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Argentina Offshore Round 1

Houston - November 2018

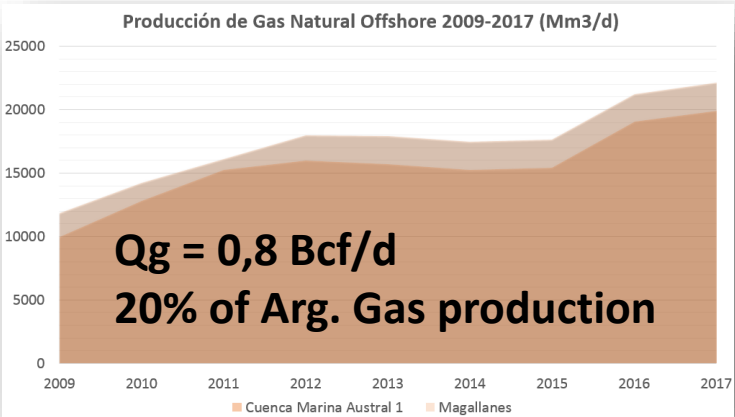
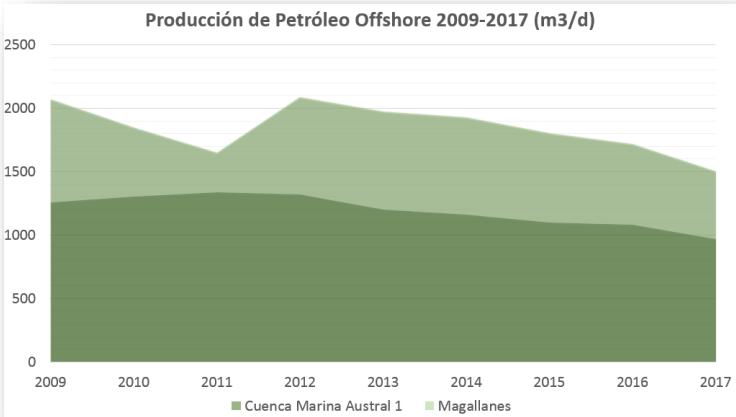
Main Laws

- 1967: Law 17,319 creates the legal framework for the Oil & Gas Industry
- 2007: Law 26,197 transfers H/C ownership to Provinces for Onshore & Offshore 12 miles
- 2014: Law 27,007 establishes framework mainly for Unconventionals

Legal Framework

- Concession Regime (Royalties + Income tax)
- Subsurface resources are Province / Federal Government property (Offshore >12 miles)
- Exploration Permits & Exploitation Concessions granted on income tax (30%-25% Income Tax) + royalty regime (5 to 12 %)
- Access to acreage through bid rounds or farm-in agreements with existing rightsholders
- Federal Government sets H/C policies, controls marketing activities and inter-province transport
- Provinces in charge of onshore supervision and control
- Minimum environmental regulations set by Federal Government and specific legislation set by Provinces

Argentina Offshore – General Review



Cuenca	Pozos Exploratorios y Delineación	Período
Salado	4	1969 - 1994
Colorado	18	1969 - 1997
Rawson	1	1990
Golfo San Jorge	30	1970 - 2009
San Julián	1	1994
Malvinas	20	1979-2004
Austral	83	1980-2018
Total	157	1969-2018

- OFFSHORE E&P HIGHLIGHTS**
- Last exploration well drilled
- Northern Margin Wells
- Wells with WD > 100 m.
- 3D Seismic
- Current Exploration Permits

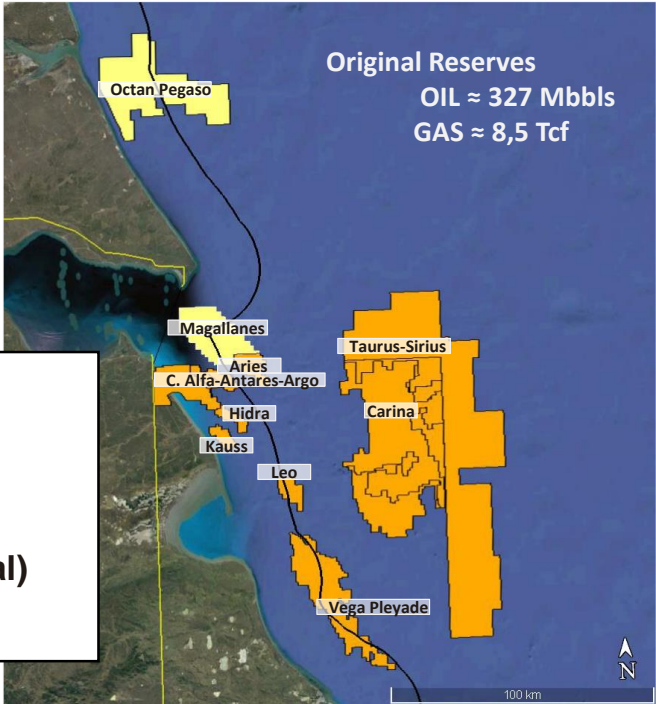
Malvinas-1 2011 YPF

22 Last one 1997- all <110m wd

3 All in the Malvinas Basin

only 15000 Km2 (10000 km2 in Austral)

