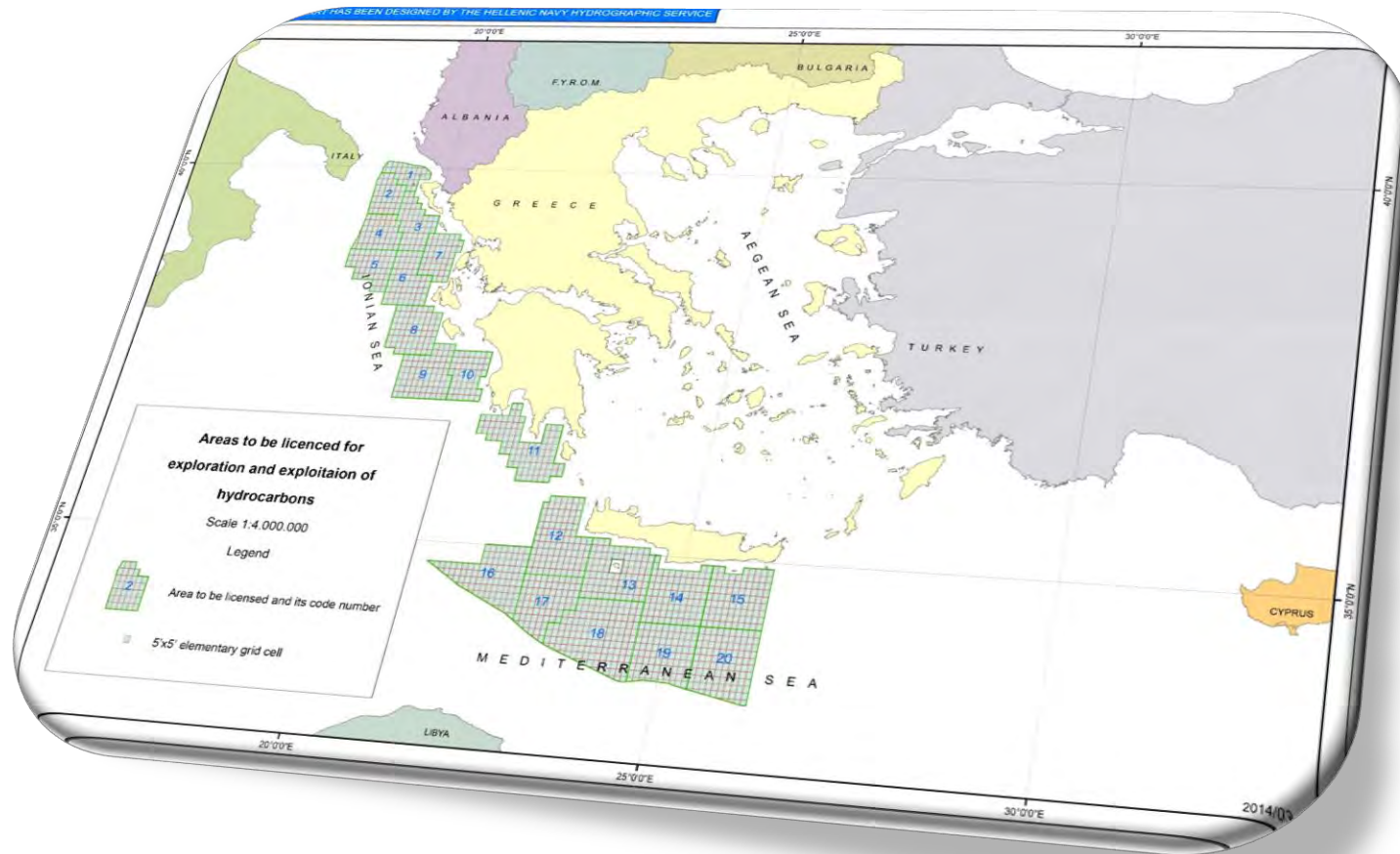


# Greece 2<sup>nd</sup> Offshore Licensing Round



Open Forum "Hydrocarbon Exploration and Production in Greece and the East Mediterranean"  
IENE, June 10, 2015



# Allocation of Petroleum Rights

## Petroleum Policy

### Principles

- The rights of prospecting, exploration and exploitation of hydrocarbons that exist in onshore areas, sub lake and submarine areas, where the Hellenic Republic has respectively sovereignty or sovereign rights, in accordance with provisions of the United Nations Convention on the Law of the Sea (UNCLOS), as ratified by Law 2321/1995, **belong exclusively to the State** and their exercise is always for the public benefit.
- The petroleum resources **shall be managed for the benefit of the Greek economy and the Greek society as a whole**



# Allocation of Petroleum Rights

## Petroleum Policy

**Petroleum resources = a gift of nature**

with important economic, development and strategic consequences

Translation of this gift into an economic & social result requires investment, effort and patience

### Primary concern :

- Maximize value (economic and social) creation through:
  - **legal / licensing framework**
  - **resources management system**
  - **knowledge development**
- Establishment of an upstream market
  - open and stable
- High focus and continuous attention to the environment and HSE



# Allocation of Petroleum Rights

## Licensing Policy

- Award of E&P licenses based on :
  - *geological understanding*
  - *technical expertise*
  - *financial strength*
  - *environmental, health and safety capability*
- Oil companies compete to be awarded license
- Awards are on non-discriminatory basis
- Transparent selection criteria improve the efficiency of the allocation system
- Bidding parameters should clearly reflect the objectives that the government wishes to pursue through allocation
- Work program bidding directly affects the quality and level of exploration investment in an area
- Plurality of ideas and internal balances in an E&P license



# Allocation of Petroleum Rights

## Resources' Management

- **Stepwise exploration with :**
  - Predictability, transparency, continuity and stability
  - Clarity of the State's role
  - Striking the right balance between attracting international E & P companies and the gradual building of domestic knowledge and industry
  - Encourage International participation
  - Establishment of strong public administrative capacity



# Allocation of Petroleum Rights

## Knowledge Development

### Geological knowledge affects:

- The definition of **efficient inter-temporal** exploration policies
- The perception of geological risk and related market interest (**maturity of a geological basin** affects the level of competition and the size of the winning bid)
- The design of appropriate strategies for licensing promotion, delineation of blocks, licensing terms etc. **that reflect the risk profile**

### Market knowledge:

- The **expected oil and gas prices** are a significant factor in explaining the variability over time in the number of bids and bid size for the same geological basin, particularly in frontier and immature areas
- **Market segmentation**—the extent to which different companies specialize in different types of exploration activities and tolerate different risks—is of great relevance to the design of efficient allocation systems
- **International competition**

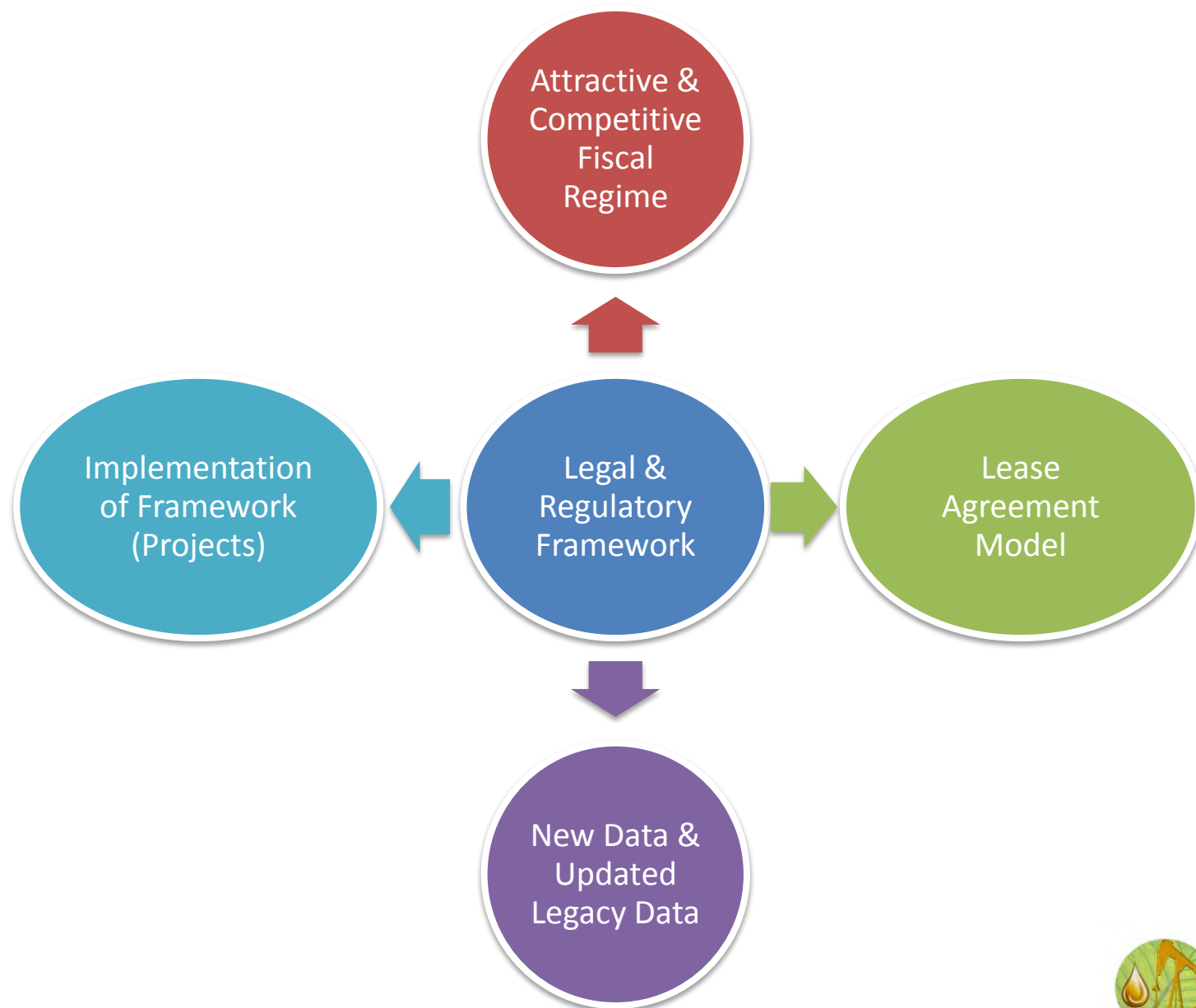


# Allocation of Petroleum Rights

- *At the time of allocation, neither the government nor the investors know the true value of the blocks being offered for licensing*
- *Therefore, **progressive fiscal systems** allow them to reduce the risk and to correct inefficiencies due to imperfect information at the time of allocation*



