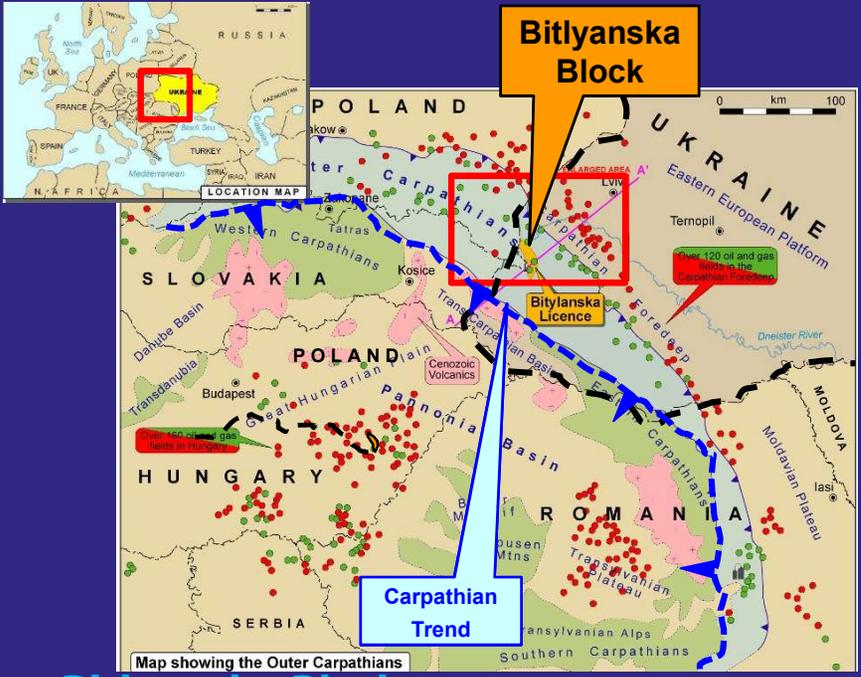
### Opportunity

- Earn up to 50% equity by funding the three planned phases of Labyazhye field development & deep exploration ~ Est. US\$ 24.5 million
- Phase II & III development funded by Phase I re-entry



# 2. Western Ukraine

## Bitlyanska Licence (Carpathians)



- **Bitlyanska Block** Cadogan 95% + Operator

- Appraisal / Development of existing discovery in W. Ukraine

- **Prospectivity**

- Stacked gas bearing Tertiary pay sands defined by three Borynya wells between 2,000 - 5,000+ m
    - Early Bor-2 well believed to have blown out and later tested one interval 14mmcf/d.
    - Bor-3 drilled by Cadogan hit high pressures beyond rig safety after short 4.5 mmcf/d flow on test
    - Est. 2P = 0.8 Mmboe + 3P = 1.2 Mmboe + P50 Contingent = 12.5 MMboe
  - Also, Bitlyanska Field (Est. 1.4+ MMboe Total Resource potential)
  - Shallow Vovchenska Prospect (twin of depleted field) Est. 18+ MMboe total resource potential

- **Work Programme:**

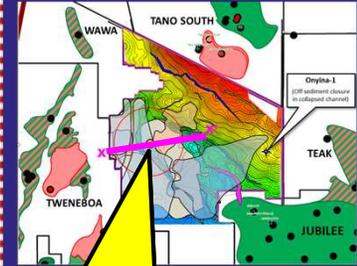
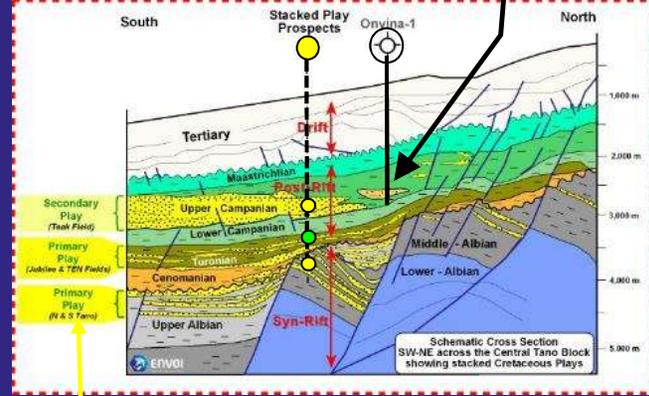
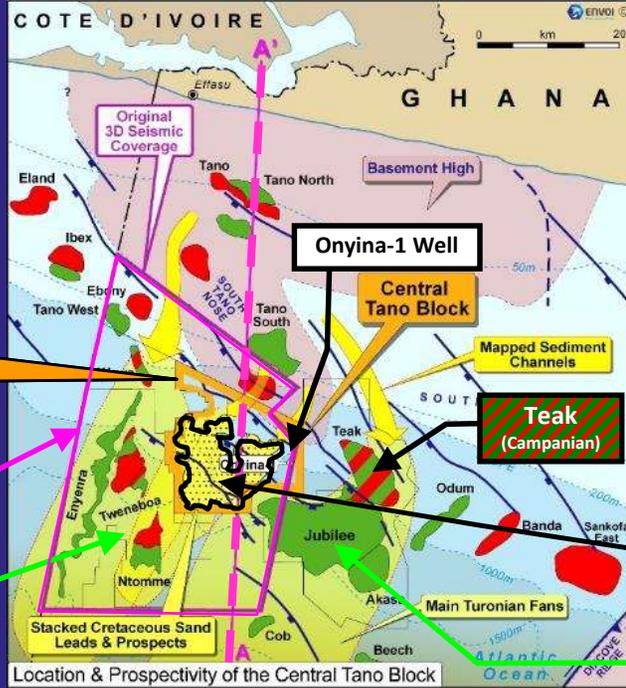
- Drill Shallow well & flow test prospect twinned to depleted field (2018)
  - Re-enter & test Bor-3 well with appropriately equipped Rig
  - Drilled new Borynya appraisal well