1 + 1 under renegotiation

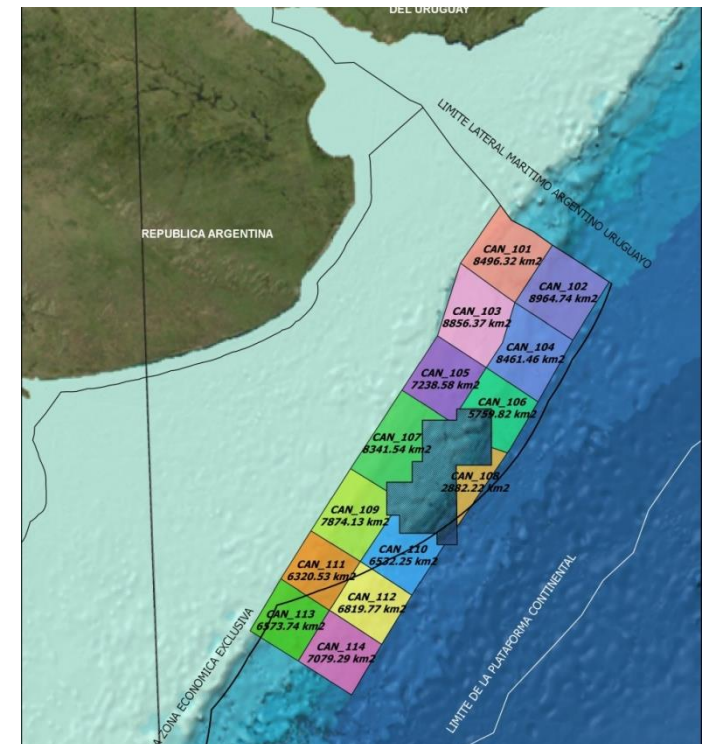


Argentina Offshore Context:

- Offshore Cuenca Austral produces 800 MMscfd - 20% of the gas of Argentina
- Very large under explored area (200000 Km2 in Round 1 only)
- Very limited exploration activity in last 20 years (6000 Km2 of 3D outside Concessions and no wells on >500 m. WD, last well in 2011)
- Medium to high risk (Size of Structures in Malvinas and Austral / Source Rock in Argentina)
- Limited infrastructure & long distances
- Large distances to developed areas
- Developed local oil & gas industry (increasing with Vaca Muerta)
- Competitive legal framework

Main Goal of the Round:

Increase awareness of Argentine Offshore through real investments in Exploration, carried out by companies with the technical and financial capability to fulfil the objectives.

