

25th world gas conference  
“Gas: Sustaining Future Global Growth”

# Contribution of the exploration activity in reserves renewal- Algeria

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Algeria  
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Patron



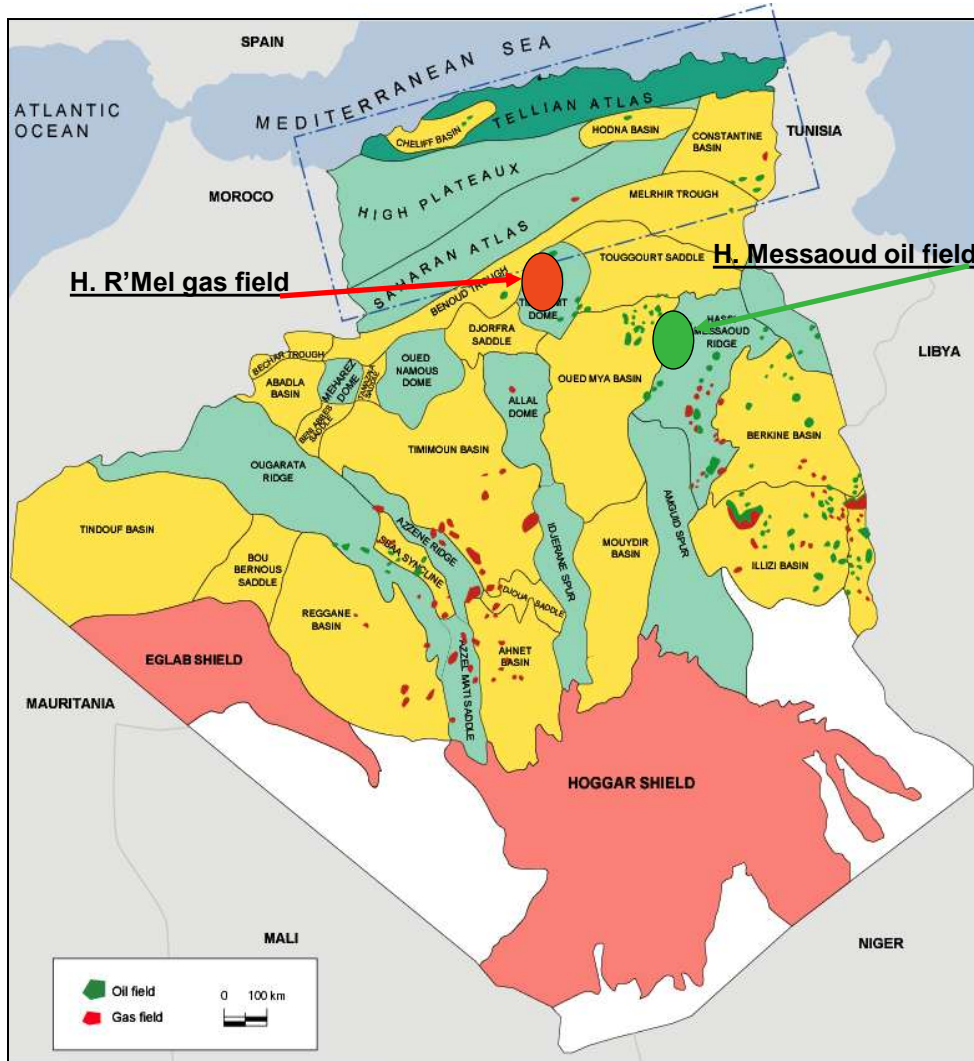
Host



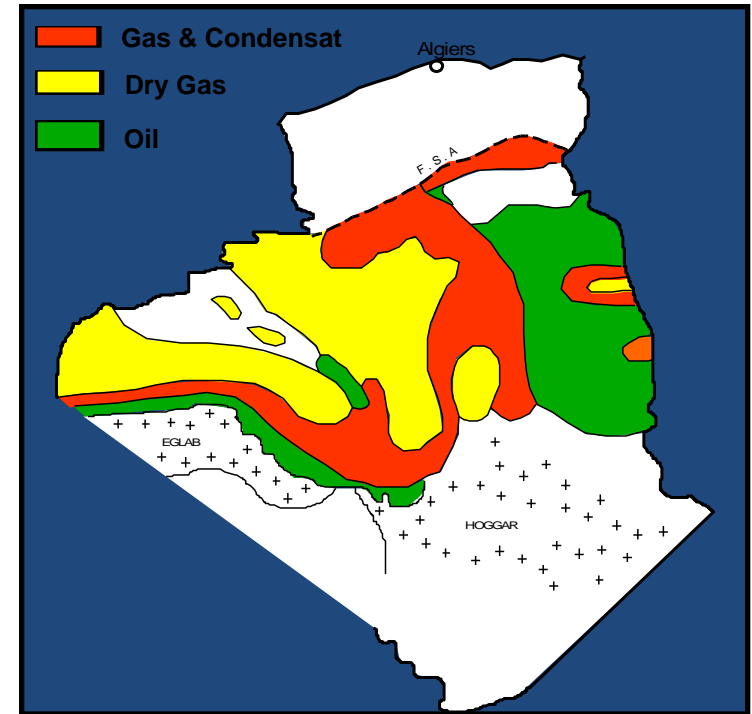
Host Sponsor



- Presentation of the The Algerian Domain
- History of Exploration in Algeria
- Contribution of the Exploration in Gas Renewal in Algeria
- Remaining Potential
- Conclusion