# 2011 - The resurgence of the Hellenic Upstream Sector





## Updated Legal & Regulatory Framework

Law 2289/1995

- **Prospecting, Exploration and Exploitation of Hydrocarbons (EU directive 94/22/EP has been adopted)**

Law 4001/2011

- **Improvement of the existing framework set by Law 2289/95**
  - **Adaptation of best international practices and experiences**
  - **Transparent, Competitive & Investment friendly legal framework**

Establishment of Hellenic Hydrocarbons Resources Management S.A. (“H.H.R.M.”),

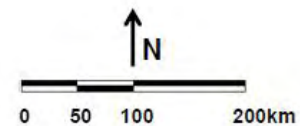
- **Competent Authority, exercising the Hellenic Republic’s rights on Hydrocarbon resources (upstream activities and licensing)**

New Data &  
Updated Legacy  
Data

## Reprocessed Legacy 2D Data

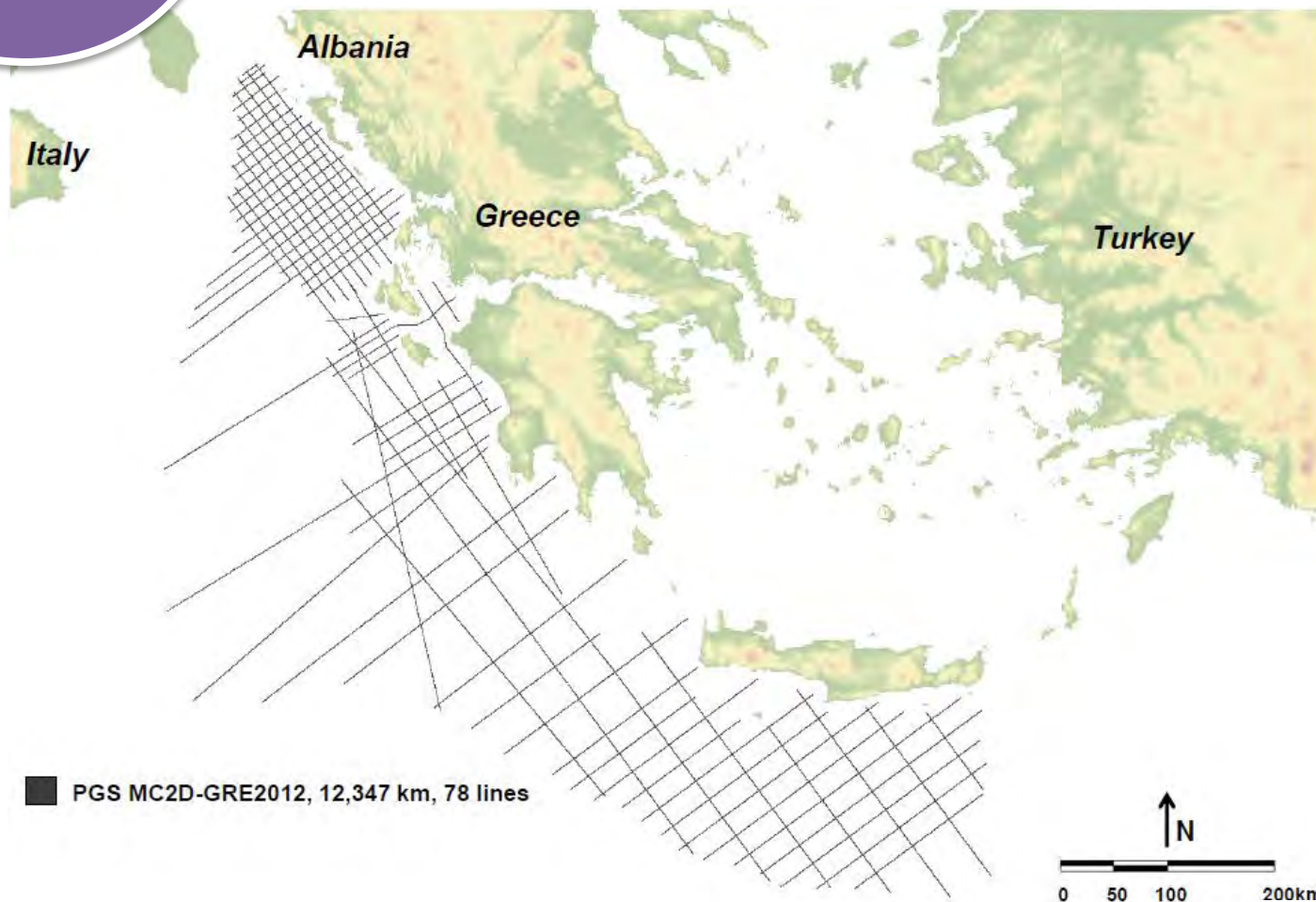


■ Legacy reprocessed MP2D, 9,727 km, 259 lines



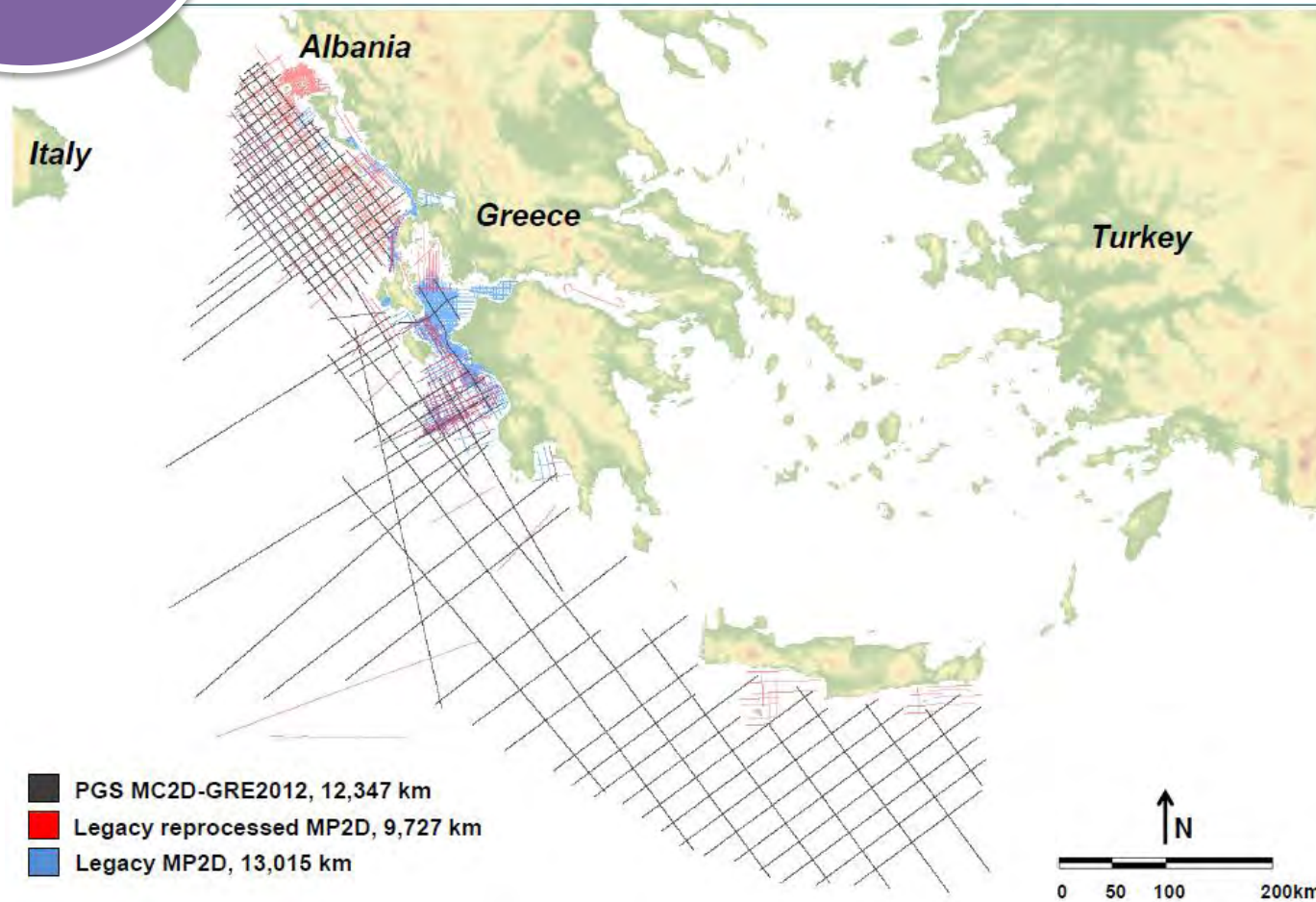
New Data &  
Updated Legacy  
Data

## New 2D Data



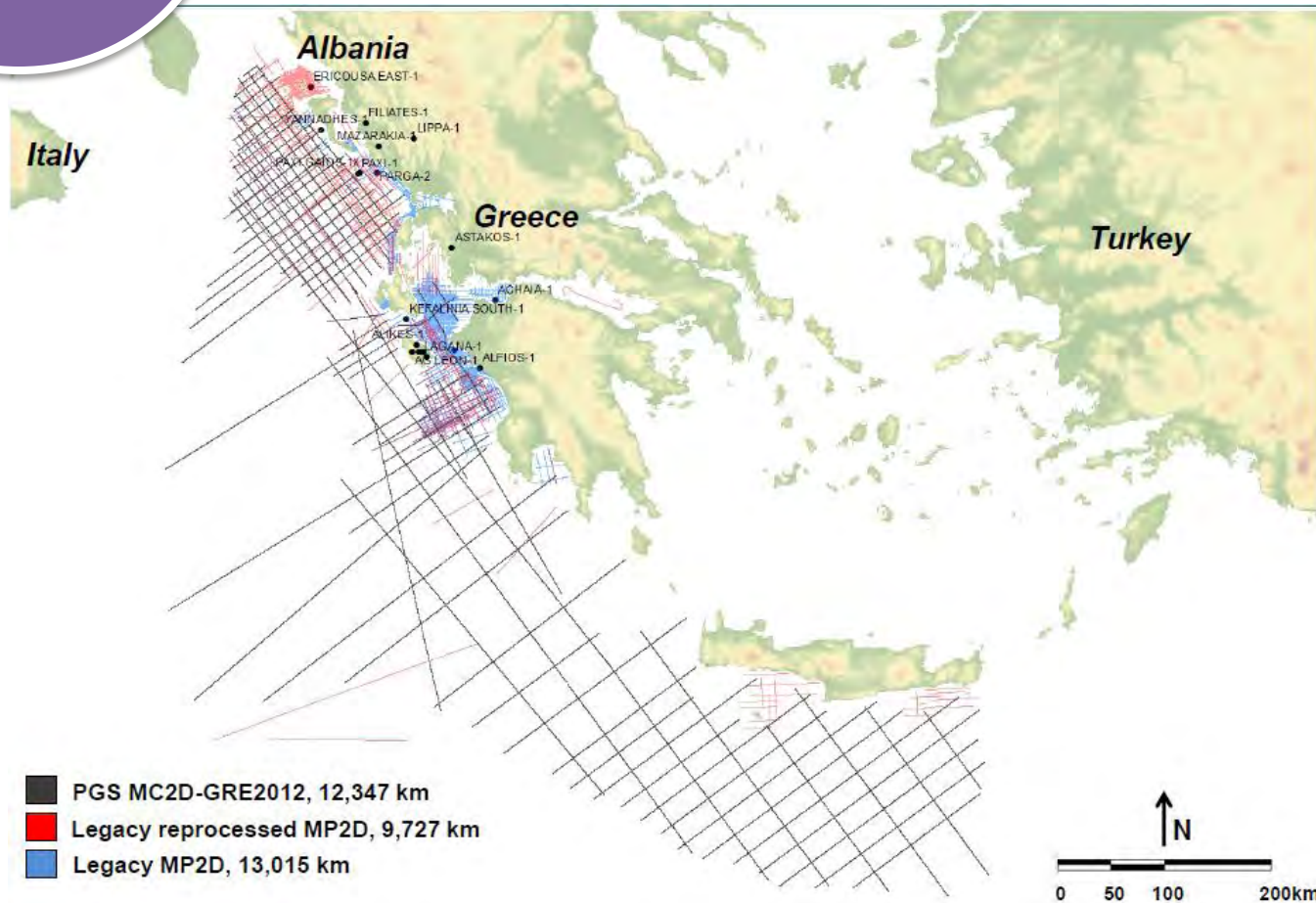
New Data &  
Updated Legacy  
Data

## Total 2D Data



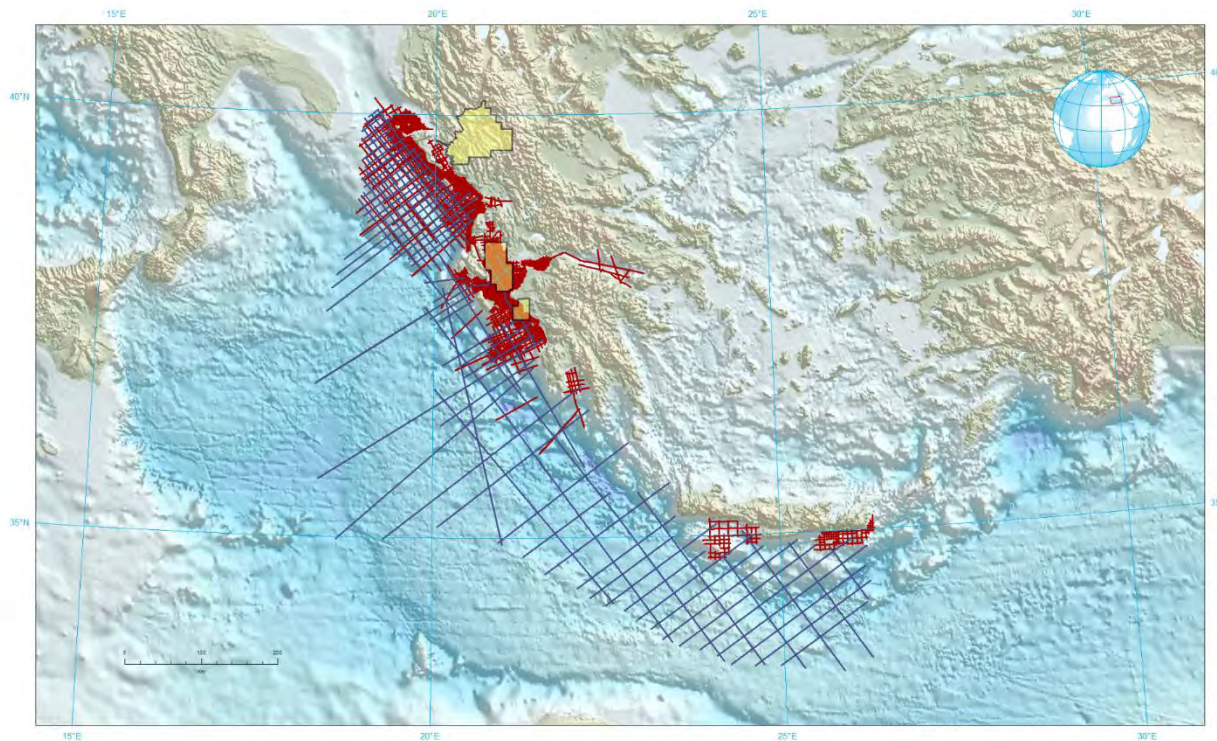
New Data &  
Updated Legacy  
Data

## Total 2D Data + Wells



New Data &  
Updated Legacy  
Data

## Basins Coverage

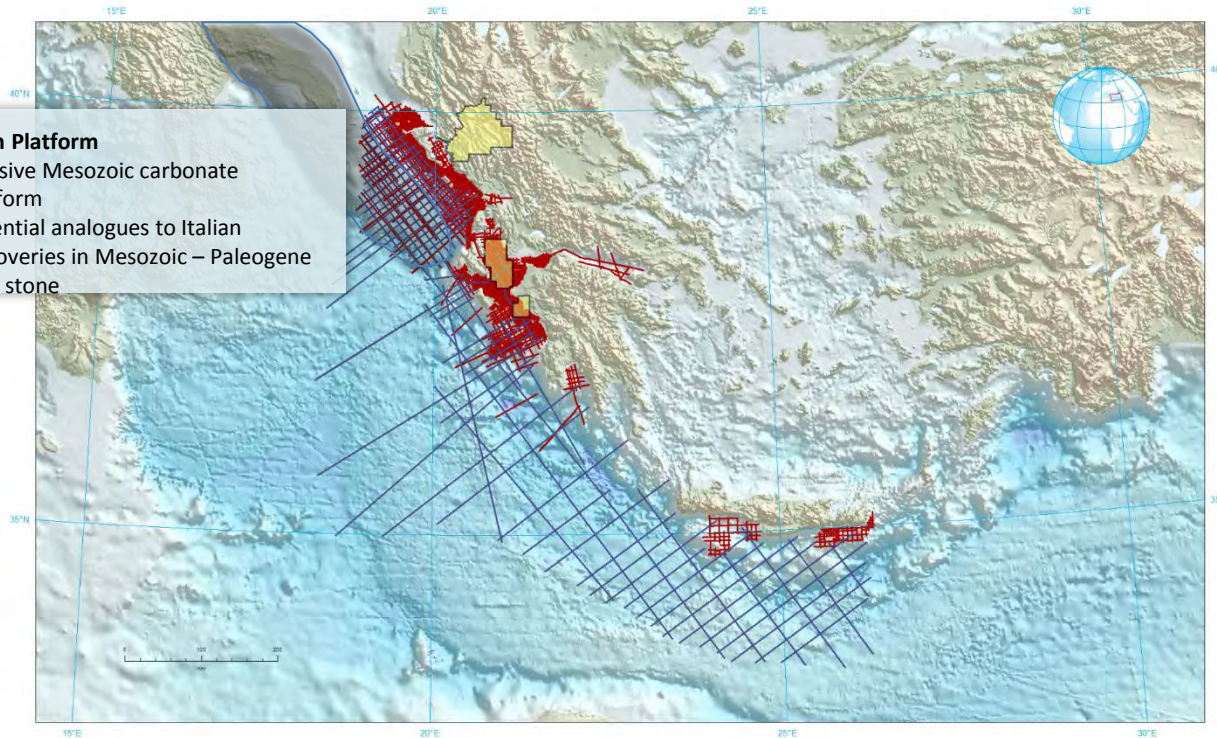


New Data &  
Updated Legacy  
Data

## Basins Coverage

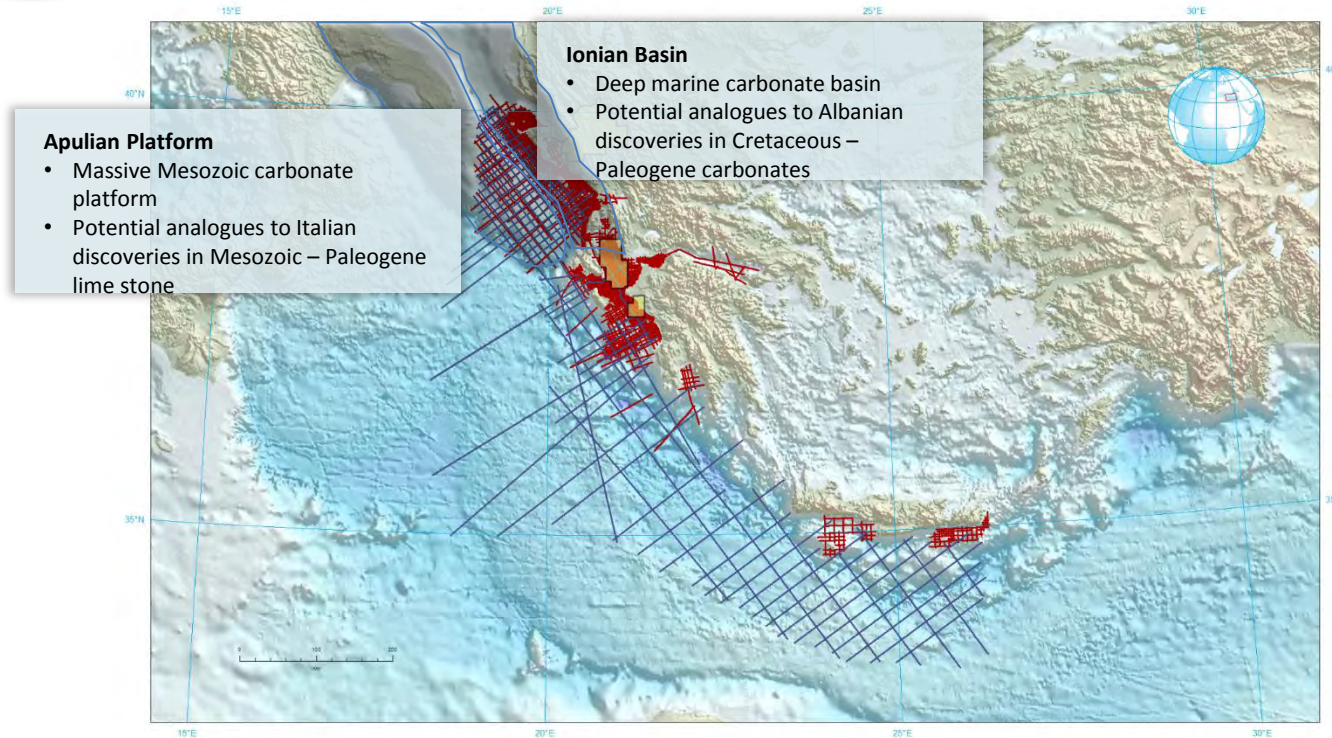
### Apulian Platform

- Massive Mesozoic carbonate platform
- Potential analogues to Italian discoveries in Mesozoic – Paleogene lime stone