- **Terms:** Earn-in by funding planned exploration & appraisal drilling programme before Licence expires end 2019 (Combined US\$ 11 million gross)

- Recent reduction in Government royalties from 29% to 12% makes very positive impact on economics & with pipeline only 15 km away

# 3. Offshore Ghana

Central Tano Block (Transform Margin Slope)



**Central Tano Block**

**3D Seismic**

**TEN Field Complex**

**Multiple Stacked Pay Prospects**

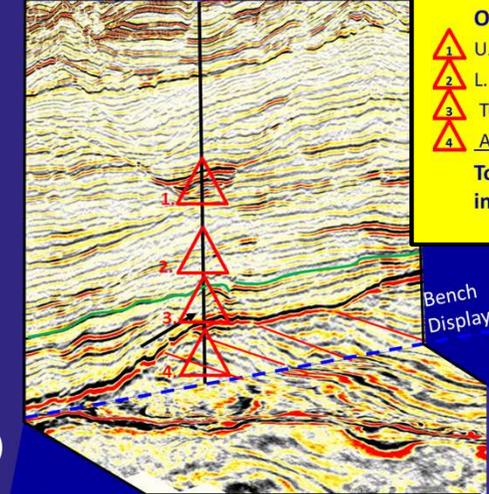
**Jubilee**

**Proposed South Tano Well Location**

**ONE WELL – 4 TARGETS**

- 1 U. Campanian – 760 MMboe
- 2 L. Campanian – 250 MMboe
- 3 Turonian – 323 MMboe
- 4 Albian – 937 MMboe

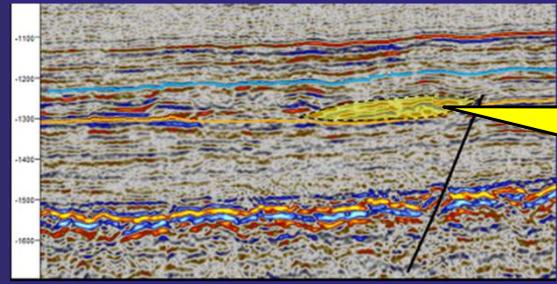
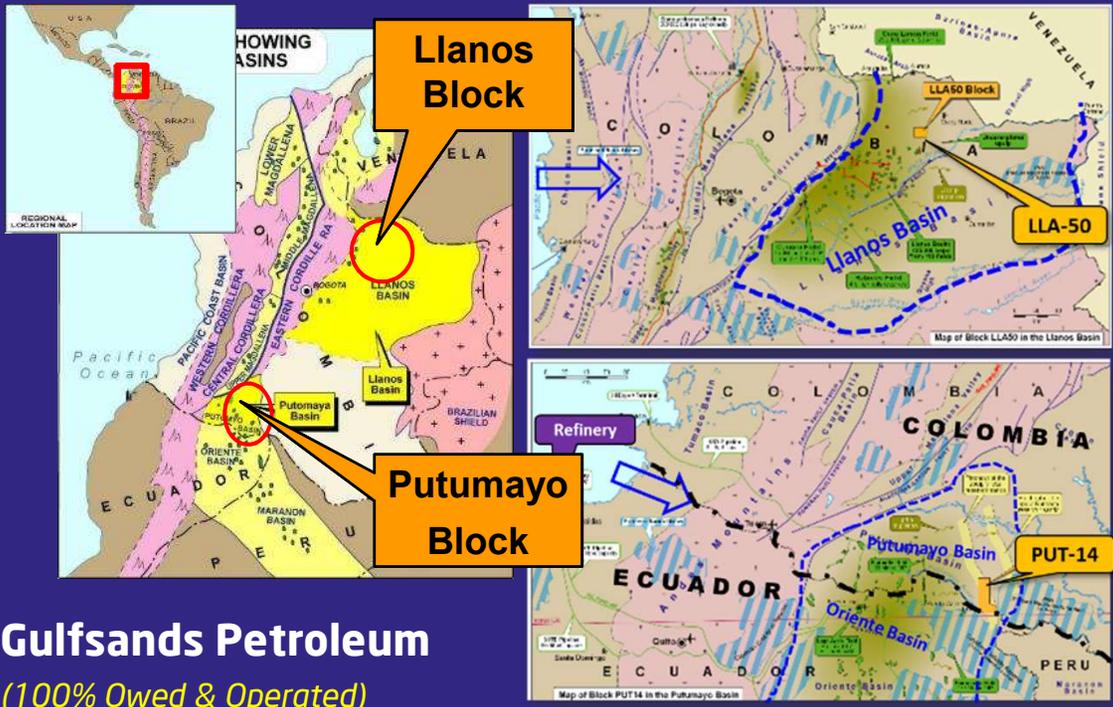
**Total Mean 2,270 MMboe in Place Resource**