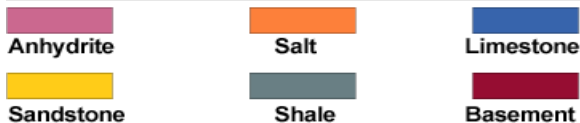


14 SEDIMENTARY BASINS



Silurian & Frasnian  
source rocks maturity

| Objective horizons            | Reservoir | Number of pools |           |            |            |
|-------------------------------|-----------|-----------------|-----------|------------|------------|
|                               |           | Oil             | Oil + Gas | Gas        | Total      |
| Eocene-Mio                    |           | 1               |           |            | 1          |
| Cretaceous                    |           | 3               |           |            | 3          |
| Jurassic                      |           |                 |           |            |            |
| Triassic                      |           | 56              | 17        | 19         | 92         |
| Carboniferous                 |           | 11              | 2         | 10         | 23         |
| Devonian                      |           | 5               | 5         | 15         | 25         |
|                               |           | 22              | 16        | 52         | 90         |
| Silurian                      |           | 6               | 1         | 2          | 9          |
| Ordovician                    |           | 15              | 7         | 39         | 61         |
| Cambrian                      |           | 9               |           | 1          | 10         |
| Basement                      |           |                 |           |            |            |
| <b>314 oil and gas fields</b> |           | <b>128</b>      | <b>48</b> | <b>138</b> | <b>314</b> |