New Data &  
Updated Legacy  
Data

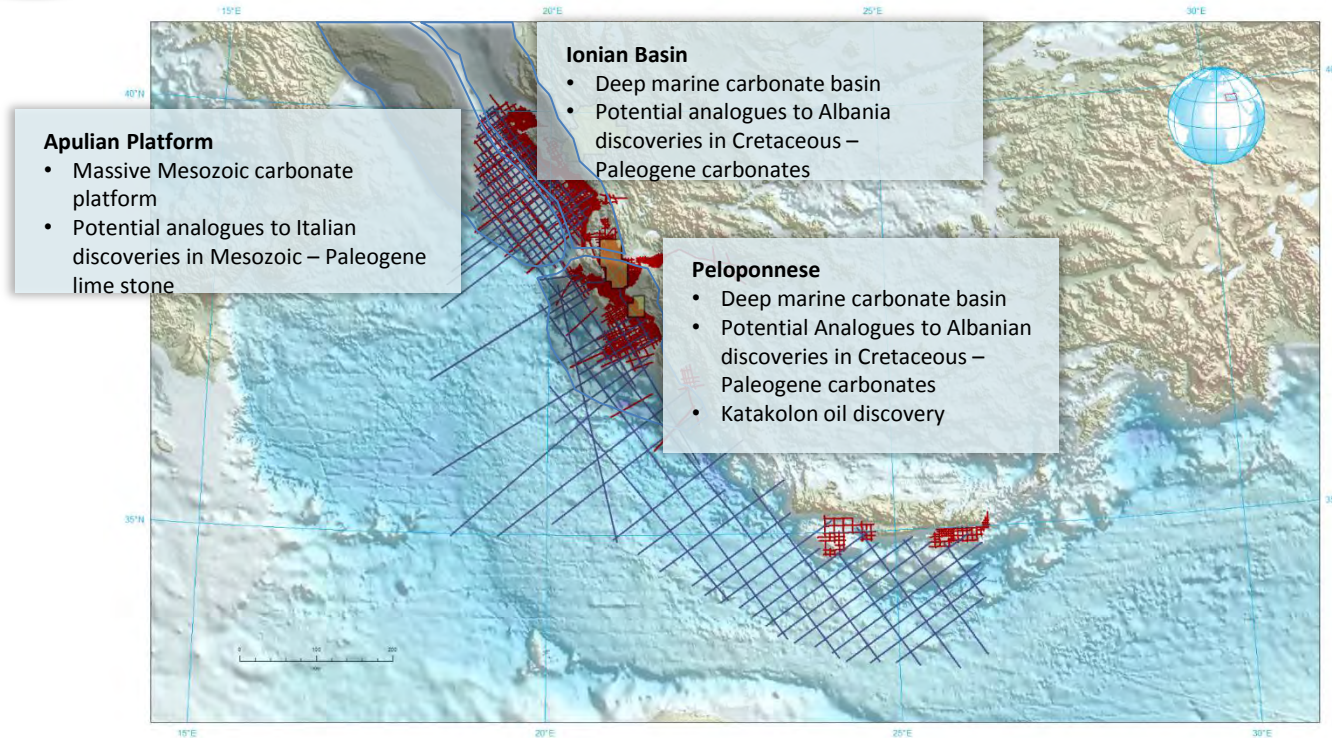
## Basins Coverage





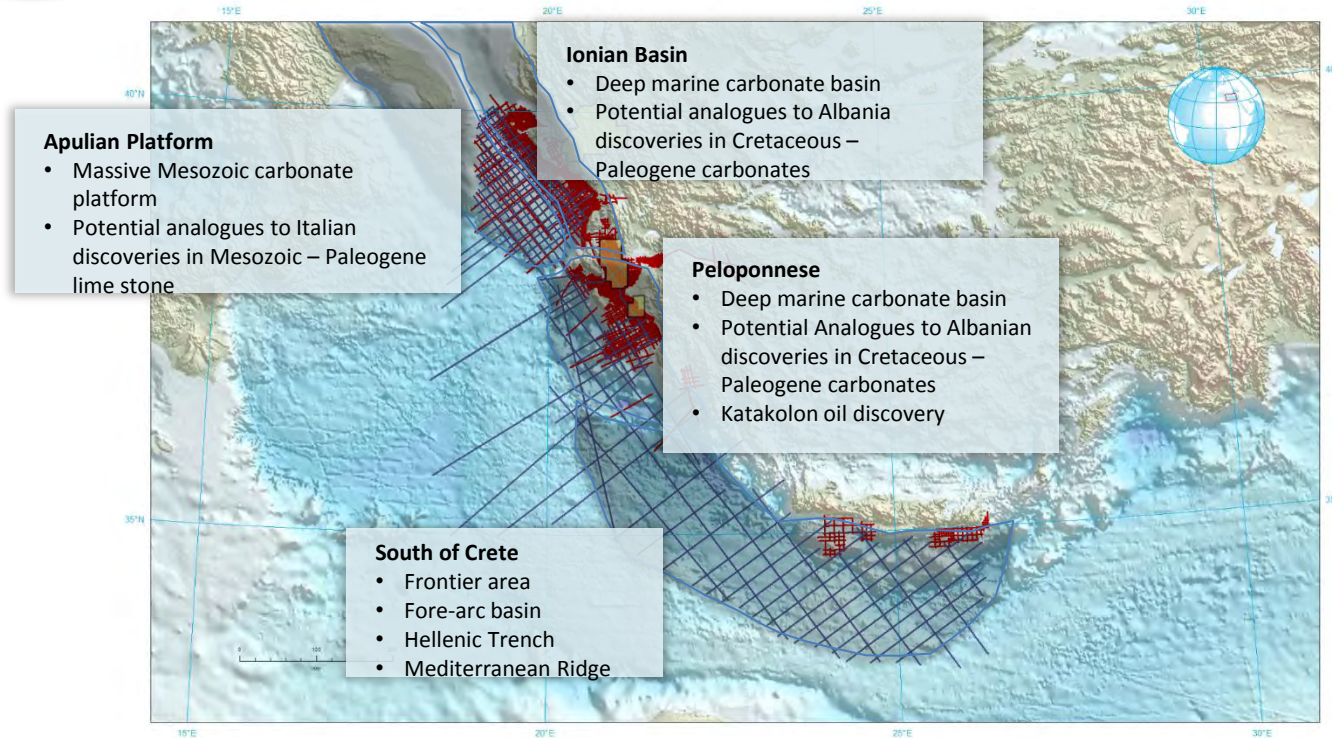
New Data &  
Updated Legacy  
Data

## Basins Coverage






New Data &  
Updated Legacy  
Data

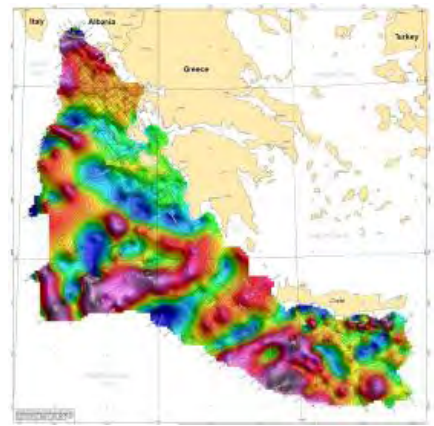
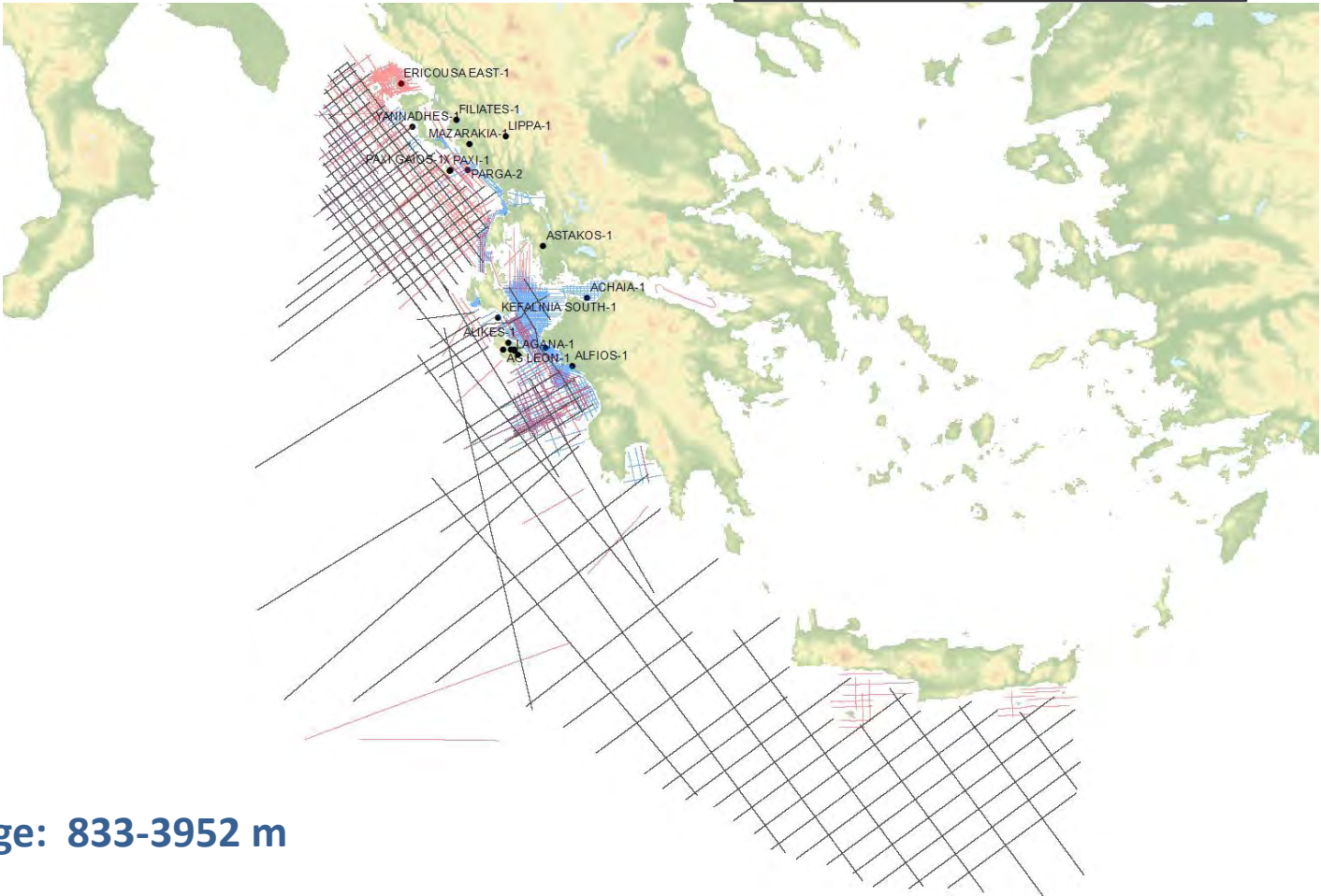
## Basins Coverage



New Data & Updated Legacy Data

# Greece Mega Project : 35,000 line km 2D

|   |                                 |                 |
|---|---------------------------------|-----------------|
|  | <b>MC2D GRE2012:</b>            | <b>12,347km</b> |
|  | <b>MP2D Legacy Repro:</b>       | <b>9,727km</b>  |
|  | <b>MP2D Legacy Conditioned:</b> | <b>13,015km</b> |