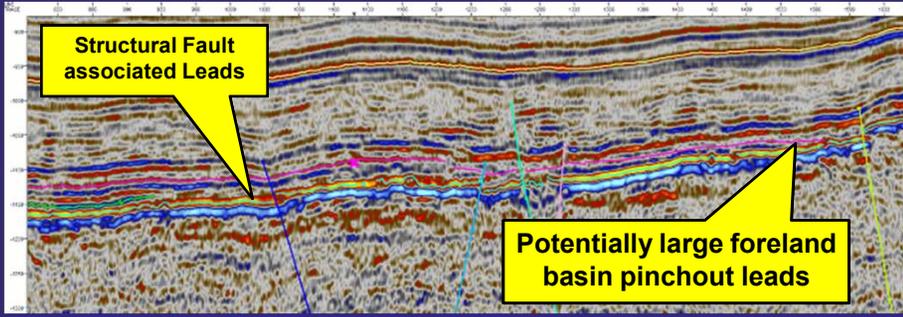
- **Central Block AMNI 90% + Operator (GNPC 10% Partner)**
  - Acquired highly prospective 279 km<sup>2</sup> Central Tano Block on trend between large Cretaceous Jubilee, Teak & TEN Field complex after statutory Tullow relinquishment
  - Awarded 2014: 7 year Term in 3 Exploration Phases (Phase I requires 2 x exploration wells)
- **Prospectivity**
  - Cretaceous petroleum play system on transform margin slope proven by existing fields updip of massive charge & fetch area and unique reservoir development associated with Tano High. Only well in block (Onyina-1) now known to have tested a collapsed channel preventing migration
  - Stacked Play Target Potential: Primary stratigraphic Turonian (proven in Jubilee & TEN Fields) & Campanian (Teak Field) Plays, with additional structural Albian Play proven back on shelf with large undrilled (rotated fault block) prospects mapped in Central Tano Block
  - **6 drillable prospects (each capable of est. 90 - 400+ MMboe recoverable) + 1 1 additional leads also mapped to date.**
  - **Planned 1st Well will test 4 stacked objectives (Est. Combined 2.27+ Bn bbls In Place Resource)**
- **Work Programme:** Drill 1st exploration well in Q4 ~ 2018 (Est. US\$ 30 Million) – *Regardless of Farmout*
- **Terms:** Earn part of AMNI's 90% interest by funding 2 well drilling programme (est. total Gross cost US\$ ~60 million) + contribution to past costs

# 4. Colombia

Two Blocks - Llanos & Putumayo Basins



Structural Tertiary Leads with fault associated leads up-dip of Foreland Analogues