## PETROLEUM PLAYS

### Paleozoic

- Cambro-ordovician
- Carboniferous
- Devonian

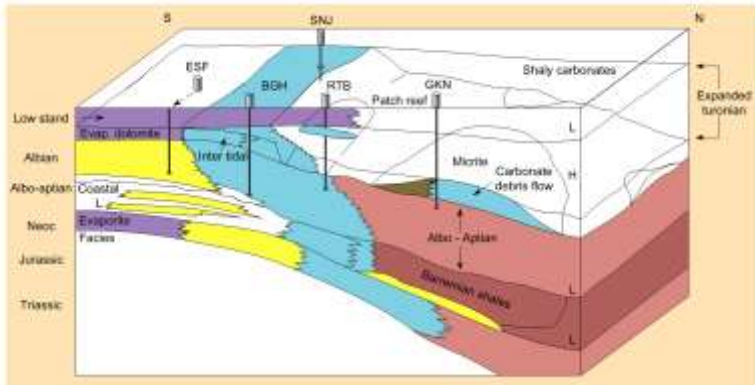
### Mesozoic

- Triassic
- Cretaceous

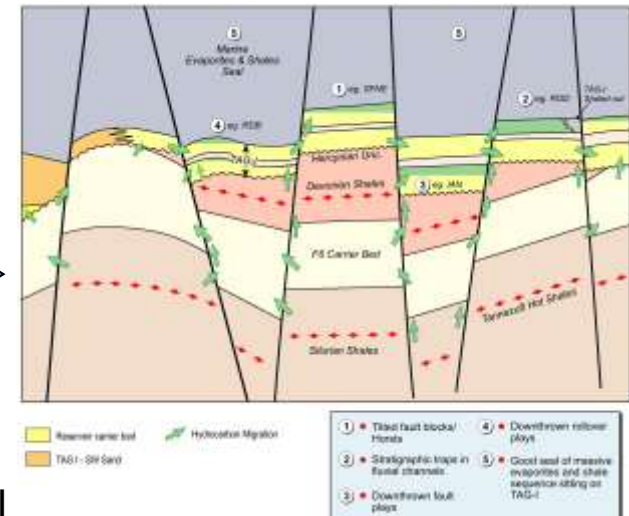
### Tertiary

- Eocene
- Mio-pliocene

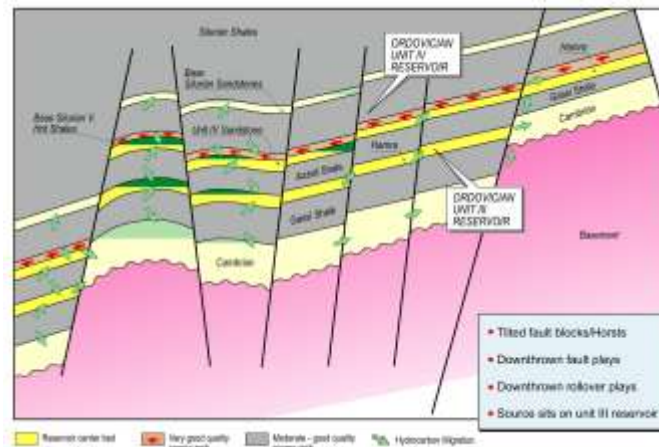
## Cretaceous / N. basins



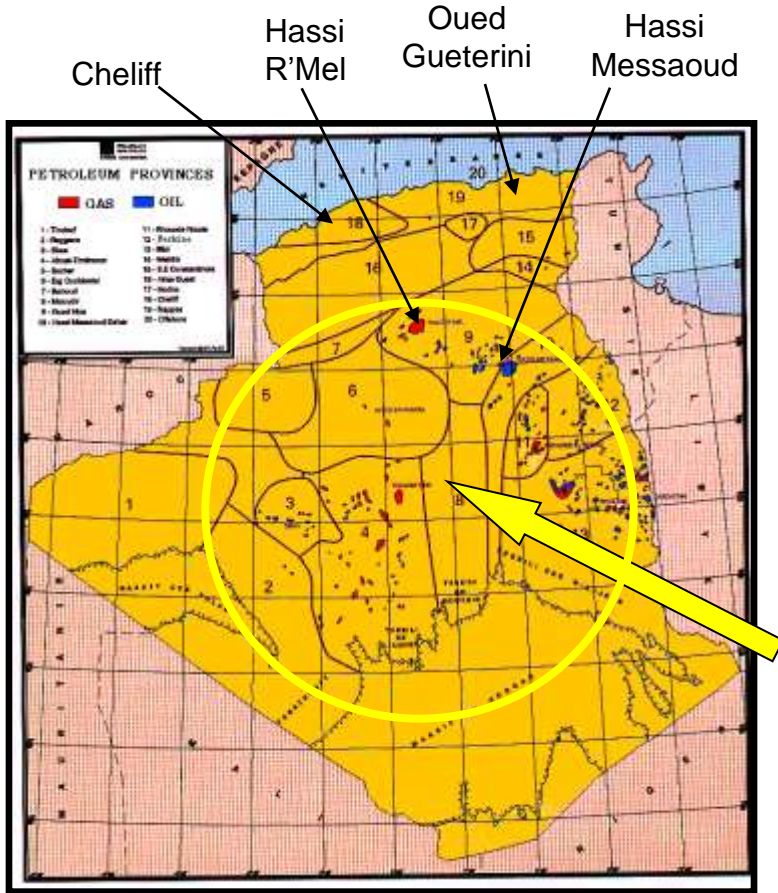
## Triassic-Devonian - Ordovician / Oriental basins



## Devonian-Ordovician / Occidental basins







## First Activity

↪ 1890's (Cheliff Basin)

## First Commercial Discovery

↪ 1948 (Oued Gueterini) in North of Algeria.

## 1950's

- Extension to the Sahara with the drilling of Bg-1 in 1954
- 1956 : Discovery of the Hassi Messaoud and Hassi R'mel giant fields