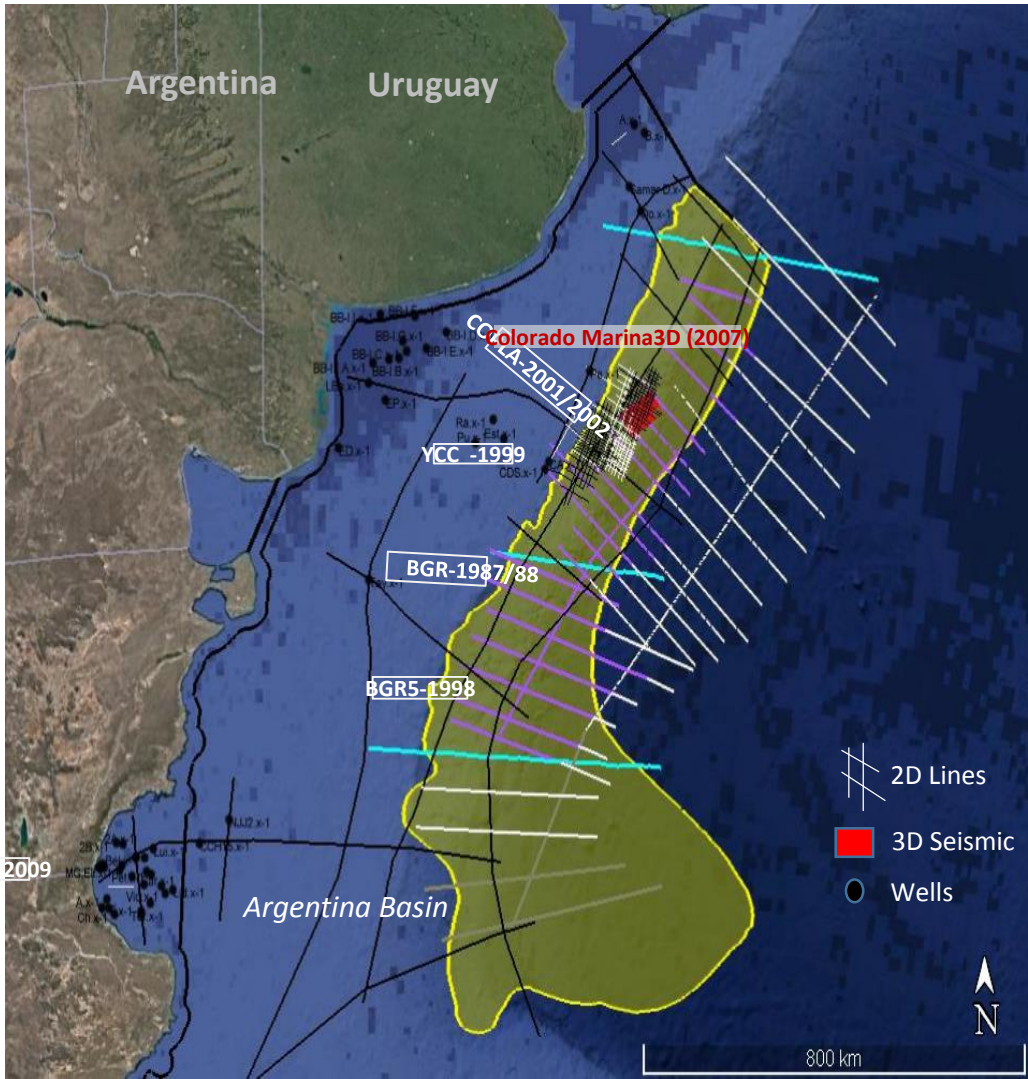
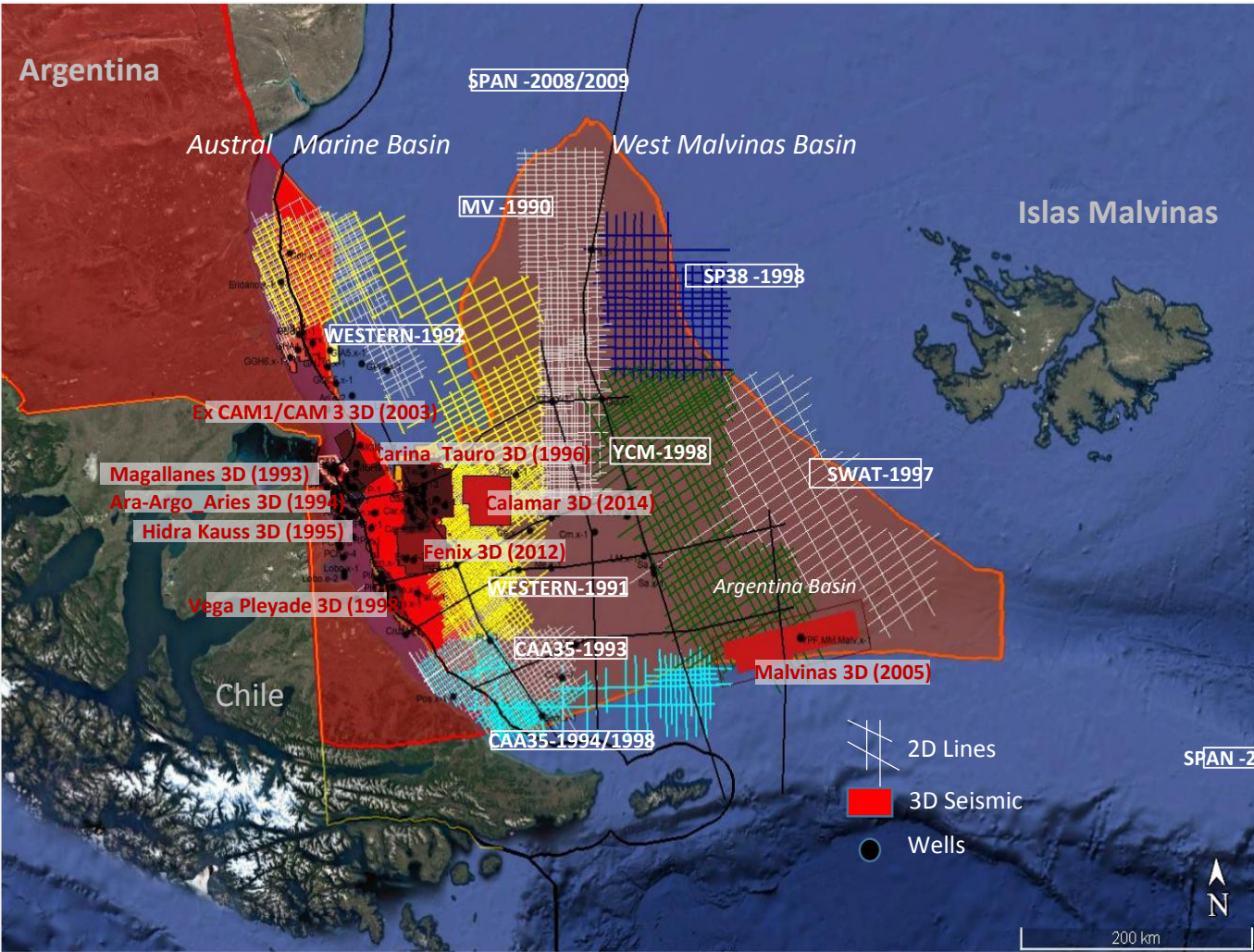


- **Launched November 6th 2018.**
 - Site of the Round – <https://costaafuera.energia.gob.ar>
 - Decree 872/2018. Defines blocks, royalties and arbitration clause.
 - Resolution 65/2018 SEN. Includes Terms & Conditions of Round 1.