Structural Fault associated Leads

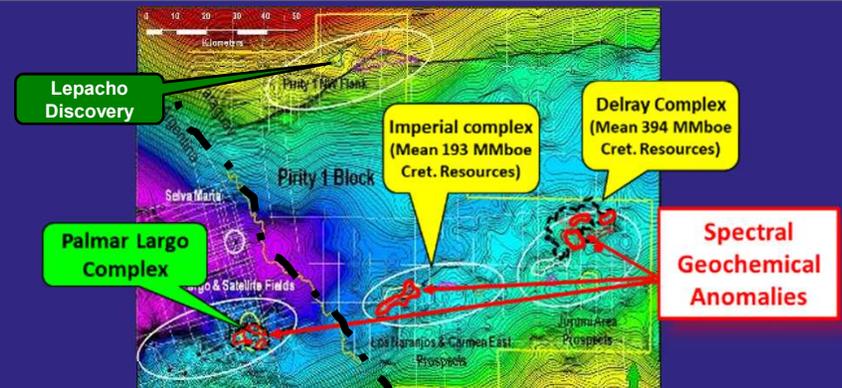
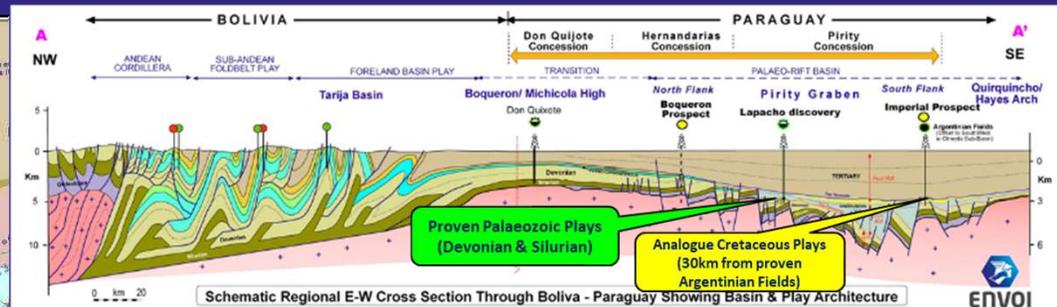
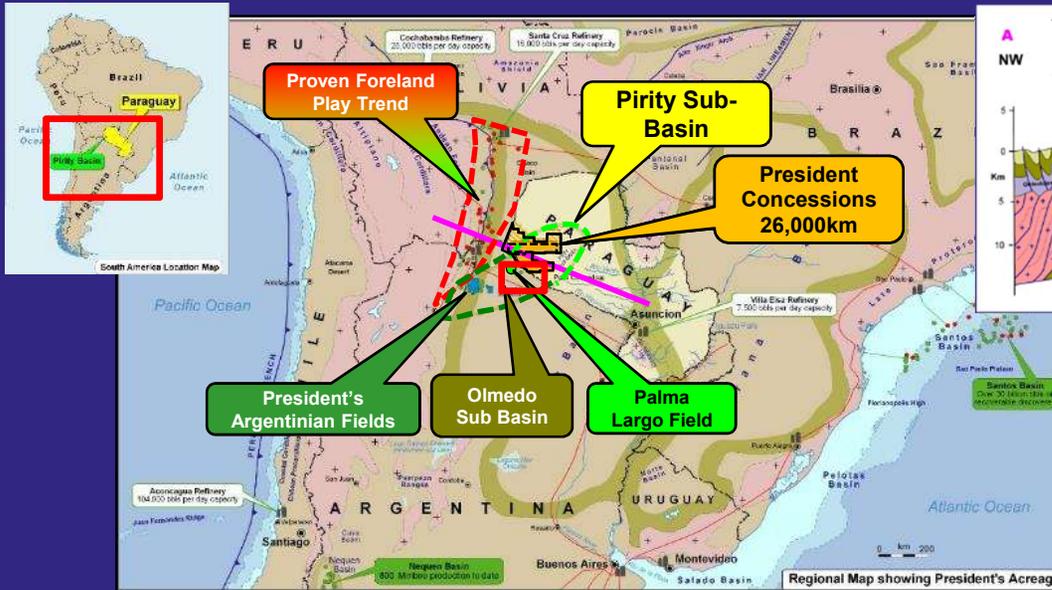
Potentially large foreland basin pinchout leads

**GulfSands Petroleum**  
(100% Owned & Operated)

- Opportunities for early entry & operatorship in two highly prospective Concessions up-dip and on trend with existing fields in proven-producing, prolific foreland basin plays.
- **Llanos Basin Block:**
  - Potentially stacked Tertiary sand play potential in under explored foreland margin play, on-strike with discoveries & up-dip of producing fields
  - Structural leads identified on good quality 1980's 2D seismic (needs infill data and modern processing to upgrade leads to drillable prospects)
- **Putumayo Basin Block:**
  - Stacked Cretaceous sand play potential undrilled on foreland basin margin acreage up-dip & on-strike with proven - producing fields west in Colombia & south in Ecuador
  - Sparse but good quality 2D seismic data shows potential for both subtle structural leads and large stratigraphic pinch-out play potential
- **Opportunity**
  - PUT-14 and LLA-50 have estimated base case STOIIPs of 217 MMbo and 46 MMbo respectively.
  - Excellent fiscal terms with low X factors generate base case NPV10s of c.US\$ 385 million (PUT-14) & c.US\$ 150-200 million (LLA-50) respectively.
  - Earn majority interest & operatorship by funding infill 2D seismic surveys and one exploration well in each block (Est. Gross costs US\$ 34 million) during remaining Phase I exploration terms: PUT-14 reset to expire 2021 & LLA-50 extension expected beyond early 2018

# 5. Paraguay

## Pirity Basin



### President Energy (100% Owned & Operated)

#### Overview:

- Opportunity to participate in 4 Concessions (26,000 km<sup>2</sup>) basin controlling acreage including discovery, appraisal, exploitation & forward exploration of entire prospective area of Paraguayan Pirity Sub Basin & extension of proven Argentinian (Olmedo Sub Basin).
- Proven Palaeozoic & Cretaceous Play fairways identified by President's G&G with recent geochem study support, including Lapacho discovery & existing fields on-trend in Argentina including Parma Largo (only 30km from nearest prospect in Paraguay)
- Currently mapped prospects & leads on offer combined total 10+ Tcf Gas potential in Palaeozoic & 500+ MMbo in Cretaceous plays.