New Grav/Mag data

19 Wells of Depth range: 833-3952 m

Interpretation Report



Implementation  
of Framework  
(Projects)

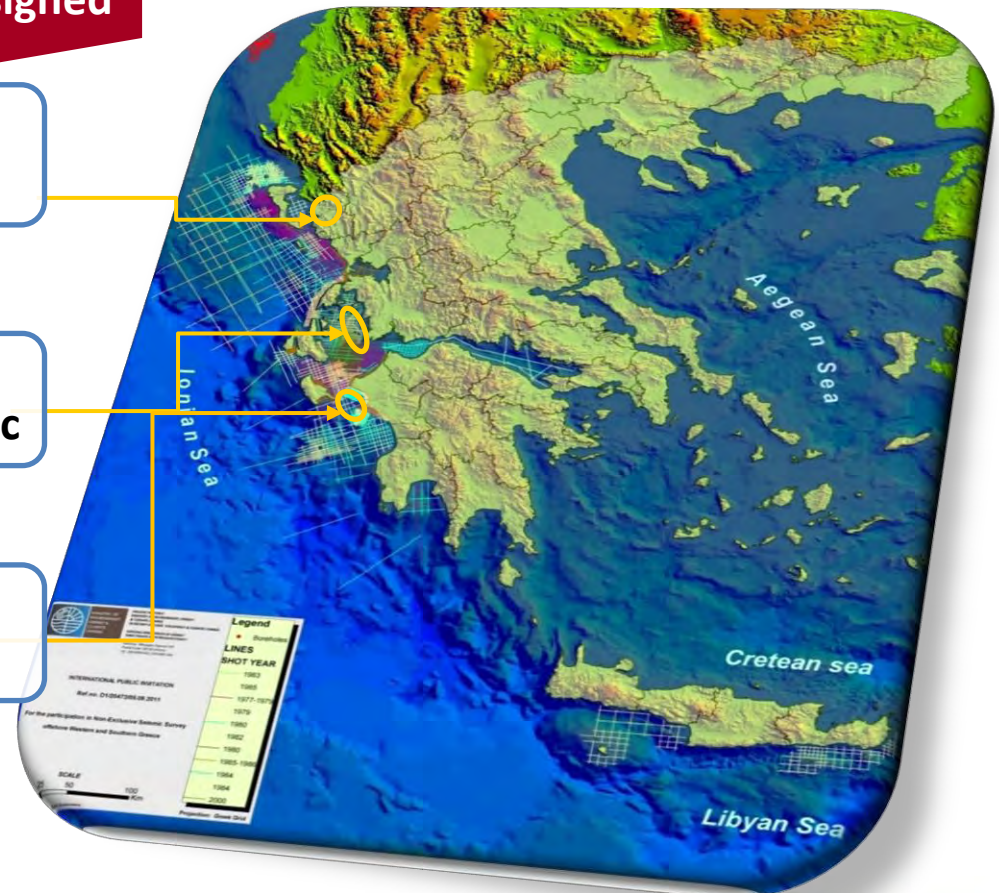
## Open Door Tender

Lease Agreements  
have been signed

Ioannina (onshore)  
Energean

Patraikos Gulf  
Helpe, Edison, Petroceltic

Katakolo (offshore)  
Energean, Trajan



Implementation  
of Framework  
(Projects)

## Individual Initiatives

International Tender  
Publication in the EU Gazette  
(2014/C 390/05)  
Submission date: 6<sup>th</sup> February 2015

1. Arta-Preveza

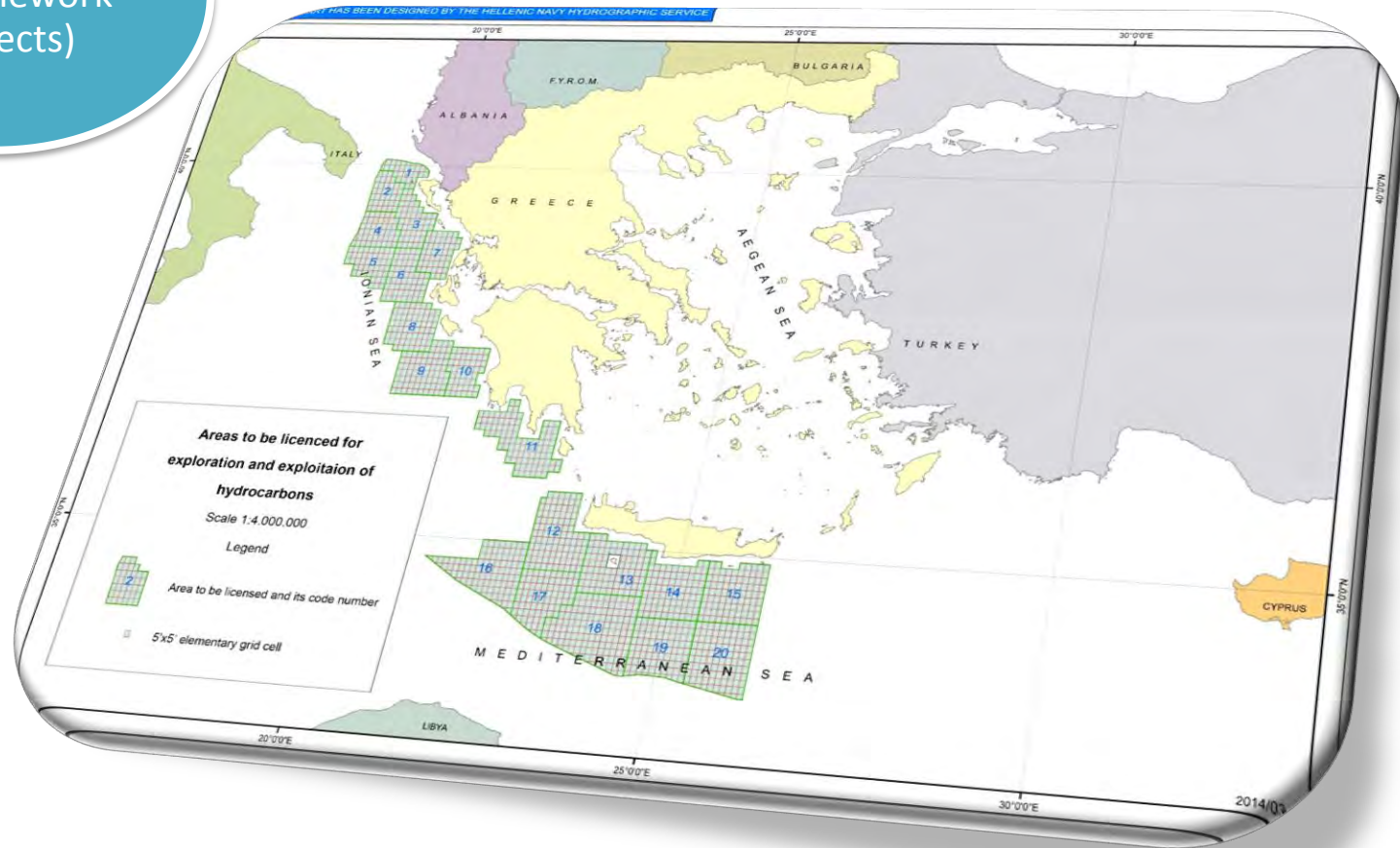
2. Aitoloakarnania

3. NW Peloponnese

Applications are under  
evaluation

Implementation  
of Framework  
(Projects)