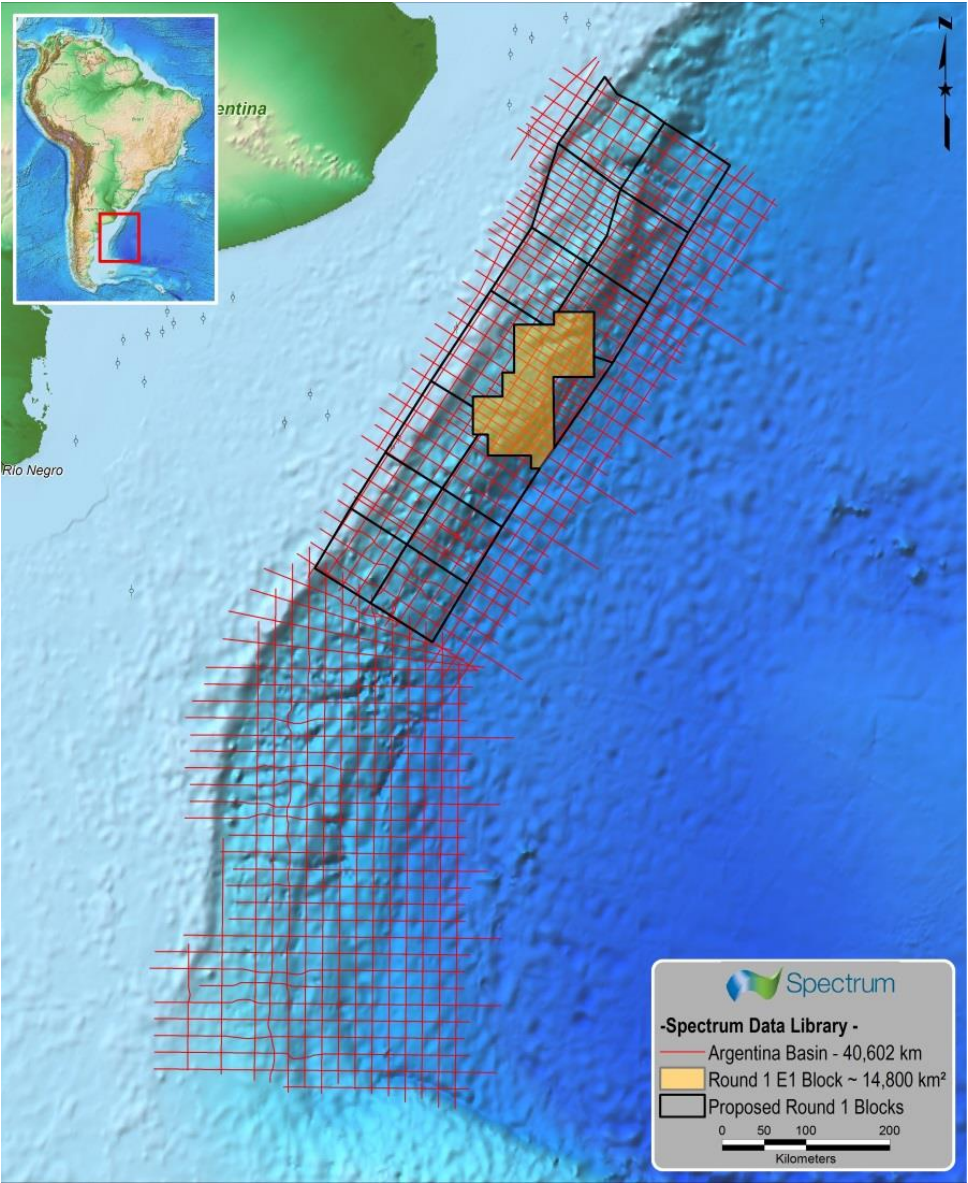
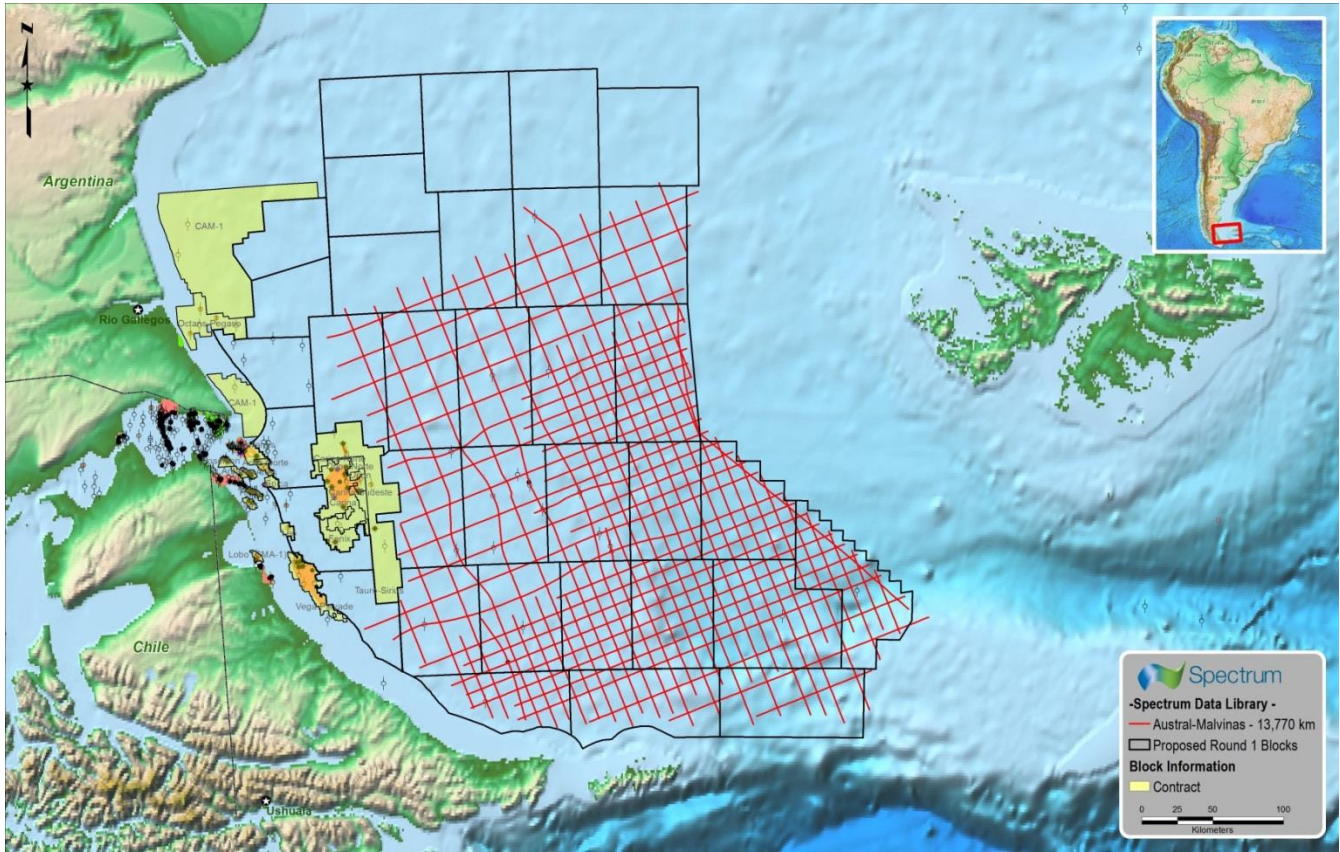
- **Offers to be submitted by March 14th 2019.**