#### Play Potential:

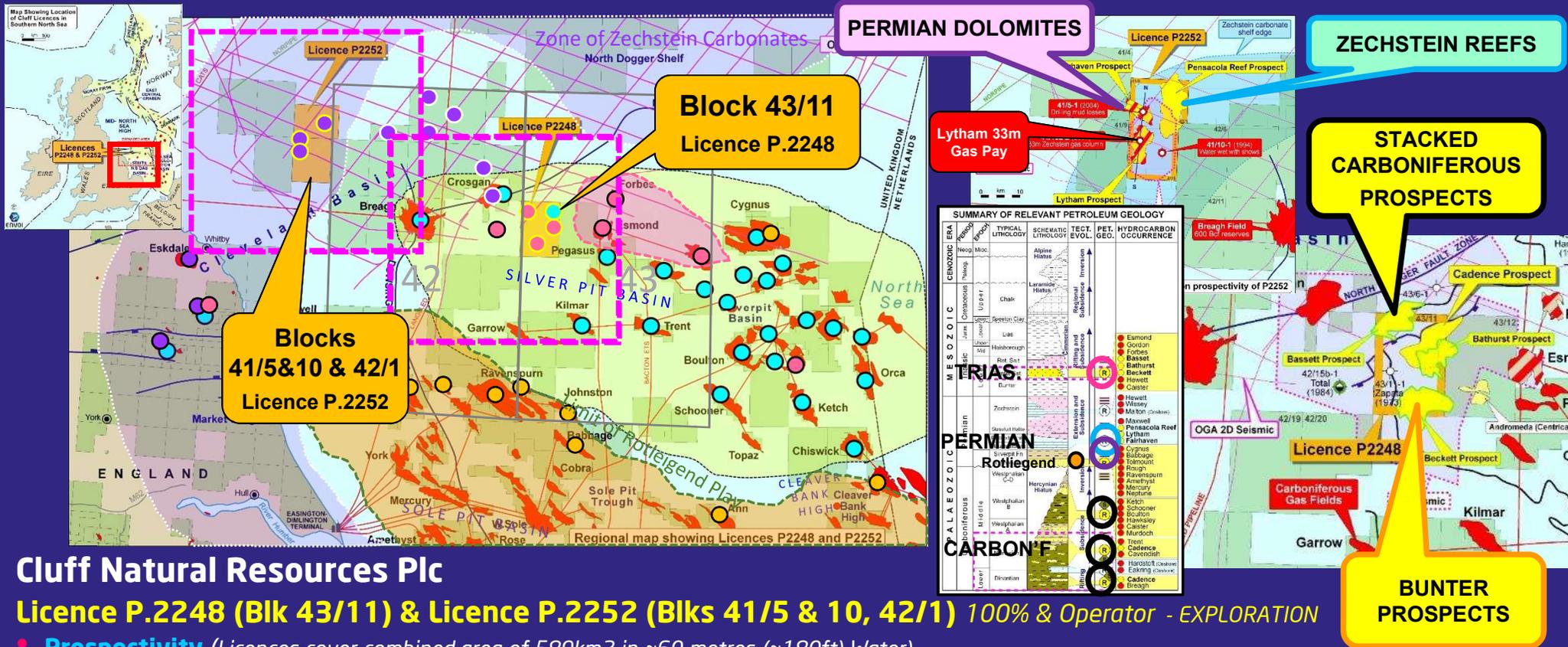
- PALAEOZOIC PLAY: Lepacho Discovery well proved gas & oil in tight but fractured Devonian & Silurian reservoirs that now requires proof of deliverability with re-drill and testing to unlock huge reserves
- CRETACEOUS PLAY: undrilled extension of quality Cretaceous play defined by new 3D & coincidental geochemical anomalies

#### Opportunity

- Minimum 2 wells to test prime 'look-a-like' Cretaceous analogue prospect and a Palaeozoic well to follow-up the Lapacho discovery before Oct 2018 with a view to converting exploration to exploitation Licences.
- Earn up to 50% interest in Paraguayan portfolio by funding, as a minimum, the planned Cretaceous & Palaeozoic two well drilling programme (Est. combined costs US\$ 25 million) which is sub ground floor based on US\$ 100 million past costs