## 1990 - 2000

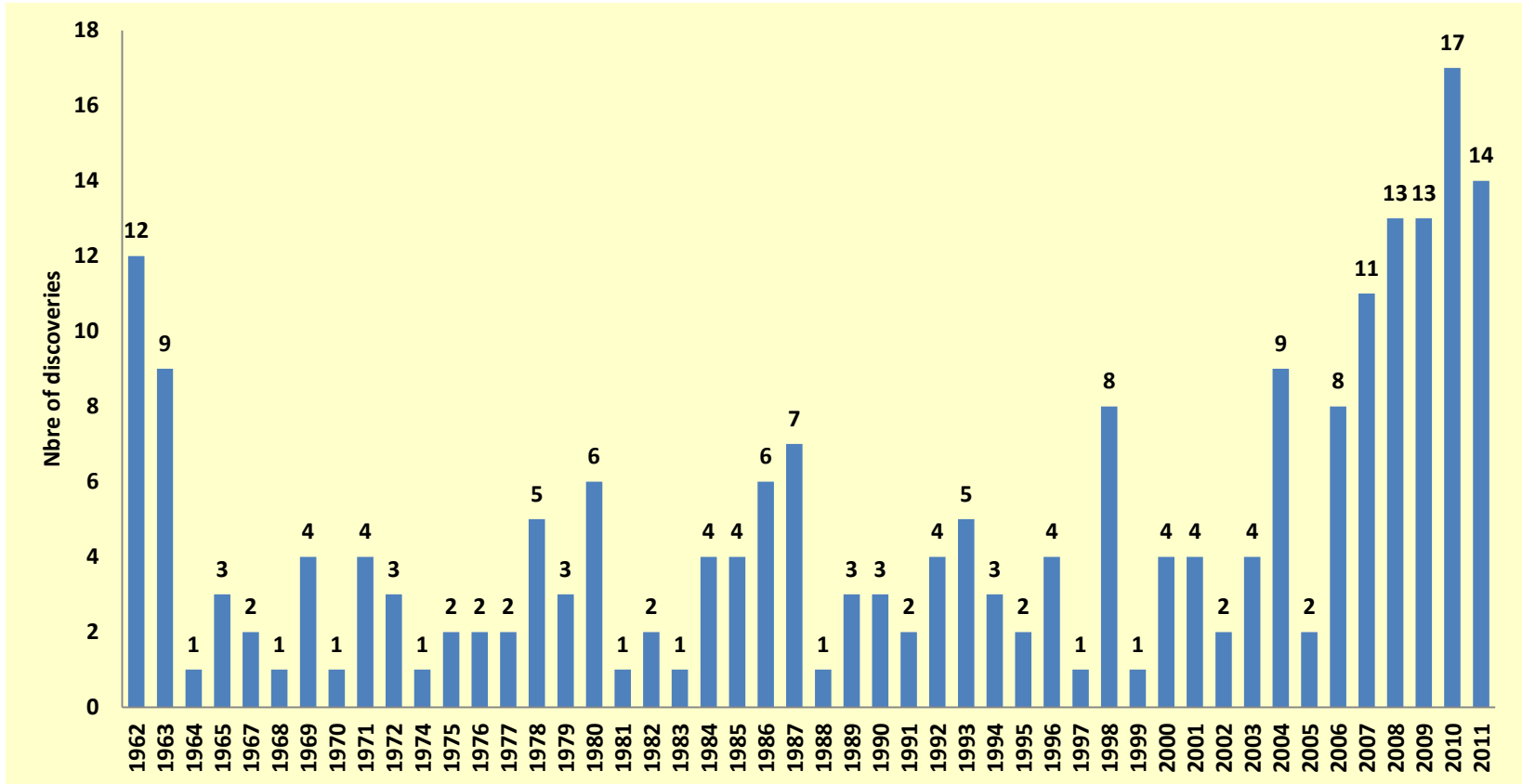
Several Oil discoveries totalling more than 7 bbls in place made mainly in the Berkine basin in the frame of the partnership.

## 2001 – 2010

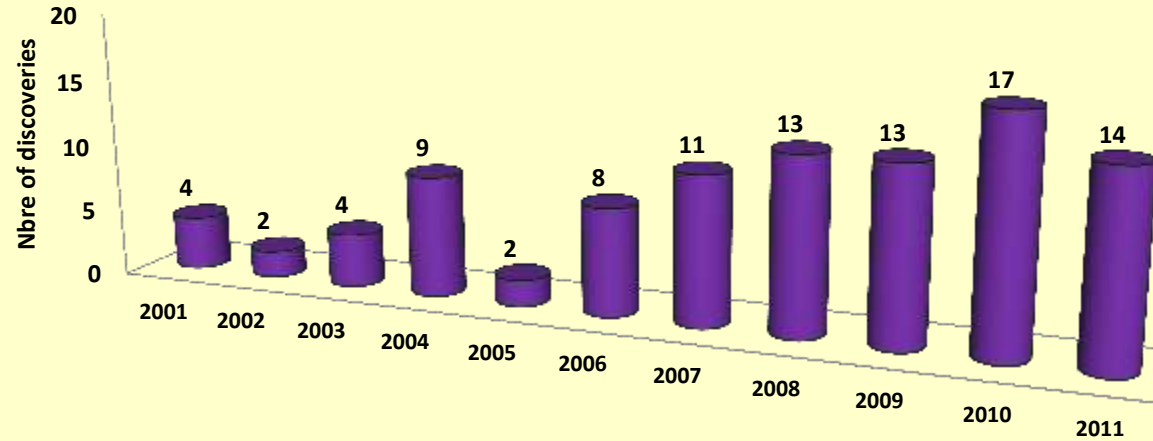
Several gas discoveries totalling more than 652 BCM –(23 TCF), in place made in the south basins ( mainly in Illizi and Berkine) and in the western ones ( Ahnet, Timimoun, Reggane)