- **Around 25 companies already working in the Round.**
 - 6 Workshops from January to July 2018 – Open discussion on general conditions of the Round.
 - Processed 2D and 3D Seismic and wells data available in SEN Databank.
 - Acquisition of Multiclient 2D seismic shot by Spectrum (around 35000 Km in Argentina Basin and 15000 Km in Malvinas Basin) - Several studies performed by various companies through reprocessing and interpretation of existing data in the Data Bank

Main processed seismic available in the MINEM Data Bank

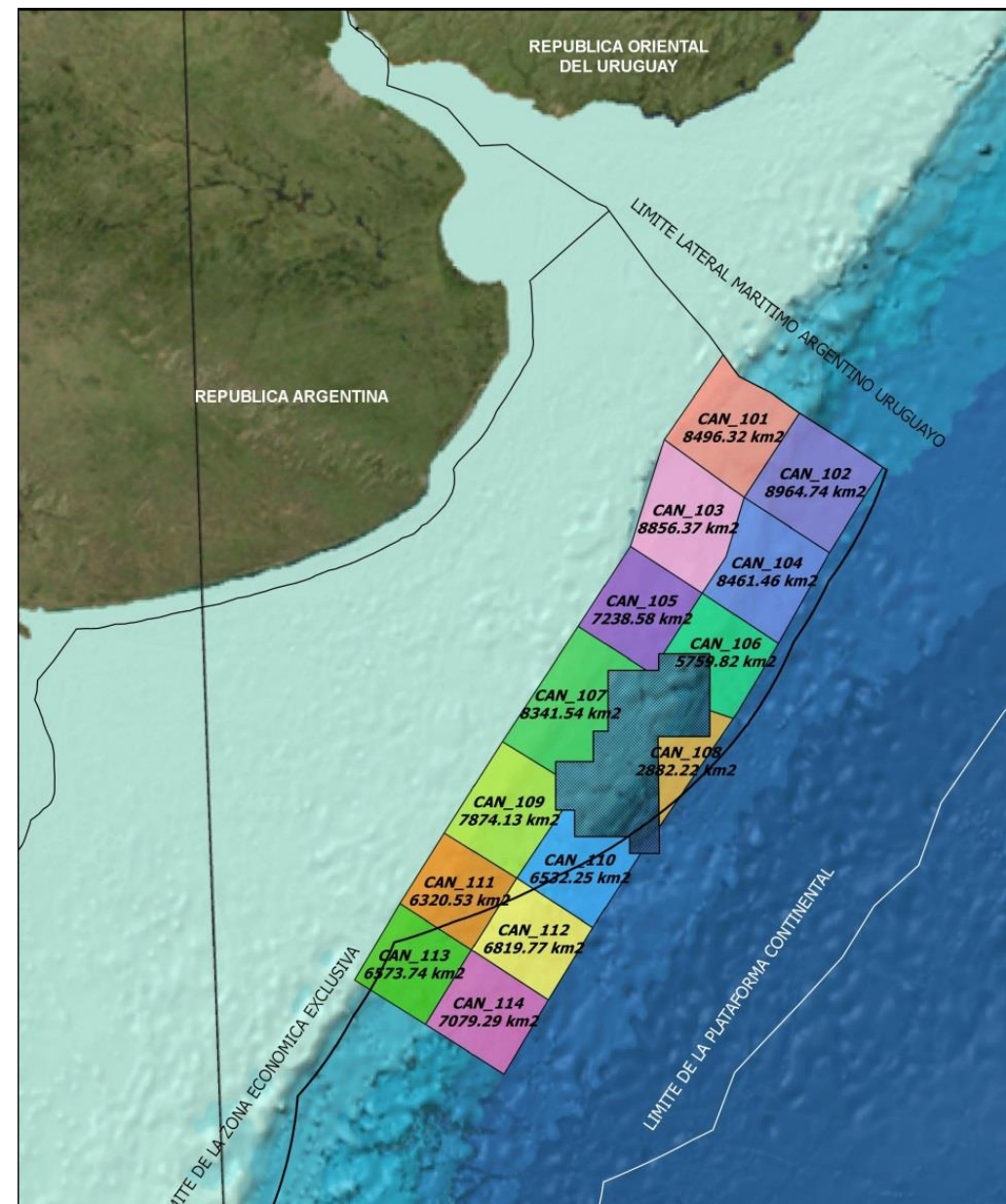


2D Multiclient Seismic acquired by Spectrum 2017/2018 (around 50000 Km)



Argentina North Basin 100000 Km2

- **7 Deepwater blocks** (WD 200 to 1300 m.)
Blocks surface from 6000 to 9000 Km2
- **7 UltraDeepwater blocks** (WD 1200 m. to 4000 m.)
Blocks surface from 3000 to 9000 km2

