



## Perspective of the Venezuela Mid-term Offshore Gas Development in border area with TT

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Partner & Regional Director

**Energy  
Caribbean**

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Hilton Port of Spain,  
Trinidad & Tobago

## Headquarters & Offices

**GAS ENERGY LATIN AMERICA (GELA)** is a consulting and advisory services company, focused in natural gas, oil, power sector and renewable energy, operating throughout Latin America and The Caribbean since 2008.

### Technical Offices:

Bolivia and Peru: for Argentina, Brazil, Chile, Colombia, Ecuador, Mexico, Uruguay, Venezuela and other countries in Latin America and The Caribbean.

### Commercial Offices:

US, Mexico and Latin America

### Specialized Senior Consultants:

In every country



## Senior Partner Directors



**Alvaro Rios**  
Partner & Director  
**LATIN AMERICA & THE CARIBBEAN**

Chemical Engineer, former Minister of Mines & Energy in Bolivia, with experience in the energy sector.



**Antero Alvarado**  
Partner Director  
**VENEZUELA, CENTRAL AMERICA & THE CARIBBEAN**



**Luis Fernandez**  
Partner Director  
**PERU**



**Dedy Calderon**  
Partner Director  
**PERU**



**Lizeth Pilco**  
Partner Director  
**BOLIVIA**



**Ricardo Lloreda**  
Partner Director  
**COLOMBIA**



**Alfonso Canedo**  
Commercial Partner Director  
**North America**



**Gastón Ramos**  
Partner Director  
**CHILE**



**Gabriel Bauza**  
Partner Director  
**CHILE**



**David Shields**  
Partner Director  
**MEXICO**



**Fernando Meiter**  
Partner Director  
**ARGENTINA - URUGUAY**



**Fabián Eguez**  
Partner Director  
**ECUADOR**

3 KICK OFF MEETING



## Senior Associated Consultants

### Associated Consultants // Specialist Team



**Osvaldo Irusta**  
Power Sector



**Eddy Iporre**  
Power Sector



**Antonio Díaz**  
LNG Specialist



**Luis Guerra**  
Refining Specialist



**Daniel Gomez**  
Renewable Energy



**Ivan Rodríguez**  
NG Transportation & Processing



**Fernando Pacheco**  
Geology & Upstream Projects



**Luis Vera**  
Geology & Upstream Projects



**Klaus Vargas**  
Energy & Economy



**Andrea Caverio**  
Energy & Economy

In Addition Permanent Junior Team of Technical Consultants in Peru and Bolivia

4 KICK OFF MEETING



## Consulting Areas: Oil, Natural Gas & Power Sectors

- Strategic advisory and planning services for entry into Latin American energy markets
- Identification of business opportunities in Latin America and The Caribbean
- Regulatory analysis, markets (supply-demand) and prices
- Independent view from governing bodies and business development of markets, projects, trends and pricing
- Trends and insights: political, socio economic and environmental
- Cost and feasibility studies for project investment
- Support in the due diligence process (both technical and commercial aspects)
- Technical and operational consulting in upstream projects

5 KICK OFF MEETING



## Multi-client Studies & Periodic Reports

- Multi-client studies with special focus on natural gas (Quarterly presentations or reports)
  - ✓ [Peru](#) available since 2011
  - ✓ [Venezuela](#) available since 2013
  - ✓ [Bolivia](#) available since 2015
  - ✓ [Argentina](#) and [Chile](#) available since 2016
- LATAM & The Caribbean [Prospective](#) Energy Sector Analysis 2016 - 2019
  - ✓ Available in LATAM and The Caribbean since June 2016
- Market Report - In-depth research reports



6 KICK OFF MEETING



## Clients of Gas Energy Latin America

E&P Companies	Energy
Distributors	Industry & Services
Institutions & Associations	Financial Institutions