## 2<sup>nd</sup> Offshore Licensing Round



**Offshore Area: Western Greece and South Crete  
A New Frontier & Emerging Hydrocarbon Region**

# Call for Tenders

## Invitation – Legal Framework

The invitation refers to areas available in accordance to section 2, §17(a) of Law 2289/1995 as in force in the offshore part of Western Greece and South Crete that belongs to the Hellenic Republic as part of its continental shelf

The Licensing Round is subject to the provisions of **Law 2289/1995** as amended by **Law 4001/2011**

The Hellenic Republic shall enter into a **Lease Agreement** with each Selected Applicant on the basis of **Royalty/Tax** arrangements

# Call for Tenders

## Basic Lease Terms

Licensing

Exploration

Exploitation

Exploration stage is divided into 3 phases linked to a specific Work-Program

### Initial Period

- **8 years offshore**

### Extension

- **Extension up to 50% of the initial period may be approved under specific terms and written consent of the Lessor**
- **Any other extension requires a resolution by the Ministerial Cabinet**
- **Total extensions can not exceed the 100% of the initial period**

### Exit

- **Exit possibility at the end of each Phase**



# Call for Tenders

## Basic Lease Terms

Licensing

Exploration

Exploitation

Exploitation is based on an approved development and production plan, which is submitted by the Lessee

### Initial Period

- **25 years**

### Extension

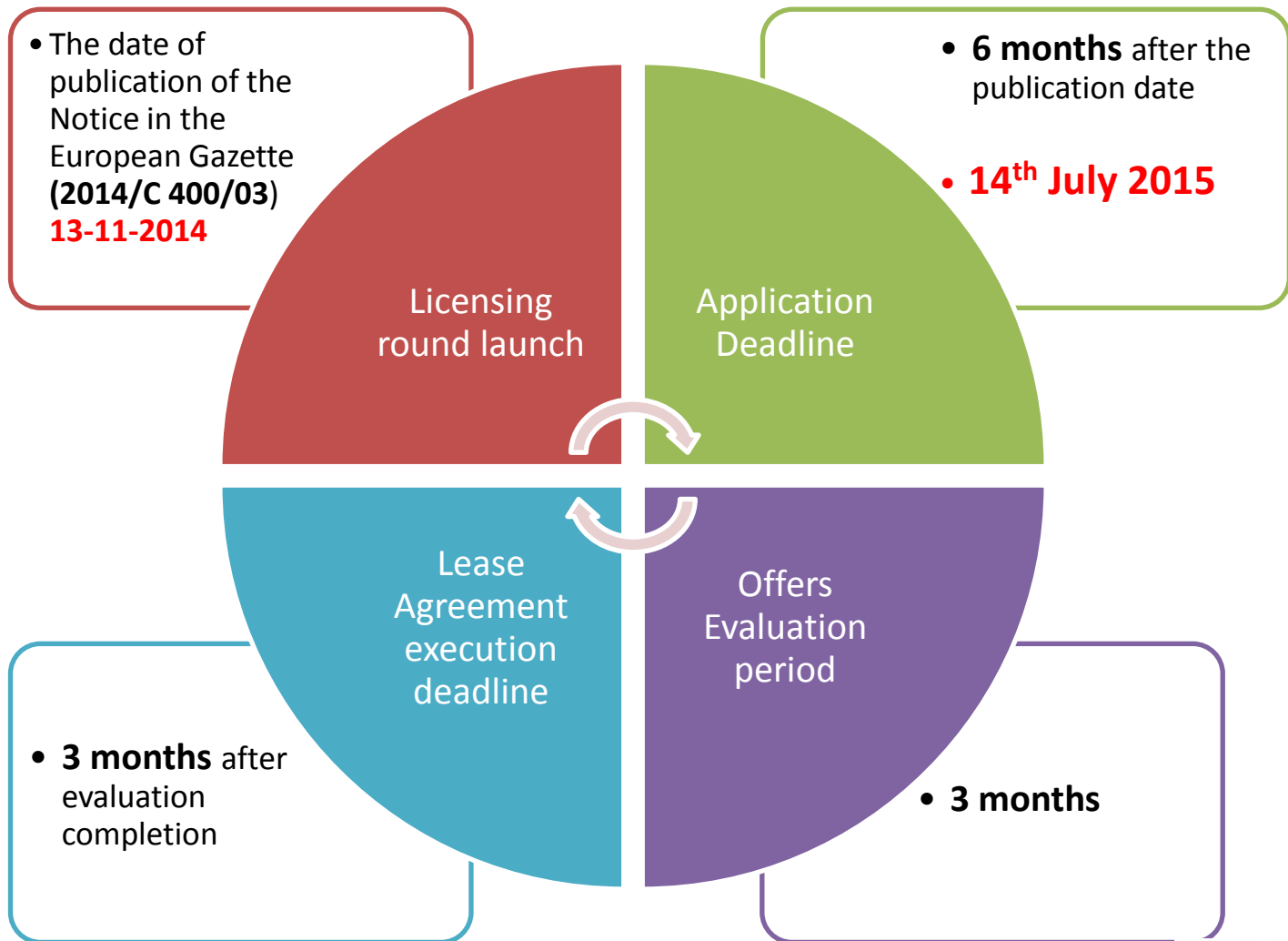
- **Extension may be approved up to 2x5 years under specific terms**
- **Subject to re-negotiation of the agreement terms and signing of new agreement**

### Area

- **Exploitation area is up to 100 sq. km (can be extended to 200 sq.km)**
- **Safe termination - Remove installations – Restore environment to its original condition within a period of 6 months**

# Call for Tenders

## Tentative Licensing Round Time Schedule



# Call for Tenders

## Participation Prerequisites

### a. Application Fee

### b. Bid Guarantee

### c. Data Purchase

- Purchase all PGS MC2D-GRE2012 seismic data within the block(s) applied for and no less than a minimum amount of 1500 line-km of the PGS MC2D-GRE2012 seismic data. In case of 2 members a price reduction of 10% is valid, of 3 or 4 members, 20% or 30% respectively

### d. Interpretation Report Purchase

- Purchase the 2D Interpretation Report of 2014 *“New Exploration Opportunities - Offshore Western Greece & South Crete”*

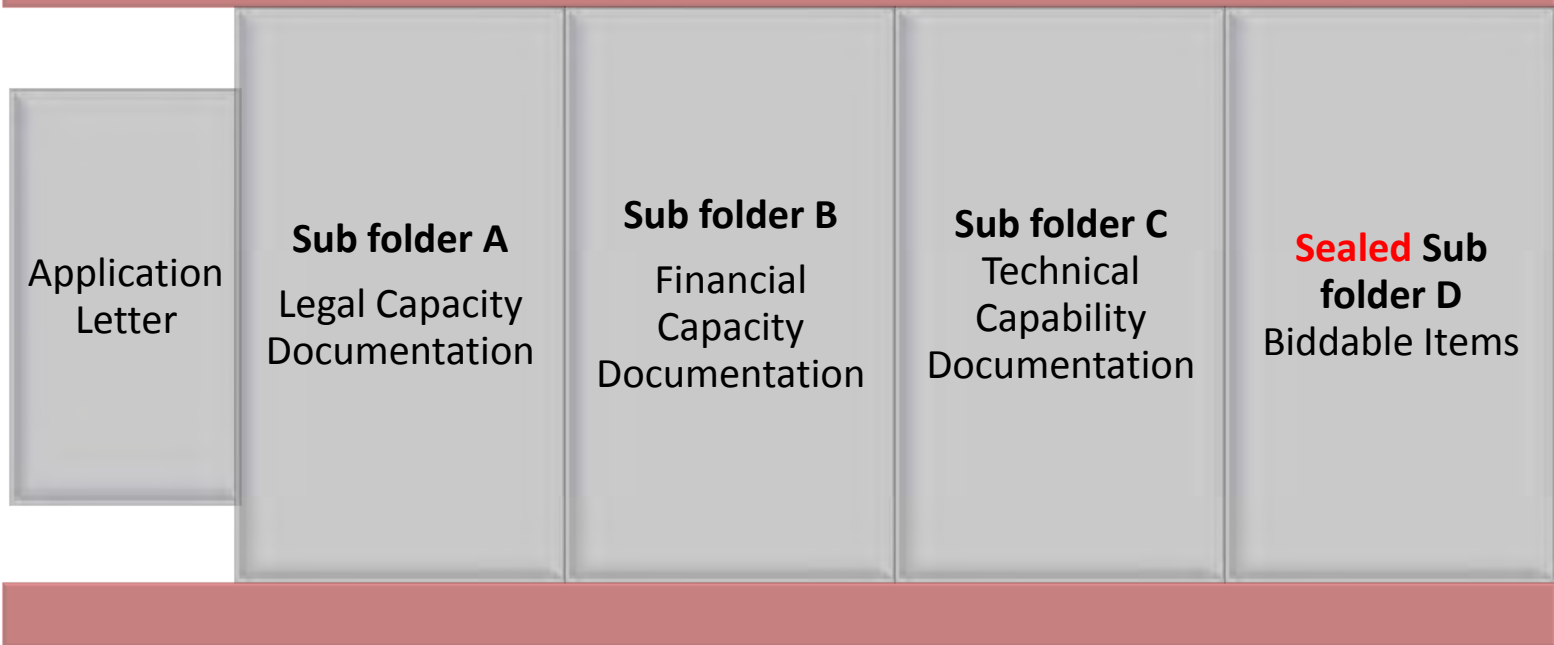
Where the Applicant is a Consortium, the requirements (c) and (d) must be fulfilled by each Consortium Member. The money paid for (a), (c), and (d) will not be reimbursed under any circumstances

# Call for Tenders

## Submission of Applications



Applicants are allowed to submit Applications for more than one Blocks. In such case, **separate and independent** Applications in separated envelopes are required for each Block



# Call for Tenders

## Technical Capability Documentation (Operator) 1/2



---

Key oil/gas fields (or areas) that are currently operated or developed by the Applicant. The role and level of responsibility in each actual project should be stated (Operator or Participant).