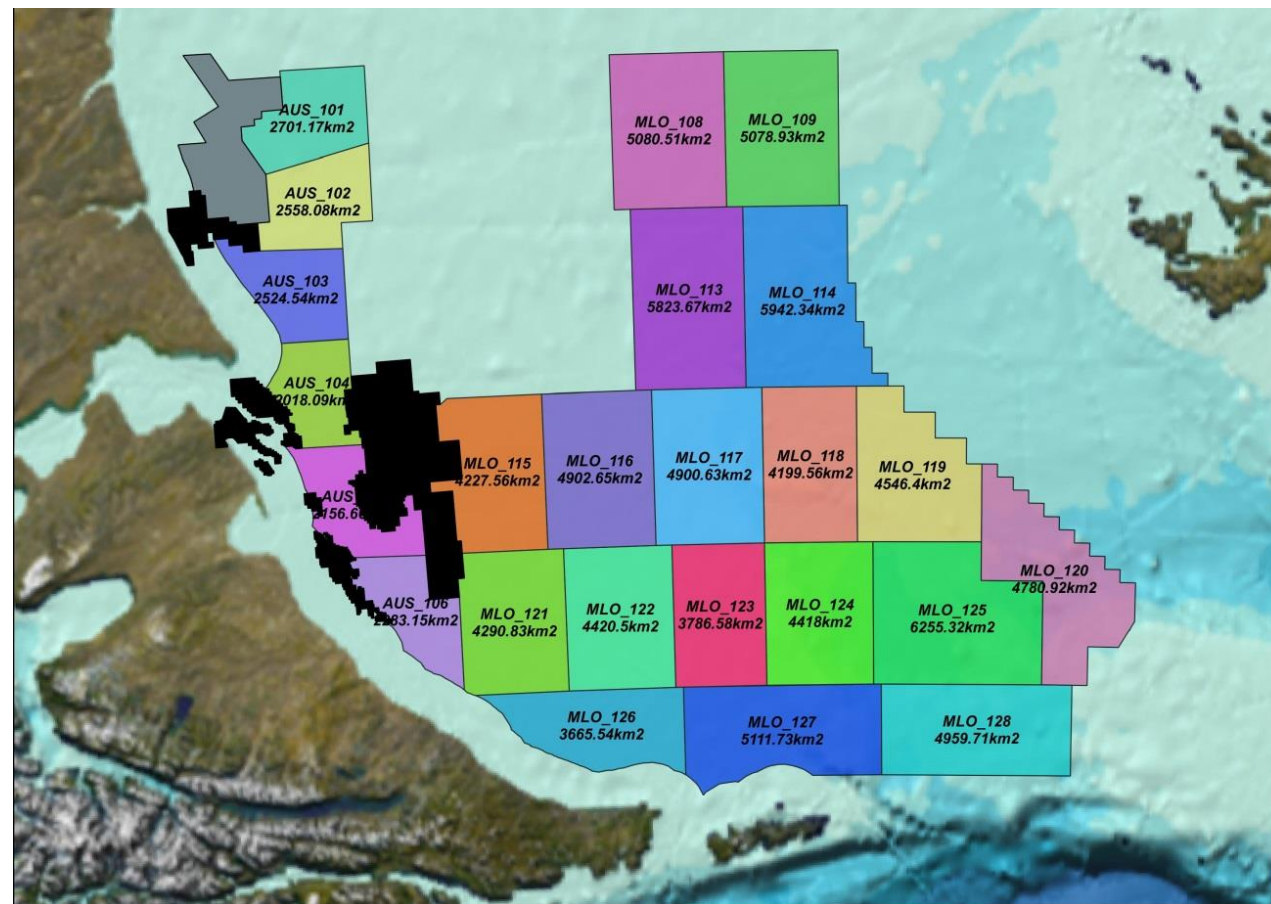


Malvinas West Basin 86000 Km²

18 Deepwater blocks (WD 100 to 600 m.)
Blocks Surface from 3600 to 6300 Km²

Austral Basin 14000 Km²

6 Shallow water blocks (WD < 100 m.)
Blocks Surface from 2000 to 2700 Km²



Argentina Offshore Round 1 – Main Terms & Conditions

- **Exploration Permit: Periods and Surface relinquishment :**
 - Three periods of 4 + 4 + 5 years for all blocks except – Shallow waters (Austral Basin): 4 + 3 + 4.
 - No relinquishment after 1st period and only 50% relinquishment after 2nd period
 - Relinquishment available at any time provided commitments have been fulfilled
 - Obligation to drill one well in 2nd Period and on Extension Period
- **Production Concession:** 30 years + 10 of extension (successive extensions possible)
- **Non Commercial Discoveries:** Possibility to keep discoveries for 5 + 5 years after Exploration Permit if discovery appraised (at least 2 wells in the structure) and need to demonstrate non commerciality.
- **Offers: On Committed Working Units (WUC) for the 1st Exploration Period.**

$$\text{Offer} = \text{WUC} \times 5000 \text{ usd/WU} + \text{Bonus}^*$$

- Minimum WU (equivalent to 2D of 3 x 3 Km in 100% of the block) If WUC < Minimum WU offer discarded
- Basic WU (equivalent to 3D in 20 to 40% of the block): *If WUC < Basic WU no Bonus accepted
- *Bonus: 50% when obtaining the Permit + 50% at the end of 3rd year (can be compensated with additional WU to WUC)

Argentina Offshore Round 1 – Preliminary Royalty Scheme and Fees

- **Royalties:** Law 17.319 => 12% may be reduced to 5% for Offshore.