7 KICK OFF MEETING

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## Topics

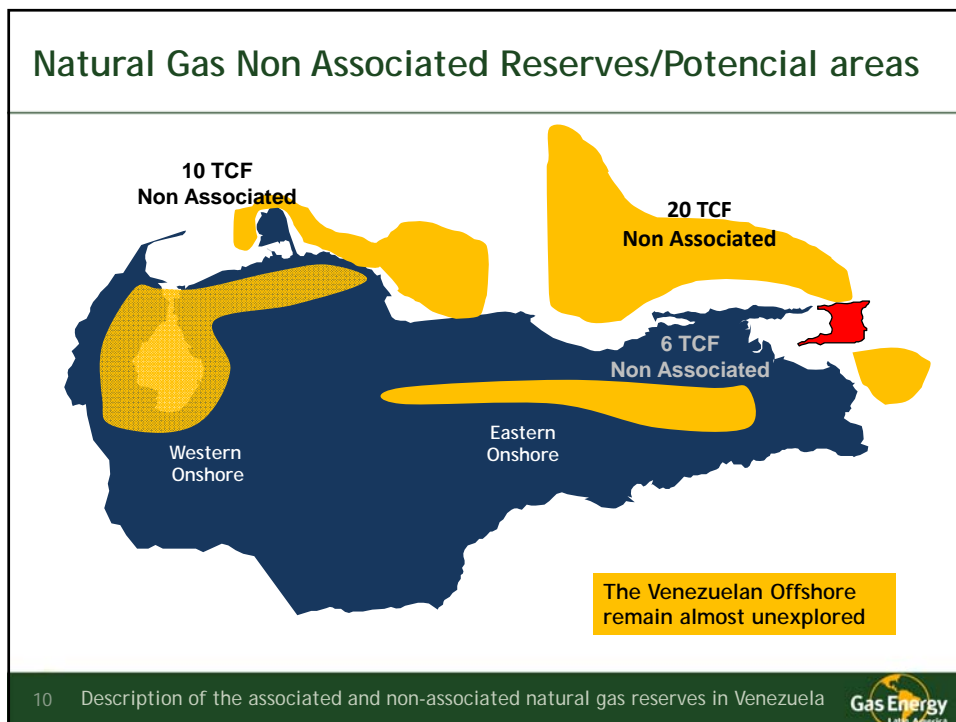
- Venezuela has huge reserves of gas
- Venezuela has a low international reserves and debts to pay
- Venezuela has a gas deficit in the market
- Venezuela has 80% of an associated gas production
- Venezuela Flare 1,4 Bcf daily
- Venezuelan government is implanting an "Opening"



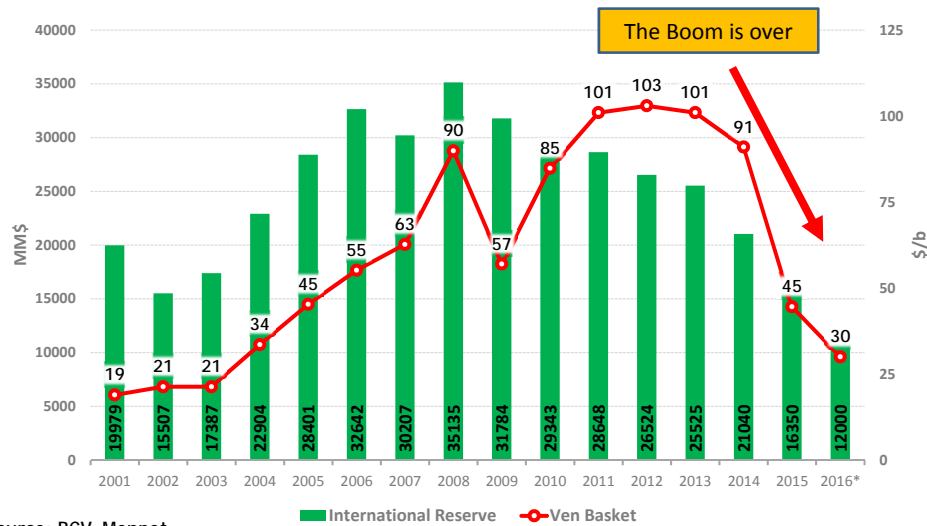
**High gas Reserves  
Low Int Reserves**

9

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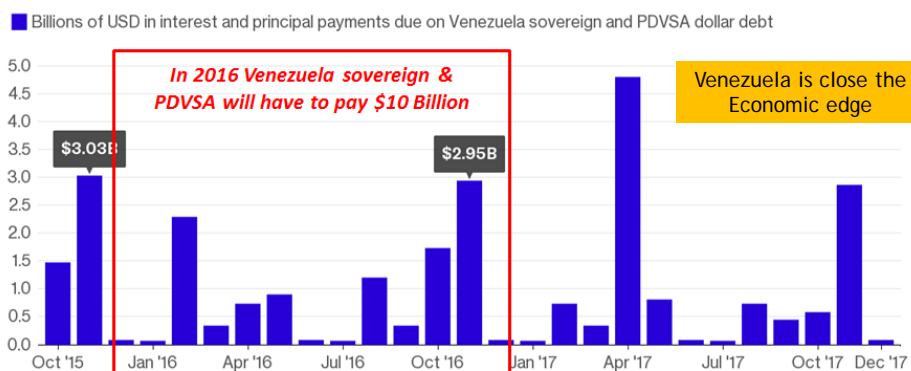
## International Reserves / Venezuelan Basket