**2011-2012** : discoveries in new areas ( north of Algeria and Bechar Basin)

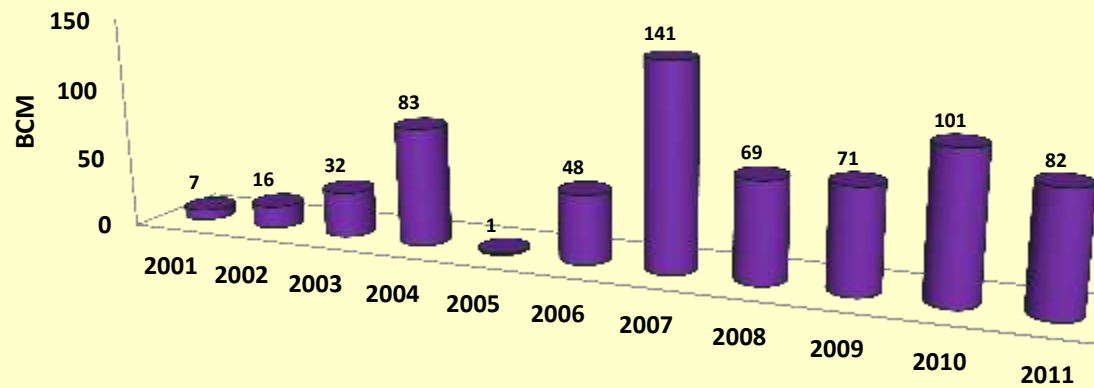
# Number of discoveries /year ( 1962-2011)



## Number of Gas discoveries



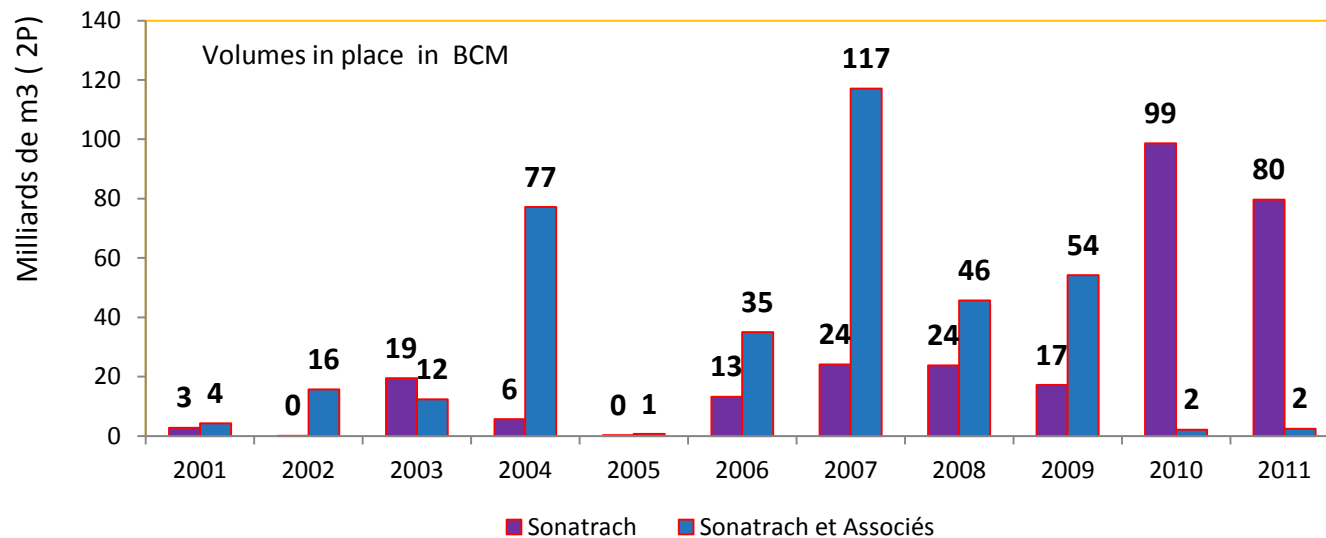
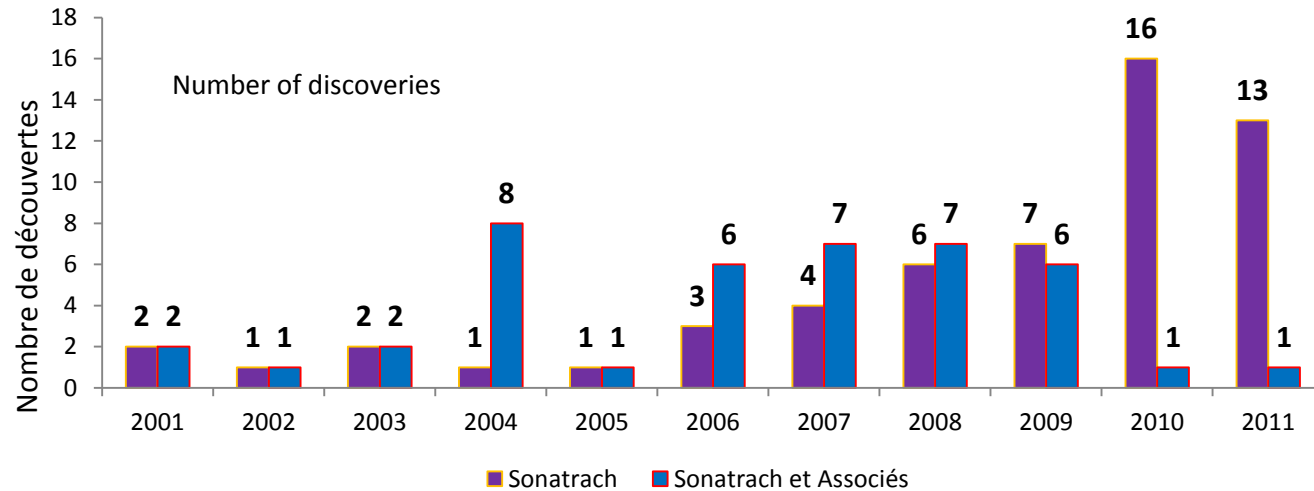
## Volumes 2P of Gas in place per year in BCM