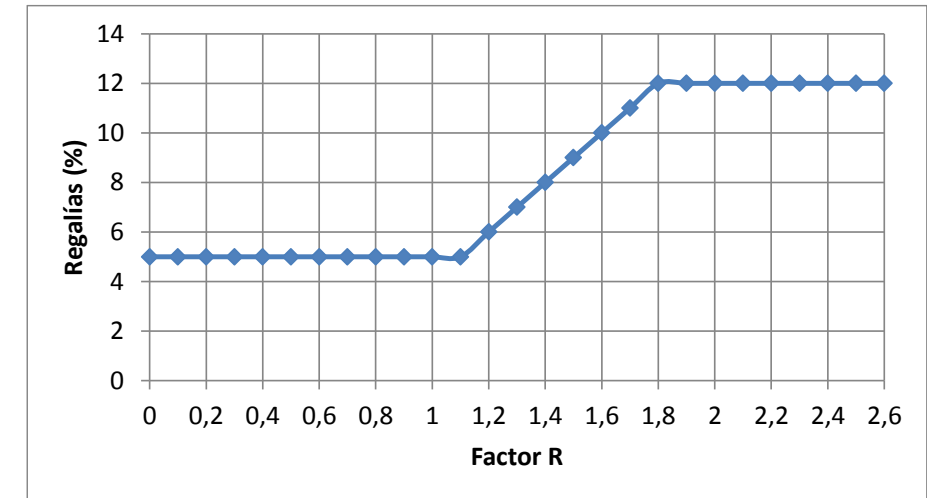
$$R \text{ Factor} = \frac{\text{Cum (Sales - Royalties)}}{\text{Cum (E\&A + CAPEX + OPEX)}}$$

$R \leq 1,1 \Rightarrow \text{Royalties} = 5\%$

$R > 1,1 \text{ and } < 1,8 \Rightarrow \text{Royalties} = (R * 10)\% - 6\%$

$R \geq 1,8 \Rightarrow \text{Royalties} = 12\%$

- “E&A” will include all historical Exploration activities in the Permit + all wells delineating discovery
- R factor calculation will be done by Production Concession



- **Surface fee:** In line with the Hydrocarbons Law.

- 1st Period = AR\$ 250 /km2/y & 2nd Period = AR\$ 1000 /km2/y
- Extension (3rd Period) = AR\$ 17500 /km2/y increasing 25% each year.
- For the 2nd and 3rd Periods the Surface fee may be exchanged (maximum deduction of 90% of the Surface Fee) for new investments above those already committed.
- Production Concession Fee = AR\$ 4500 /km2/y

Argentina Offshore Round 1 – Bidders Qualification & Registration Process

- **Registration for the Round - Bidders qualification:** Technical & Financial. Individual Registration by company is opened until 30 days before the Bidding date. Payment of 50 KUSD to start Registration and get a HD with the information prepared by Schlumberger.
- **Operator types :**
 - Operator/Non Operator = A / for all blocks (In TEIT 50 & 100 ranking)
 - Operator/Non Operator = B / for Deep y Shallow (< 100 m.)
 - Operator/Non Operator = C / only Shallow
- **Automatic qualification** as Operator/Non Operator A for companies demonstrating they are included in “The Energy Intelligence Top 50 of 100: Ranking the World’s Top Oil Companies”.
- **Financial requirements:** (i) Avg. Capital Investments 2015/16/17 or (ii) Last Balance Net equity

Operator	Investments	Net Equity
	Avg 2015/16/17 MMUSD	MMUSD last Balance
A	750	250
B	300	100
C	100	30

Non Operators 50% of requirements of Operators

■ **Operator – Technical requirements:**

○ Requirements Operator A:

- Production > 20000 boe/d average 2015/16/17. This requirement may be also achieved demonstrating the operation of at least 3 exploration wells in water depth of more than 1000 m. in the last 10 years
- Operated at least in one block in the last 15 years in waters deeper than 500 m. depth (Exploration or Exploitation)

○ Requirements Operator B:

- Production > 10000 boe/d average 2015/16/17. This requirement may be also achieved demonstrating the operation of at least 3 exploration wells in water depth of more than 100 m. in the last 10 years
- Operated at least in one block in the last 15 years in waters deeper than 100 m. depth (Exploration or Exploitation)

○ Requirements Operator C:

- Production > 5000 boe/d average 2015/16/17. This requirement may be also achieved demonstrating the operation of at least 3 offshore exploration wells in the last 10 years.
- Operated at least in one block in the last 15 years in offshore (Exploration or Exploitation)

■ **% Minimum Working Interest:** Operator 30 % / Partner 5%

Argentina Offshore Round 1 – Preliminary Additional Conditions

- **Unitization:** obligation to reach a unitization agreement between the parties, scheme to be included
- **External Guarantee:** Covering pending Working Units commitments. Calculated on a yearly basis. Given by the Operator but partners solidary responsible. Letter of Credit, Bank Guarantee or a Surety Bond will be accepted.
 - 1st Period: 100% of Minimum WU + 25% of WUC Additional to minimum WU + 50% of Bonus.
 - 2nd Period and Extension Period: 10 MMusd (Shallow Blocks) / 17 MMusd (Deep) / 22 MMusd (Ultra Deep) until obligation to drill the well is fulfilled
- **Bidding :** Bid Guarantee of US\$ 100K for 120 days
 - Foreign companies will be able to bid, with the commitment to open a Local vehicle if one of the blocks is Pre Awarded to them (they will have 30 days to show they have started the process)
 - **Working Program Flexibility:** The winner of a block will have to pursue the Working program proposed in the bid and fulfill 100% of the number of WU proposed. Changes to the program can be done with the approval by the SEN, changes to the program without SEN approval of up to 40% of the WU committed, only in the case that 40% is fulfilled either with 2D seismic, 3D seismic, or drilling of a well (including casing, coring, testing).
 - **Multiclient WU (Acquisition date before bidding):** 100% of Multiclient Working Units can be applied for the Bid if work was acquired in the last 3 years before the Bidding date, and it is bought by the Bidder up to 18 months after the Permit is awarded. Multiclient WU cannot be considered for the fulfillment of the Minimum Working Units.