11 Challenges in the development of Venezuelan natural gas industry



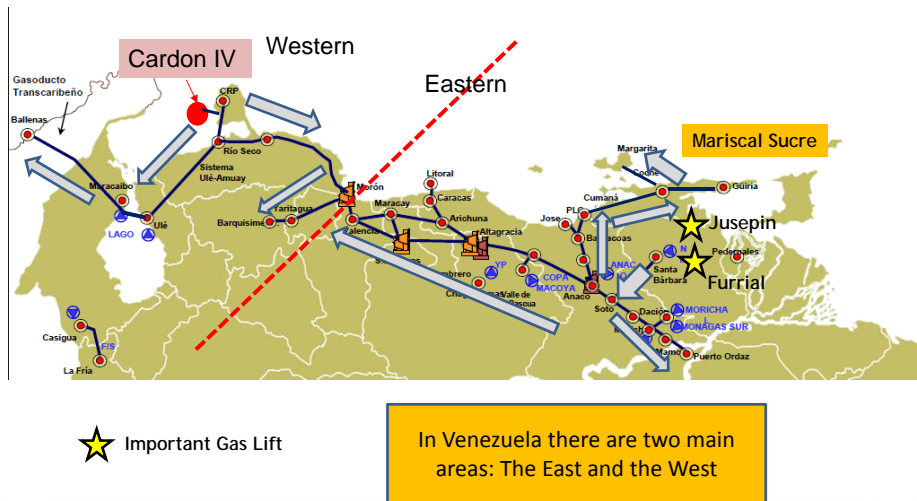
## Venezuelan Debt 2016



12 Challenges in the development of Venezuelan natural gas industry



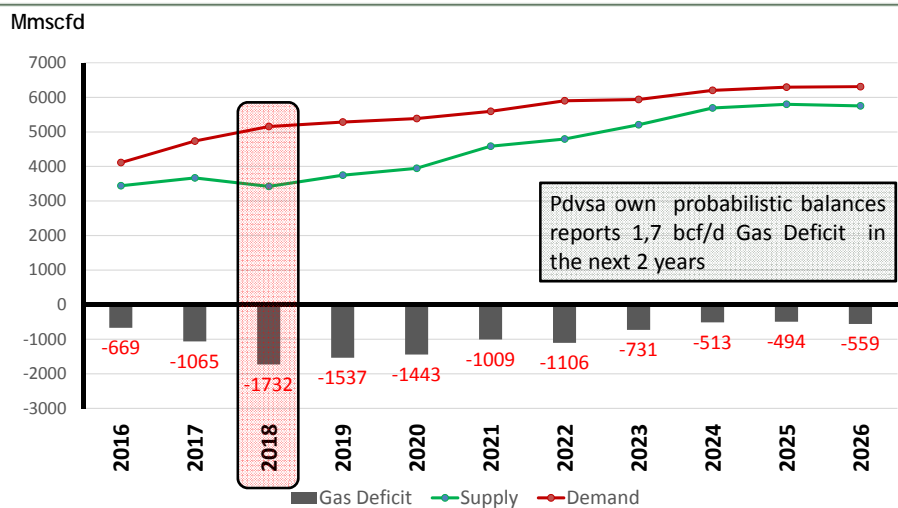
## Venezuela - Western- Eastern Gas “Markets”



13 Venezuela Natural Gas Balance




## Pdvsa Gas Balance (P50)



Source: PDVSA, 2016

14 Challenges in the development of Venezuelan natural gas industry






80% of gas out is associated to oil industry but

15

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### North Monagas - Location