# 6. Offshore UK - Southern Gas Basin

Licences. 2248 & P.2252



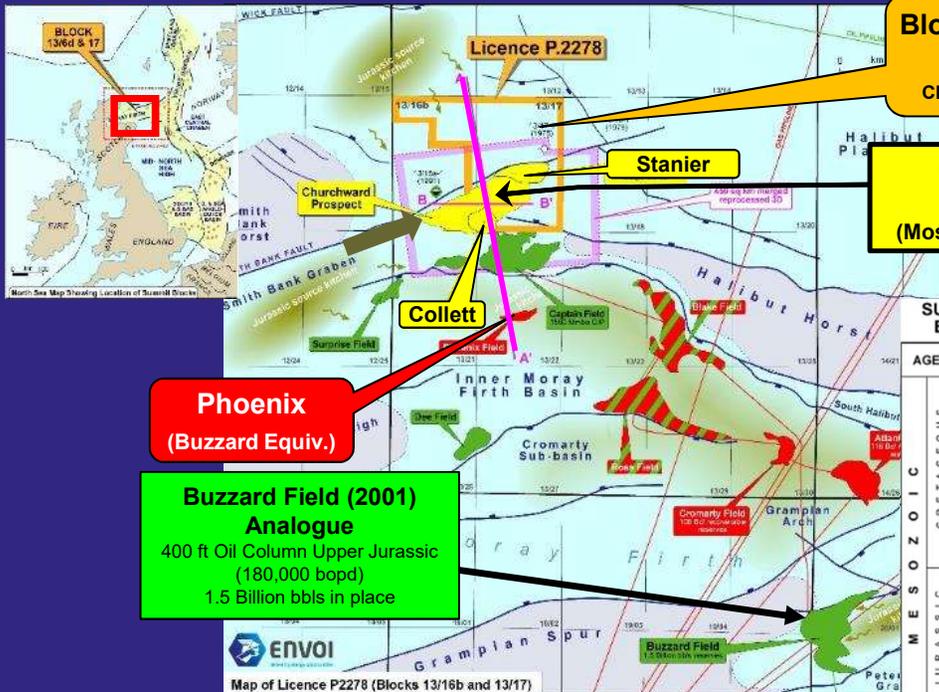
## Cluff Natural Resources Plc

**Licence P.2248 (Blk 43/11) & Licence P.2252 (Blks 41/5 & 10, 42/1) 100% & Operator - EXPLORATION**

- Prospectivity** (Licences cover combined area of 589km<sup>2</sup> in ~60 metres (~180ft) Water)
  - Total combined resource potential Est.2.4 Tcf (P50) mapped in three plays with new prospects unlocked by reprocessed 3D between proven fields
  - P2252** - 3 X prospects defined by 3D in Zechstein Reef play
    - Pensacola prospect already penetrated by well & encountered 300ft fractured dolomite pay but never tested due to near total fluid losses
    - Est. 168 Bcf Resource with NPV of £ 690 million as defined by independent (Xodus) CPR
  - P2248** - Primary Stacked Carboniferous Sand prospects with secondary Triassic Bunter Prospects)
    - Candence is largest Carboniferous Prospect with Est. P50 resource potential of 929 Bcf recoverable
    - Basset is largest of three Bunter prospects, which has Est.128 Bcf P50 resource potential exhibiting amplitude anomalies.
- Work Programme:**
  - Existing Licence Extensions to end October 2018 with 'Drill or Drop' required in follow-on Licence Terms (infill seismic also proposed in P2248)
- Terms**
  - Earn material interest by commitment to fund one exploration well in each follow-on Licence Period (Est £ 6 million in P2248 & £ 8-10 million in P2252).