---

Operatorship experience in deep and ultra deep water areas (**offshore**)

---

Countries in which the Applicant has been active in E&P operations in the last 5 years

---

Proven & Probable reserves during the last 5 years

---

Acreage holding (in sq km) for the last 5 years

---

Average production of hydrocarbon (MMboe) for the last 5 years

---

Experience of operating in environmentally sensitive areas. Operator's qualification on HSE, QA-QC etc

---

# Call for Tenders

## Technical Capability Documentation 2/2



---

Any lack of efficiency and responsibility or non-performance displayed by the Applicant on obligations under licenses previously granted.

---

Details of any fines or other punitive measures issued by any regulatory body with respect to environmental damage, rehabilitation and protection of nature and the environment concerning any of the Applicant's activities

---

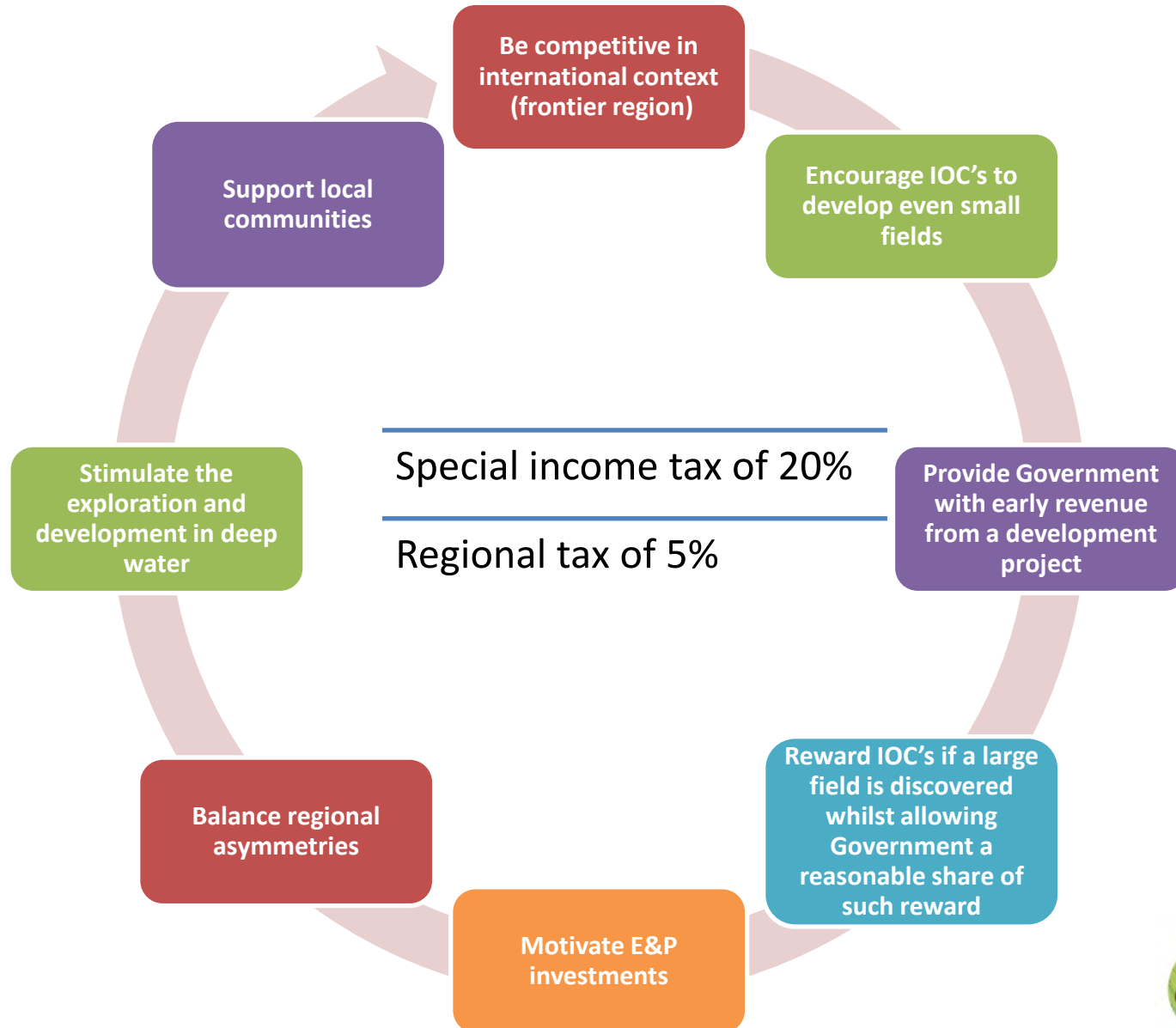
Experience of key personnel in exploration and production operations

---

The in-house capabilities of the Applicant

# Call for Tenders

## Fiscal regime-Governmental fiscal objectives



# Call for Tenders

## Fiscal regime- Biddable & Negotiable Terms



**Minimum exploration work program for each exploration phase**

**Financial Guarantee** (euro commitment corresponding to the estimation of the work program)

**Royalties:** imposed on a sliding scale  
tax-deductible  
based on the ratio R/C (R Factor) of gross cumulative revenues to cumulative costs

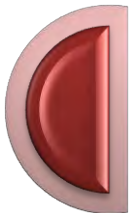
- Royalties will range from a lower limit of **4%** of the quantity of Hydrocarbons and By-Products Produced and Saved in the Contract Area, in cash or in kind, when  **$R \leq 0.5$**
- Tranches escalation:  **$0.5 < R \leq 1.0$ ,  $1.0 < R \leq 1.5$ ,  $1.5 < R \leq 2.0$  &  $R > 2.0$**

**Depreciation** escalation 40% - 70% (*Capital expenditure not recovered in any fiscal year during the lease and may be carried forward to the subsequent fiscal years*)

**Signature and Production** bonus (not recoverable)

**Relinquishment** ranging from 20-50% of the original contract area at the end of each exploration phase

**Annual Training & Support** of human resources of the public administration



Biddable & Negotiable  
Terms



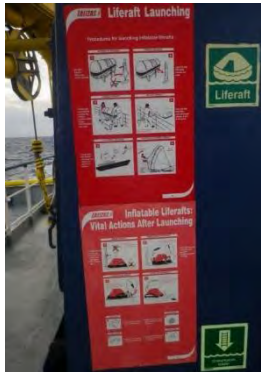
# Call for Tenders

## Standards & Regulations – **Non Negotiable...**



### Greece as a EU Member State is:

- Committed to all relevant international protocols, agreements and EU legislation
- Adapting the new **2013/30/EC Offshore Safety Directive**. A Working Group is already preparing a draft of the relative transposition law
- Activities must comply with generally accepted best oil practices, in full compliance with **European energy and environmental legislation**
- Licensees are bound to follow the recommendations and comply with **the results of the SEAs**
- Each E&P project will require EIA according to the Law 4014/2011 and may commence only after **the relevant EIA license is granted**



**Public awareness and consensus of local societies !**

# Call for Tenders

## Minimum Exploration Work Program Description



A minimum exploration work program must be submitted for each Exploration Phase.

The quality of the work program and the timeframe for evaluating the full potential of the area applied for is of great importance.

Regional geology approach within the Block Area

Brief hydrocarbon geological analysis - Prospectivity of the Block Area (stratigraphic, sedimentology, structural framework, basin development etc)

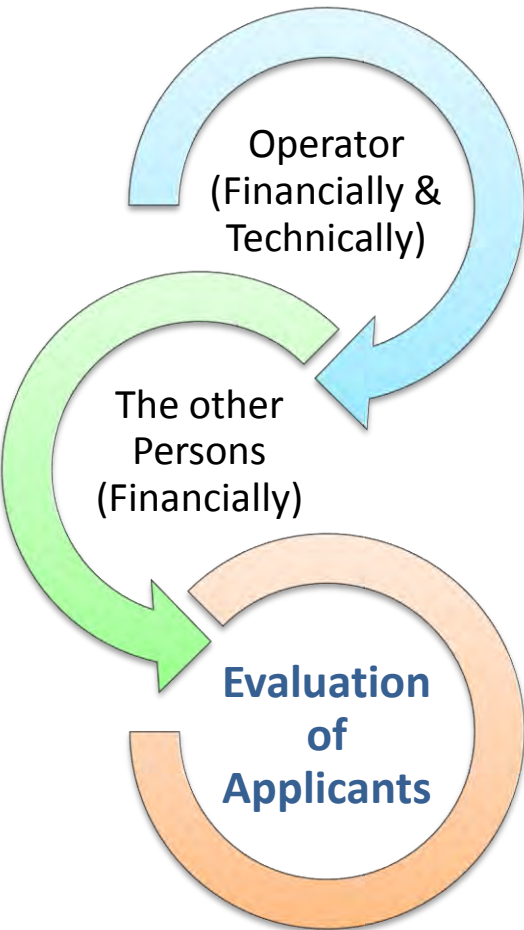
Leads & play models

Exploration strategy, obligatory work commitment and time schedule for the various exploration phases