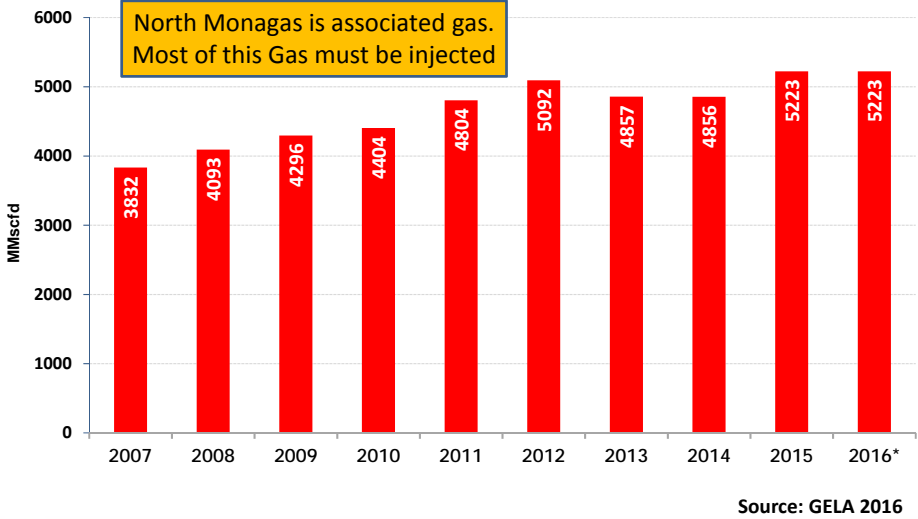
Source: GELA 2016

16 Venezuela Natural Gas Balance

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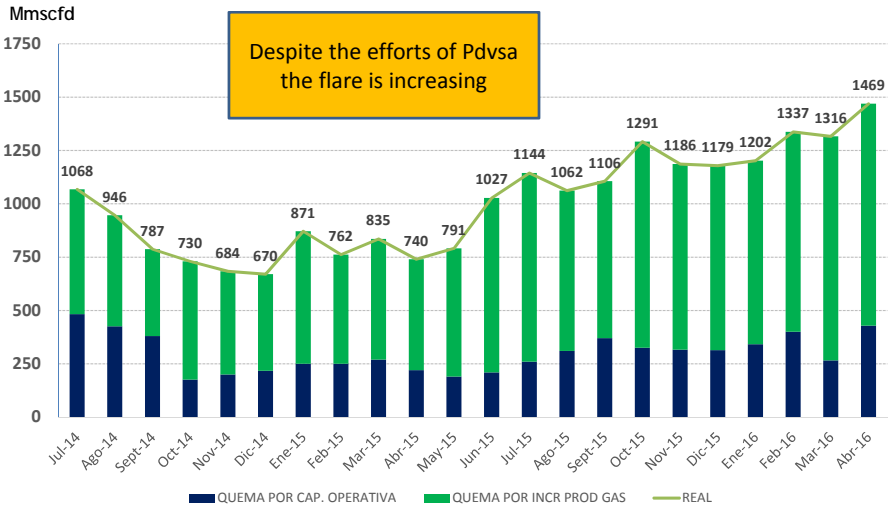
### North Monagas - Gas Supply from Pdvsa EP