■ Arbitration Clause:

- Any lawsuit of \leq than 20 MMUSD \Rightarrow Local justice for > 20 MMUSD then Arbitration Clause
- 3 Arbitrators defined one by each Party, and the 3rd one in Agreement between two Parties from the Permanent Court of Arbitration of La Haye (PCA), if no Agreement then the 3rd Arbitrator will be chosen by the President of the Supreme Court (Hydrocarbon Law Art. 86) from the same PCA panel within 60 days. If the President of the Supreme Court does not appoint the third arbitrator then the parties may request the PCA Secretary-General to carry out such appointment of the third arbitrator (under consideration)
- Arbitration by agreed rules or otherwise UNCITRAL rules
- Foreign Shareholder of a Party and the Party should choose between claiming through this Arbitration Clause or by using any Bilateral Investment Treaty
- Place of Arbitration: Buenos Aires for local companies or otherwise to be agreed by the two Parties in a city of a country having signed the Convention on the Recognition and Enforcement of Foreign Arbitral Awards (New York, 1958) (the "New York Convention") if no agreement, then the Arbitrators should agree on a place in line with Arbitration rules, excluding any of the countries of the Parties
- Each company in a UTE has the possibility to demand individually

- **Local content:** No local content commitment on investments resulting from the bidding documents.
 - The only commitment will be that included in Laws of general application (“*Compre Nacional*”; “*Contrate Nacional*”) whereby local providers may enjoy certain price preferences.
 - The Hydrocarbon Law requires a minimum of 75% of local employees but states that “*this minimum shall be reached within the timeframe set by the regulations or tenders*”.
 - Round 1: In Production Phase: 1st year of production 50% of local employees, increasing 5% every year until reaching 75% in the 6th year.

Argentina Offshore Round 1 – Main Conclusions Closing

- **Argentina Offshore Round 1 offers a great opportunity for both industry and country**
 - Vast underexplored area (200000 km²).
 - Little done in the last 20 years, nearly nothing in Deep and Ultra Deep waters while it was one of the main drivers of the industry worldwide.
 - Increasing new technologies show good potential and there are still many others to be applied.
 - High oil prices increase appetite from industry for Offshore plays and Risked Exploration.
 - High awareness of the government on the need to set Competitive conditions.
 - 20 to 25 big offshore players are working on the Round since 1st half of 2018

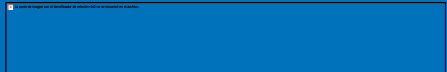
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Value of the WU = 5000 USD

Activity	Units	usd/unit	UT
Acquisition 3D Seismic	km ²	11000	2,2
Acquisition 2D Seismic	km	1200	0,24
Reprocessing 2D TIME Domain	km	200	0,04
Reprocessing 2D DEPTH Domain	km	100	0,02
Reprocessing 3D TIME Domain	km ²	1000	0,2
Reprocessing 3D DEPTH Domain	km ²	500	0,1
Acquisition Potential Methods - Ship (grav/mag)	km	500	0,1
Acquisition Potential Methods - Air (grav/mag)	km	60	0,012
Acquisition CSEM	km ²	5000	1
Acquisition Multibeam	km ²	100	0,02
Drop Cores (includes geochemistry)	N°	17000	3,4

For methods having Km2 as Units, a maximum of 120% of the acquired activity inside the block will be recognized as WU
All acquisitions includes processing

Total TD BRT (m.)*	Estimated cost of a dry well without casing (MMusd)							
	Water depth (m.)*							
	Jack up	100 (Floating)	500	1000	1500	2500	3500	4500
500	7,2	15,0						
1000	9,9	21,1	16,5					
2000	13,9	29,7	25,1	24,0	19,0			
3000	17,9	38,5	33,8	32,8	27,8	21,5		
4000	22,0	47,4	42,7	41,8	36,7	30,5	24,0	
5000	26,2	56,5	51,7	50,9	45,8	39,7	33,2	26,5
6000	34,2	65,8	60,9	60,2	55,1	49,0	42,6	35,9
7000	42,2	75,2	70,2	69,7	64,5	58,4	52,1	45,5
8000	47,6	84,7	79,7	79,3	74,0	68,0	61,8	55,3
9000	53,0	94,4	89,3	89,0	83,7	77,8	71,6	65,2
10000	58,5	104,3	99,1	98,9	93,6	87,7	81,6	75,2

*For all values exceeding this table extrapolation following the line tendencies will be used

* The final WU of a well should be obtained by linear interpolation of both parameters WD and TD. With the following procedure:

*For WD <100 m., this UT should be used for any well drilled with a Jackup in shallow waters.

Example: a well drilled in 120 m. of WD with a Jack up should use this <100 m. values

Casing of the well to TD: Increase the above values by 5%

Coring: Increase the above values by 0,5% for every 4,5 m of recovered core.

DST (cased or openhole): Increase the above values by 20%

Value of the WU = 5000 USD

	WUs of a dry well without casing							
	Water depth (m.)*							
Total TD BRT (m.)*	Jack up	100 (Floating)	500	1000	1500	2500	3500	4500
500	1440	3000						
1000	1980	4220	3300					
2000	2780	5940	5020	4800	3800			
3000	3580	7700	6760	6560	5560	4300		
4000	4400	9480	8540	8360	7340	6100	4800	
5000	5240	11300	10340	10180	9160	7940	6640	5300
6000	6840	13160	12180	12040	11020	9800	8520	7180
7000	8440	15040	14040	13940	12900	11680	10420	9100
8000	9520	16940	15940	15860	14800	13600	12360	11060
9000	10600	18880	17860	17800	16740	15560	14320	13040
10000	11700	20860	19820	19780	18720	17540	16320	15040

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