# 7. Offshore UK - Inner Moray Firth

P. 2278 (Blocks 13/16b & 17)

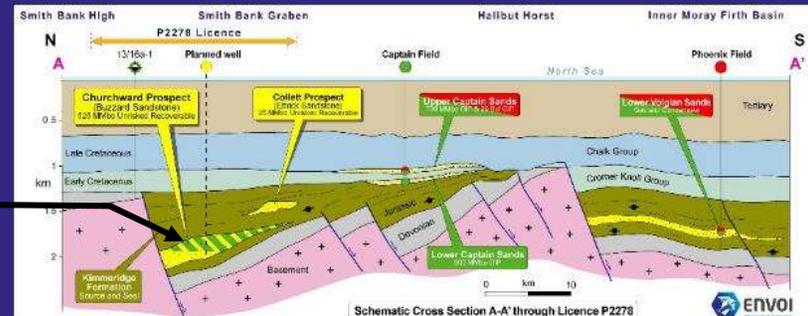


**Block 13/16b & 17**  
Licence P.2278  
Churchward Prospect

**Churchward Prospect**  
(Most Likely 550 MMbbl)

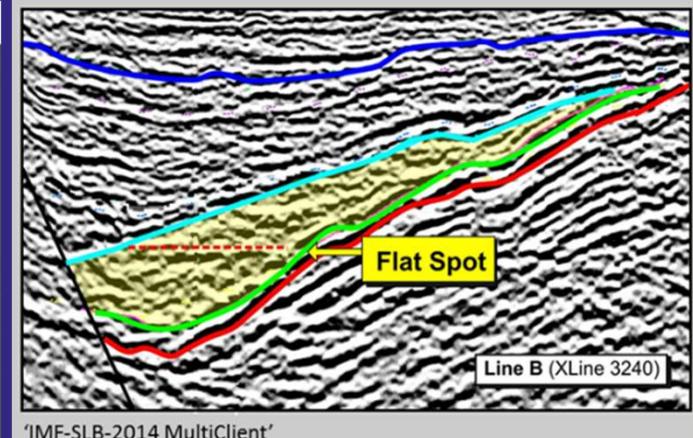
**Phoenix**  
(Buzzard Equiv.)

**Buzzard Field (2001) Analogue**  
400 ft Oil Column Upper Jurassic  
(180,000 bopd)  
1.5 Billion bbls in place



**SUMMARY OF THE PETROLEUM GEOLOGY OF BLOCKS 13/16b & 17, SMITHBANK GRABEN**

AGE	FORMATION GROUP	SCHEMATIC LITHOLOGY	PETROLEUM GEOLOGY	HYDROCARBON OCCURRENCE
CRETACEOUS	UPPER CHALK GROUP	[Diagram]		
	RODNY SODA	[Diagram]	[R]	CAPTAIN FIELD WEST WICK FIELD SURPRISE FIELD
	LOWER VALHALL	[Diagram]	[R]	STANIER PROSPECT
JURASSIC	UPPER KIMMERIDGE	[Diagram]	[R]	COLLETT PROSPECT
	HEATHER	[Diagram]	[R]	CHURCHWARD PROSPECT PHOENIX FIELD BUZZARD FIELD
	MIDDLE	[Diagram]	[R]	