17 Venezuela Natural Gas Balance



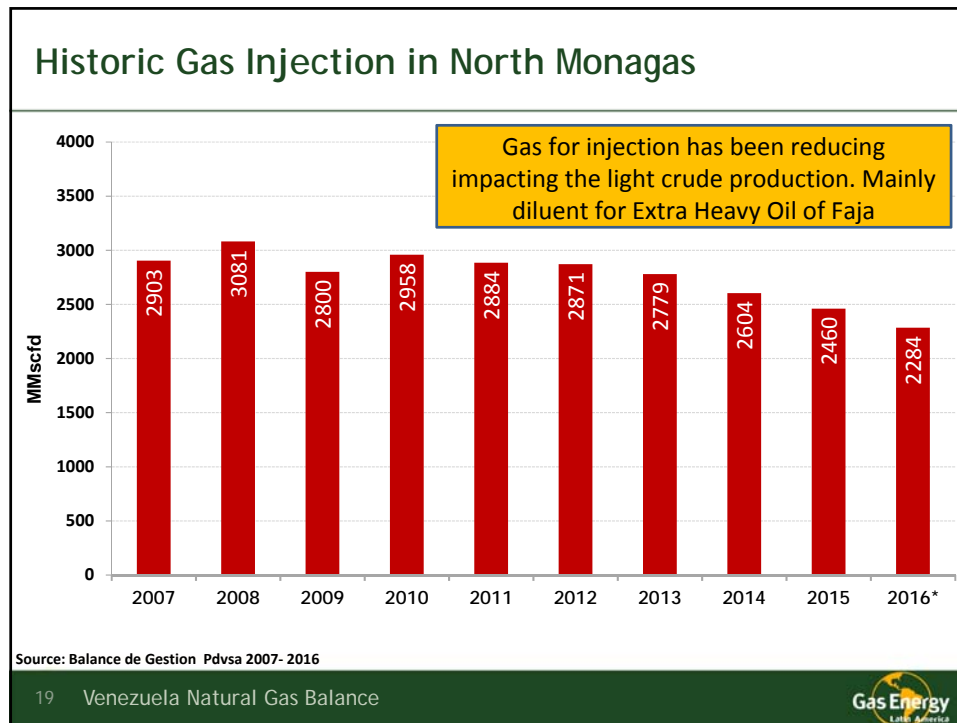
### North Monagas - Gas Flared



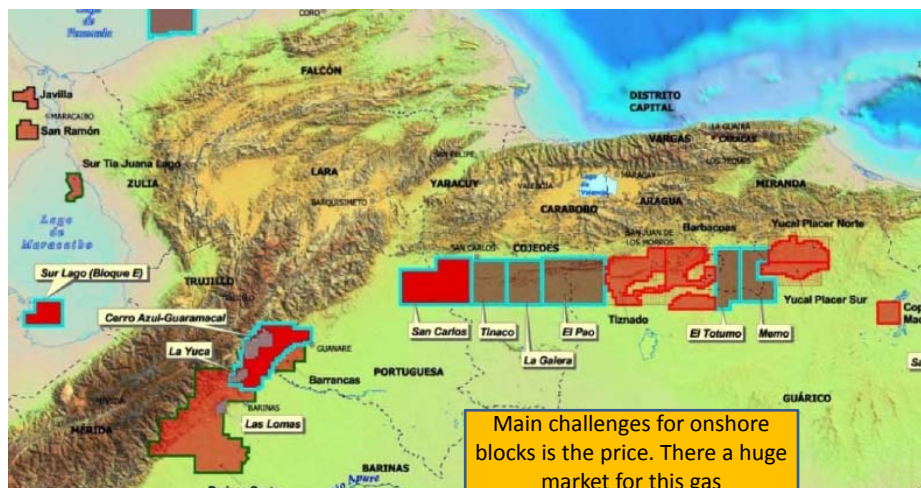
Source: Pdvsa 2016

18 Venezuela Natural Gas Balance





## Location of new offshore blocks



Source: Pdvs 2016

21 Challenges in the development of Venezuelan natural gas industry



## New 11 on-shore blocks available

Venezuela government is ready to Heard business proposals

RESUMEN LICENCIAS EXPLORATORIAS EN						
EN TIERRA	AREA, KM <sup>2</sup>	UBICACIÓN	TIPO	RESERVAS PROBADAS (MMPCN)	EXPECTATIVAS (MMPCN)	OBSERVACIONES
BARINAS OESTE	3655,0	FLANCO SUR ANDINO	DESARROLLO	459.092		INCLUYE CAMPO LAS LOMAS CON AREA DE APROX 300 Km2
BLOQUE GUARAMACAL	1696,9	FLANCO SUR ANDINO	EXPLORATORIA	30.651	1.125.770	INCLUYE LOS PROSPECTOS LA YUCA, GUARAMACAL Y CERRO AZUL, DENTRO DE ABRAE
BLOQUE "E"	182,2	COSTA SUR DEL LAGO	DESARROLLO	1.058.000		
SAN CARLOS	1769,3	EJE NORTE LLANERO	EXPLORATORIA	24.850		
TINACO	960,0	EJE NORTE LLANERO	EXPLORATORIA		830.000	
LA GALERA	964,6	EJE NORTE LLANERO	EXPLORATORIA		1.541.970	ADYACENTE AL ÁREA TINACO CON RESERVAS PROBADAS
EL PAO	1813,1	EJE NORTE LLANERO	EXPLORATORIA		2.055.960	ADYACENTE AL ÁREA TIZNADO CON RESERVAS PROBADAS
MEMO	926,3	EJE NORTE LLANERO	EXPLORATORIA		1.027.980	ADYACENTE A LAS ÁREAS PRODUCTORAS YUCAL PLACER NORTE Y SUR
EL TOTUMO	880,5	EJE NORTE LLANERO	EXPLORATORIA		1.027.980	ADYACENTE AL ÁREA BARBACOAS CON RESERVAS
SAN MIGUEL		FAJA DIVISION AYACUCHO	DESARROLLO	850.000		
BOCA - CACHAMA - CHIMIRE		FAJA DIVISION AYACUCHO	DESARROLLO	2.060.000		
<b>TOTAL</b>		<b>11</b>			<b>7.609.660,00</b>	