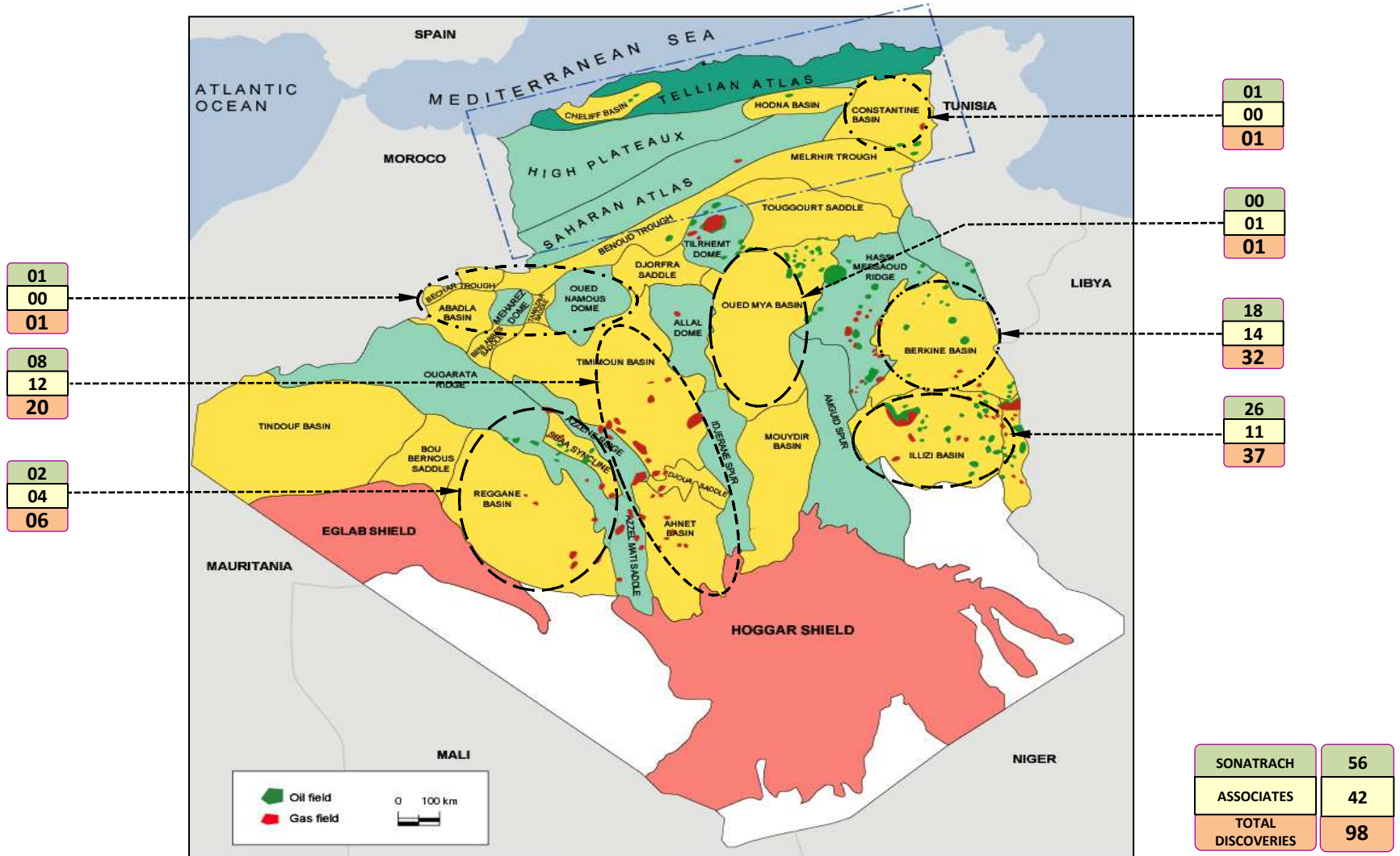


# Gas discoveries Sonatrach alone and Sonatrach with associates

## Period 2001-2011

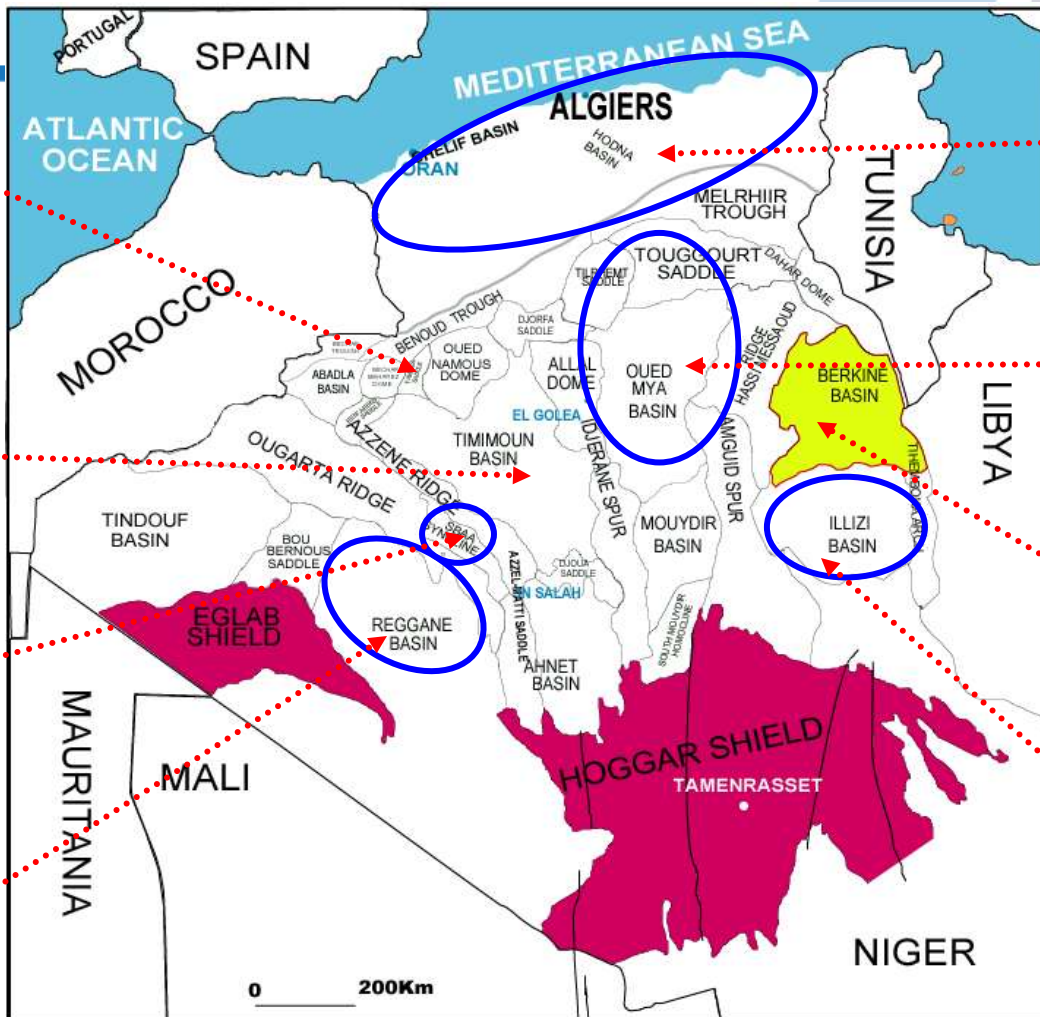


# Localisation of Gas Discoveries of Sonatrach & Associates (Period: 2000 - 2011)

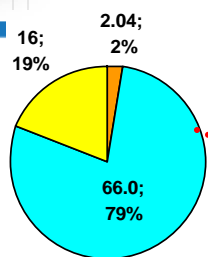


# Remaining potential in gas in Algeria

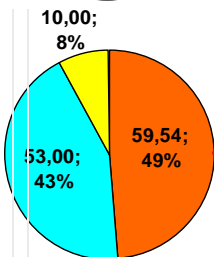
All Sonatrach internal studies, and studies carried out by consultants and also studies brought off by Sonatrach associates confirm the high Gas Potential of the Algerian mining domain.