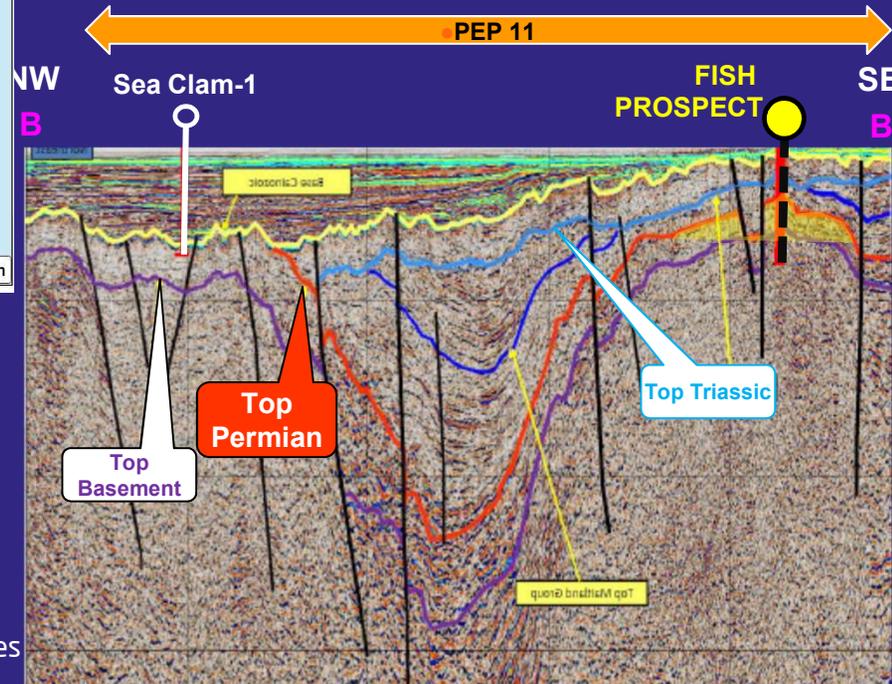
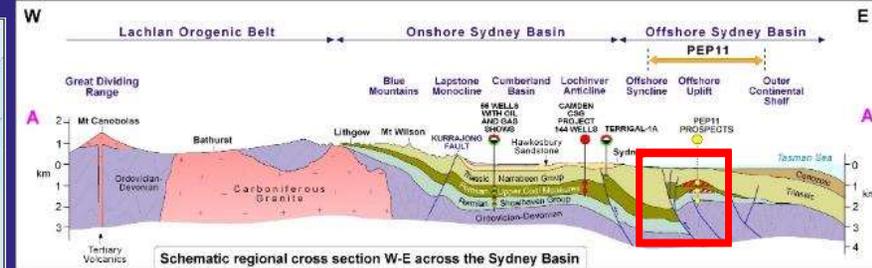
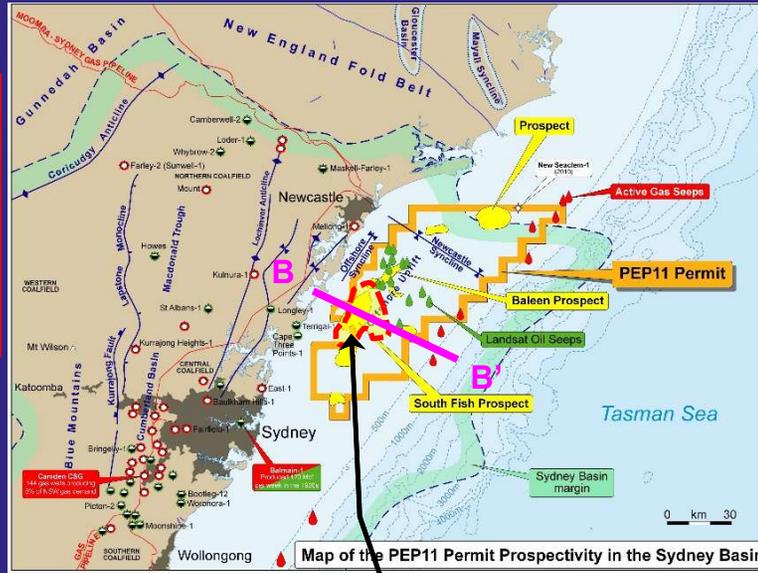
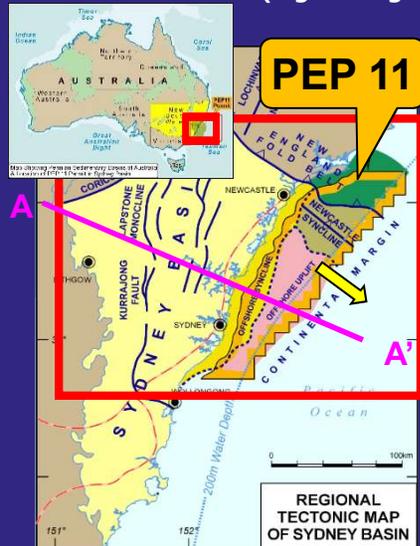
**Azinor Catalyst Ltd (c/o Aimwell Limited)**

100% & Operator - EXPLORATION

- Prospectivity**
  - Undrilled margin of graben (proven by existing discoveries) containing 2 Jurassic & 1 Cretaceous prospects defined on first ever combined reprocessed 3D datasets
  - Primary Churchward Prospect:** Very Large Jurassic closure and 'look-a-like' to producing Buzzard field in analogue graben to south
  - Most Likely 525+ MMbbl Buzzard Sst target resource potential (2+ Billion Upside potential)
  - Top and bottom closure anomalies on seismic including possible 'flat spot' which is coincident with possible fault related spill point
  - Follow-on: Collett Prospect (Ettrick Sst) ~ 25 - 110 MMbbl + Stanier Prospect (Scapa-Punt Sst) ~ 140 - 1,000+ MMbbl
- Work Programme:**
  - Exploration well in 2018 (est. cost £9 million dry hole)
- Terms**
  - Earn material interest by funding Churchward exploration well

# 8. Offshore SE Australia

## PEP 11 (Sydney Basin)



### Advent Energy Limited

85% Operator + 15% Bounty Oil

#### Prospectivity

- Totally undrilled offshore Permian Play where palaeo-deposition model shows thicker sands developed compared to stratigraphy proven onshore
- 10+ Leads defined on existing 2D seismic
- Primary FISH Prospect est. 2.6 TCF resource potential (~472 MMbor equiv.)
- Prospects all coincident with surface seeps and sea bed pock-marks with gas anomalies on seismic
- Excellent economic value potential due to very energy hungry East Coast gas market and block just off coast to Sydney (~ US\$ 13 / mcf gas price)

#### Work Programme:

- 200 km 2D Infill seismic programme in progress to fulfil current 1st Exploration Term
- 2<sup>nd</sup> Exploration Term (4 years): 500km<sup>2</sup> 3D broadband seismic survey + Exploration well before August 2019 (est. cost £9 million dry hole)

#### Terms

- Earn material interest by funding 2<sup>nd</sup> Term 3D seismic + Exploration well (Combined Est. US\$ 25 million cost).

**Fish Prospect**  
2.6 TCF ~ (470+ MMboe)