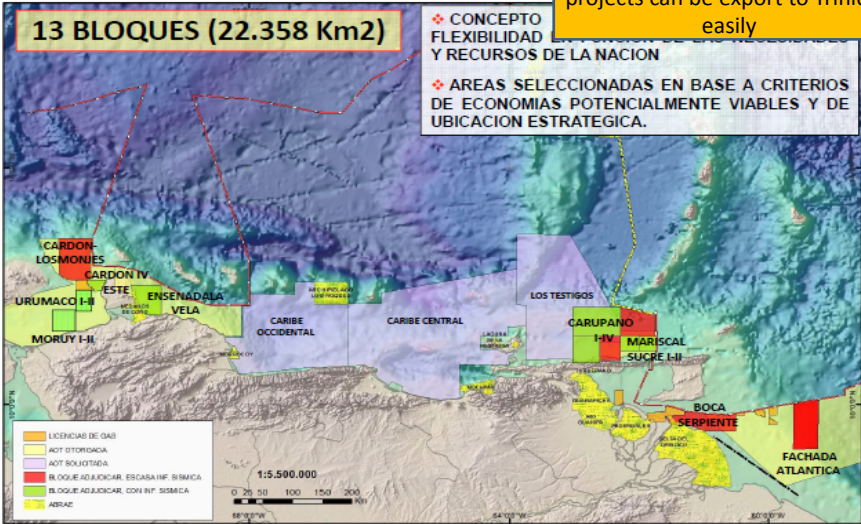
7 TCF

22 Challenges in the development of Venezuelan natural gas industry



New 13 offshore blocks available

Gas from Eastern offshore projects can be export to Trinidad easily



source. Pdvs 2016

23 Challenges in the development of Venezuelan natural gas industry



New 13 offshore blocks available

The future of the gas industry is in the Offshore.

RESUMEN LICENCIAS EXPLORATORIAS COSTA AF								
REGION	NOMBRE	AREA, KM²	Cantidad de oportunidades	FLUIDO	EXPECTATIVAS MVS, MMMPG	EXPECTATIVAS , MMMPG	COLUMNA DE AGUA, m	PROF. DEL OBJETIVO, pies
OCCIDENTAL	CARDÓN IV ESTE (ROBALO ESTE)	912,0	1	GAS LIBRE	2.492,0	720,0	47	9.200
	MORUY I - II (PLAY CARBONATICO DEL PALEOCENO)	1309,0	4	GAS LIBRE	2.120,0	1.050,0	22	9.500 -12.100
	URUMACO I (COROCORO - CORAL)	1121,0	1	GAS LIBRE	2.144,0	497,0	41	12.700
	CARDÓN (CAZÓN) - LOS MONJES	2391,0	5	GAS LIBRE	63.872,0	13.378,0	58 - 250	2.000 - 6.000
	ENSENADA LA VELA	1855,0	5	GAS LIBRE	6.741,0	3.282,0	60	9.500 -10.500
ORIENTAL	MARISCAL SUCRE I (RONCADOR/CARACOLITO)	1032,0	4	GAS LIBRE	3.421,0	1.954,0	110	10.500 -13.000
	MARISCAL SUCRE II (MEJILLONES A, B, PATAS SUR A)	1065,0	6	GAS LIBRE	1.676,0	1.265,0	110	10.500 -11.000
	CARUPANO I (DRAGÓN NORTE)	1723,0	10	GAS LIBRE	1.415,0	699,0	110 - 140	9.500 -10.600
	CARUPANO II	2436,0	9	GAS LIBRE	3.951,0	801,0	200 - 400	6.000 -11.500
	CARUPANO III	1944,0	10	GAS LIBRE	7.484,0	1.547,0	200 - 400	6.500 -18.000
	CARUPANO IV	1475,0	3	GAS LIBRE	1.528,0	550,0	160 - 170	9.500 -11.500
	BLOQUE 5 - PLATAFORMA DELTANA	2368,0	6	GAS LIBRE	2.202,0	1.610,0	100 - 400	3.400 -12.550
	BOCA DE SERPIENTE	2727,0	16	GAS LIBRE	90.252,0	24.183,0	30 -100	6.000 -16.000
TOTAL		13	22358,0	80	189.298,0	51.536,0		

CUENCA	CANTIDAD DE OPORTUNIDADES	EXPECTATIVAS MVS, MMMPG	EXPECTATIVAS , MMMPG
GOLFO DE VENEZUELA	11	70628	15645
FALCON NE	5	6741	3282
CARUPANO	42	14378	3597
PLATAFORMA DELTANA	22	92454	25792