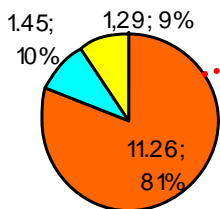
Bechar Basin



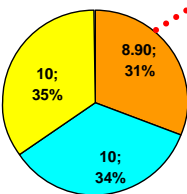
Gourara Basin



Sbaa Basin



Reggane Basin

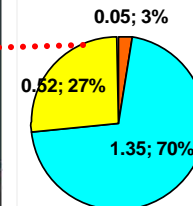


Reserve in place (Gas: Tcf)

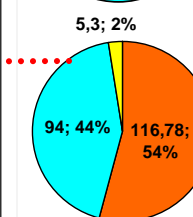
Resource in place (Gas: Tcf)

Potential in place (Gas: Tcf)

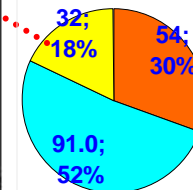
Northern Algeria



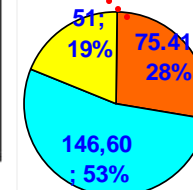
O. Mya / P. HMD  
P. H.Rmel



Berkine Basin



Illizi Basin



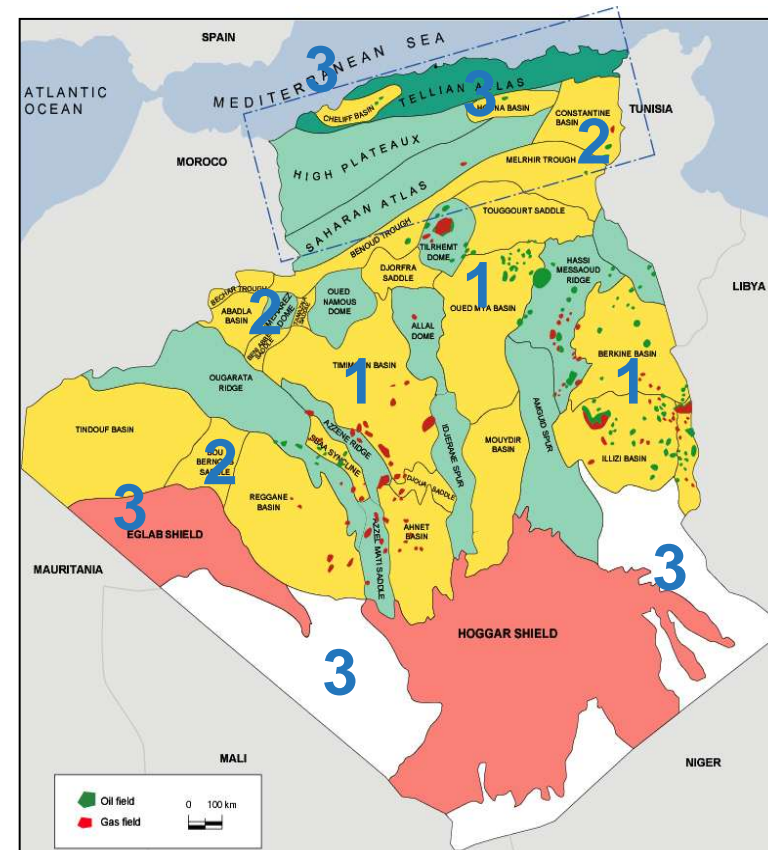
# Gas Potential of Algerian "Mature Basins"

| Basin   | Gas Resources (Tcf) |     | Gas Reserves (Tcf) |     | Gas Potential (Tcf) |     |
|---|---------------------|-----|--------------------|-----|---------------------|-----|
|   | Resources           | %   | Reserves           | %   | Potential           | %   |
| Cuvette de Sbaa   | 1.45                | 10% | 11.26              | 81% | 1.29                | 9%  |
| Bechar  | 16.0                | 19% | 2.04               | 2%  | 66.00               | 79% |
| P.HMD, P.HR & O. Mya                                    | 5.3                 | 2%  | 116.00             | 54% | 94.00               | 44% |
| Ahnet- Gourara  | 10.0                | 8%  | 59.54              | 49% | 53.00               | 43% |
| Reggane   | 10.0                | 34% | 8.90               | 31% | 10.00               | 35% |
| Berkine   | 32.0                | 18% | 53.90              | 30% | 91.00               | 52% |
| Illizi  | 51.0                | 19% | 75.00              | 28% | 146.60              | 53% |
| <b>Total Gas Potential (remaining to be discovered)</b> |                     |     |                    |     | <b>462 Tcf</b>      |     |

1 Tcf = 28.32 Bcm = 28.32\*10<sup>9</sup> m<sup>3</sup>



- In the short term
  - Illizi basin
  - Berkine basin
  - 1** ➤ Oued Mya basin
  - Ahnet – Timimoun basins
- In the short & mid terms
  - Sbâa basin
  - Reggane basin
  - 2** ➤ Constantine basin and Tellian nappe front
  - Bechar basin (Gas)
- In the mid & long terms
  - 3** ➤ Offshore
  - Frontier basins



- The totality of produced reserves since 1970's, has been renewed.
- New provinces and plays are emerging since 2000
- Internal and external studies confirm that ratio Discovered volumes / Remaining volumes is still weak and the exploratory effort must be increased
- Sonatrach has the will to maintain and increase the exploration effort in all areas : Mature, semi mature and frontier .



Thank you for your attention !