**51 TCF**

source. Pdvs 2016

24 Challenges in the development of Venezuelan natural gas industry





## Mariscal Sucre Offshore Development

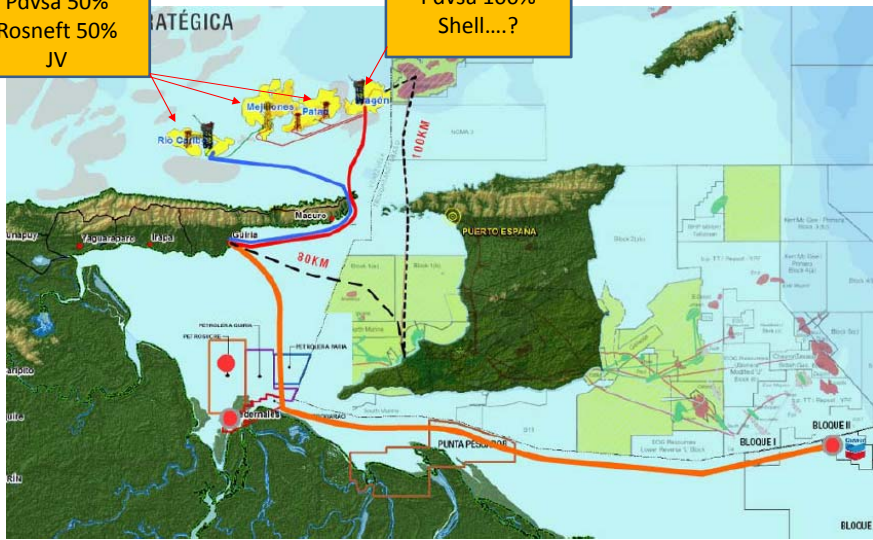
25

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### Strategic vision of Pdvsa

Pdvsa 50%  
Rosneft 50%  
JV

Pdvsa 100%  
Shell....?

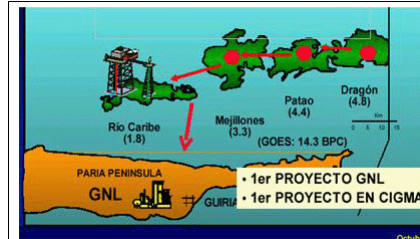


26

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## Rosneft in the scene

- PdvsA offered to Rosneft to be partner in Mariscal Sucre
- Rosneft accepted only 3 offshore fields. Except Dragon Field
- The deadline to create a JV is December 2017
- GELA considers that domestic market will be not the priority because gas price remain subsidizes
- Still unclear the way the gas will be exported



900 Mmscfd output of Patao, Mejillones and Rio Caribe

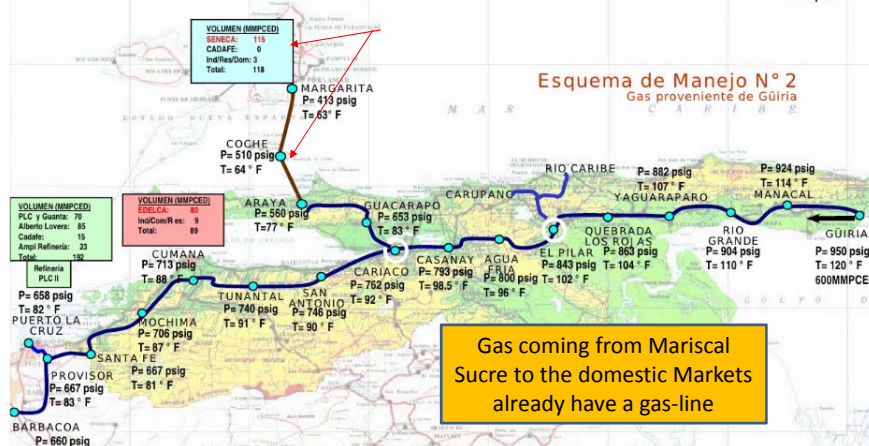
27



## Transport Capacity connecting Offshore with Market



Sistema Nor-Oriental de Gas  
Etapa 1



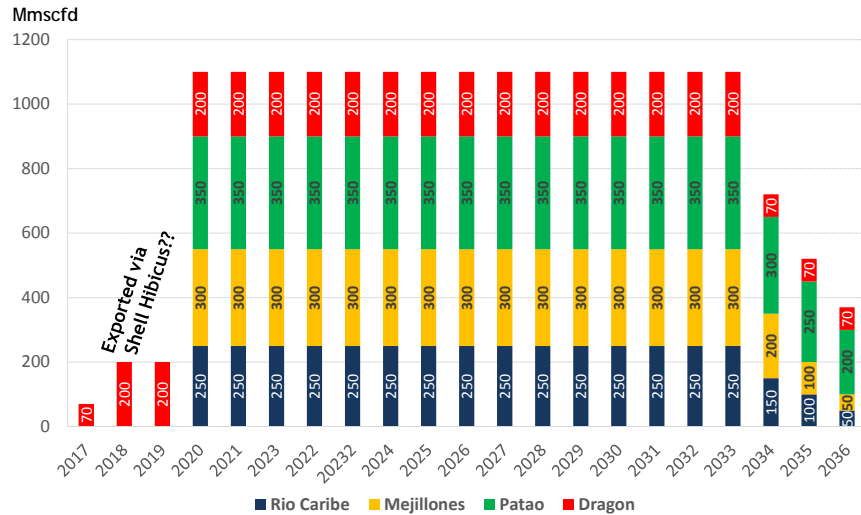
28

Challenges in the development of Venezuelan natural gas industry





## Mariscal Sucre Total Gas Future production

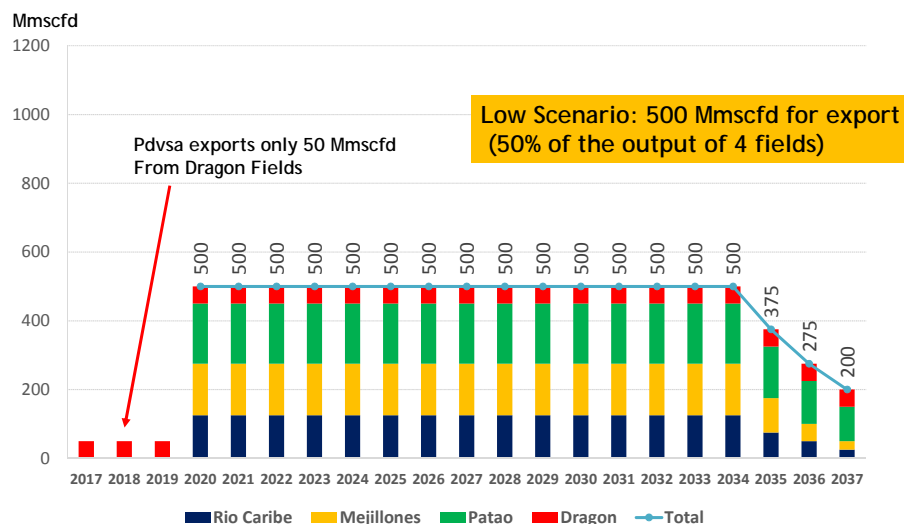


29



## Mariscal Sucre Export Scenarios:

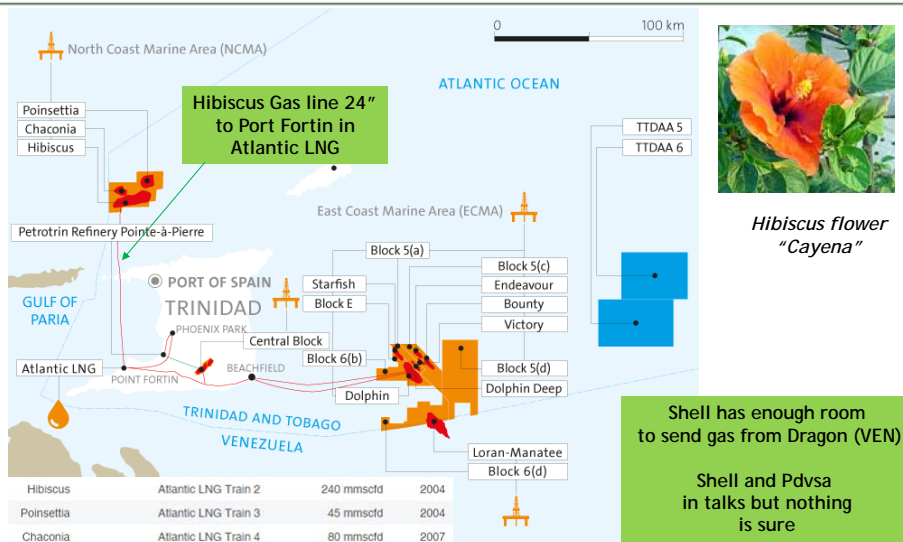
Mejillones/Rio Caribe/ Patao (Rosneft-Pdvs) & Dragon (Pdvs-Shell)?



30



## Hibiscus Shell (TT)



31

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## Final comments

- After feasibility study Rosneft-Pdvsa will receive a Gas License for Mariscal Sucre Developments
- In this license will state the % destined to the domestic Market and % for export
- Still pending the way that all gas volumes will be exported
- Still pending commercial terms and final approval of the Venezuelan Energy Ministry
- Venezuelan government prefers LNG rather than selling the gas to TT
- Both parties are interested in an interconnection

32

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