Environmental plans and systems and their implementation

# Call for Tenders

## Evaluation System



## Evaluation Criteria

---

The Financial capacity, Technical capability & Professional expertise of the Applicant

---

The proven experience of the Operator

---

The Applicant's geological understanding of the area in question, **the quality of the work programme** and the timeframe for evaluating the full potential of the area

---

The biddable technical & fiscal terms

---

The experience of carrying out drilling works in the presence of HP and H2S

---

The experience of operating in environmentally sensitive areas and in areas where tourism is an important earner

---

Past compliance with licencing frameworks in other countries

---

# Call for Tenders

## Evaluation Procedure 1/2



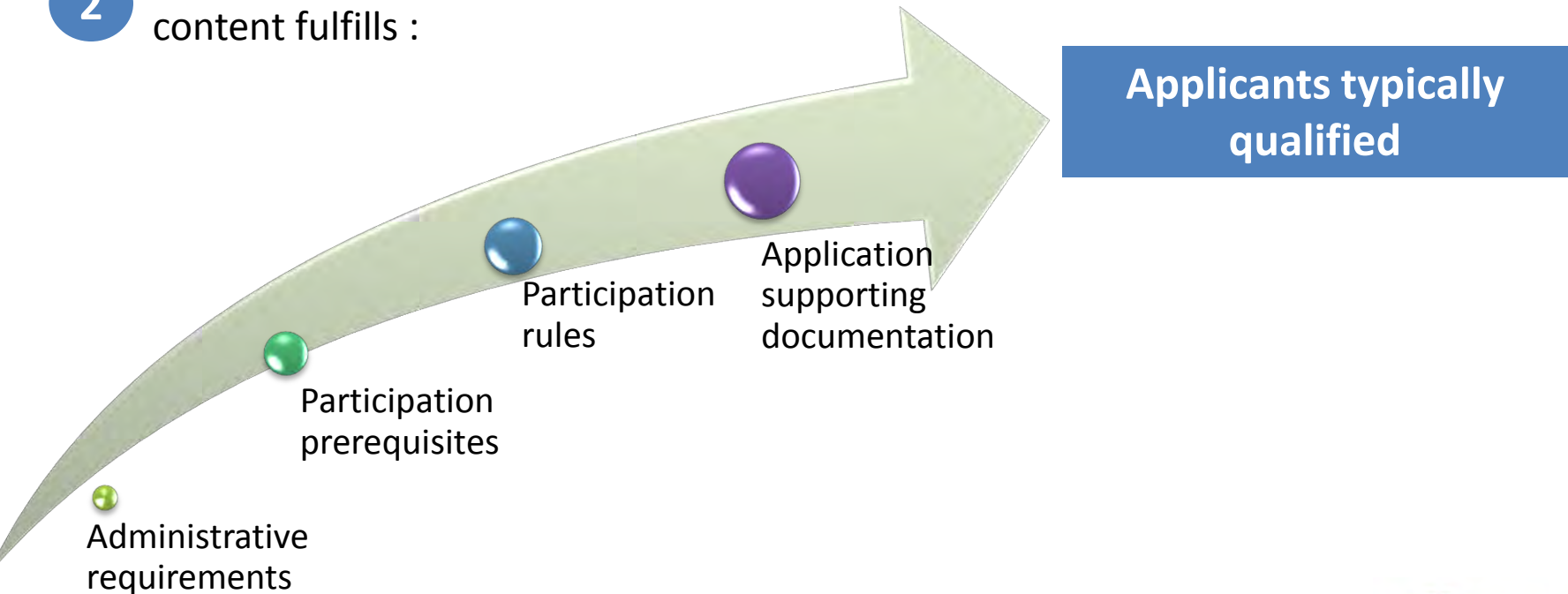
### Evaluation Committee

1

Application Envelopes shall be unsealed and submitted documentation shall be recorded at a public meeting of the Evaluation Committee (within 10 days after the Applications deadline). Sub folder D remains sealed

2

The Evaluation Committee shall convene to examine whether Application Envelope's content fulfills :



# Call for Tenders

## Evaluation Procedure 2/2

3

For **Applicants typically qualified**, the Evaluation Committee shall thoroughly examine and evaluate their financial capacity & technical capability (**Applicants financially & technically qualified**)



4

For **Applicants financially & technically qualified**, the Evaluation Committee shall convene to unseal subfolder C and Applicants' scoring and ranking will be conducted according to the evaluation mark scheme. Applicants will be invited by the Evaluation Committee to negotiate competitively for the block applied for. **Negotiations will be conducted on the basis of the biddable items**



5

After the conclusion of negotiations, the Evaluation Committee shall submit in writing to the Minister the ranking list, followed by a proposal to the Minister to nominate the Selected Applicant.



# Call for Tenders - Evaluation Mark Scheme

| Criteria       | Items for Evaluation                                    |                            | Mark (Up to) | Weight (%) |
|----------------|---|----------------------------|--------------|------------|
| Technical      | First Exploration Phase<br>(3 years)                    | 2D seismic survey (km)     | 40           | 40         |
|                |   | 3D seismic survey (sq. km) | 60           |            |
|                |   | Other surveys              | 10           |            |
|                |   | Exploration wells          | 150          |            |
|                |   | Financial commitment       | 100          |            |
|                | Second Exploration Phase<br>(3 years, 2 years -onshore) | 2D seismic survey (km)     | 5            |            |
|                |   | 3D seismic survey (sq. km) | 25           |            |
|                |   | Exploration wells          | 70           |            |
|                |   | Financial commitment       | 50           |            |
|                | Third Exploration Phase<br>(2 years)                    | 2D seismic survey (km)     | 5            |            |
|                |   | 3D seismic survey (sq. km) | 15           |            |
|                |   | Exploration wells          | 60           |            |
|                |   | Financial commitment       | 50           |            |
| Financial      | Royalties   |                            | 250          | 60         |
|                | Bonuses   | Signature Bonus            | 100          |            |
|                |   | Production Bonus           | 20           |            |
|                | Training  | During Exploration         | 20           |            |
|                |   | During Production          | 5            |            |
|                | Depreciation  |                            | 10           |            |
| Relinquishment |   | 5                          |              |            |



# Call for Tenders

## Elements for the Design of Blocks

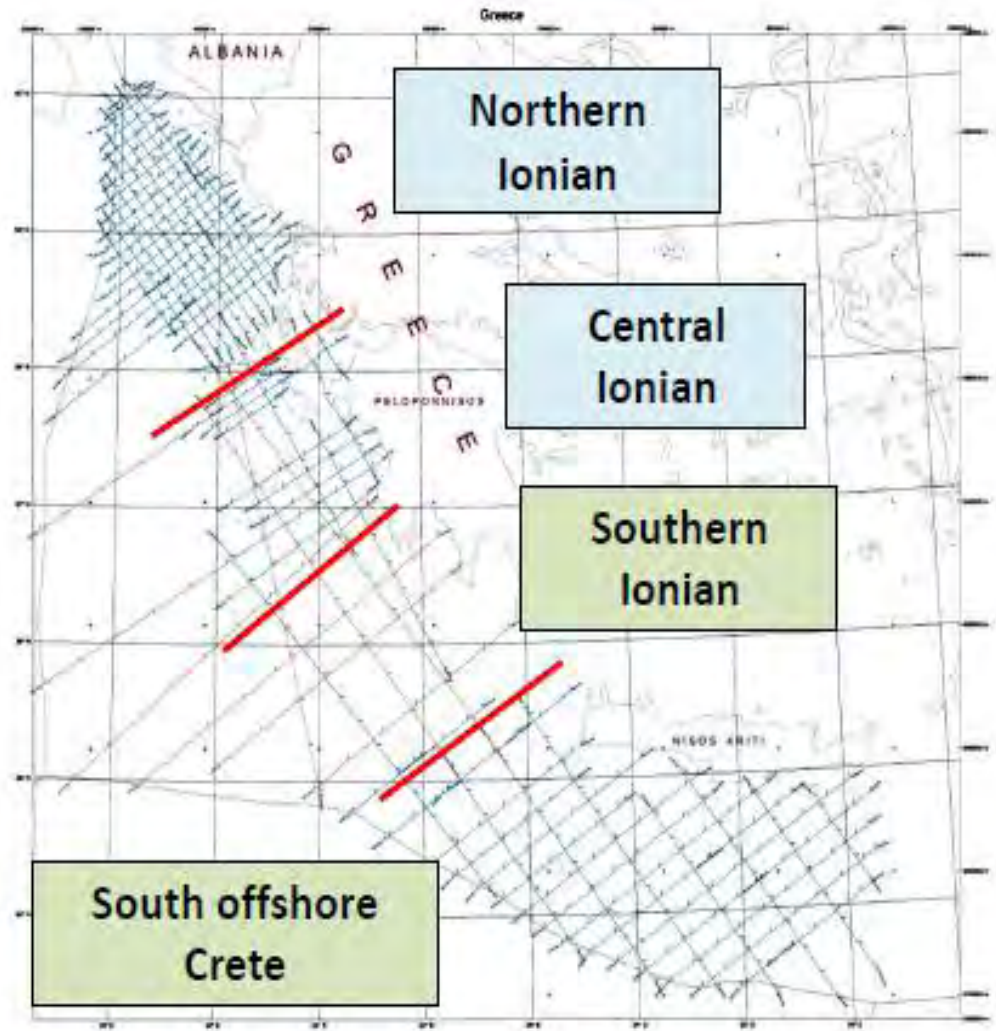
### Exploration Maturity

#### Potential Prospectivity:

- Plays/leads/prospects identified
- Estimated risks
- Depth of potential objectives

**North Ionian & Central Ionian** are proven petroleum provinces (reservoir, traps)




**South Ionian & South of Crete** are frontier areas with hydrocarbon indications

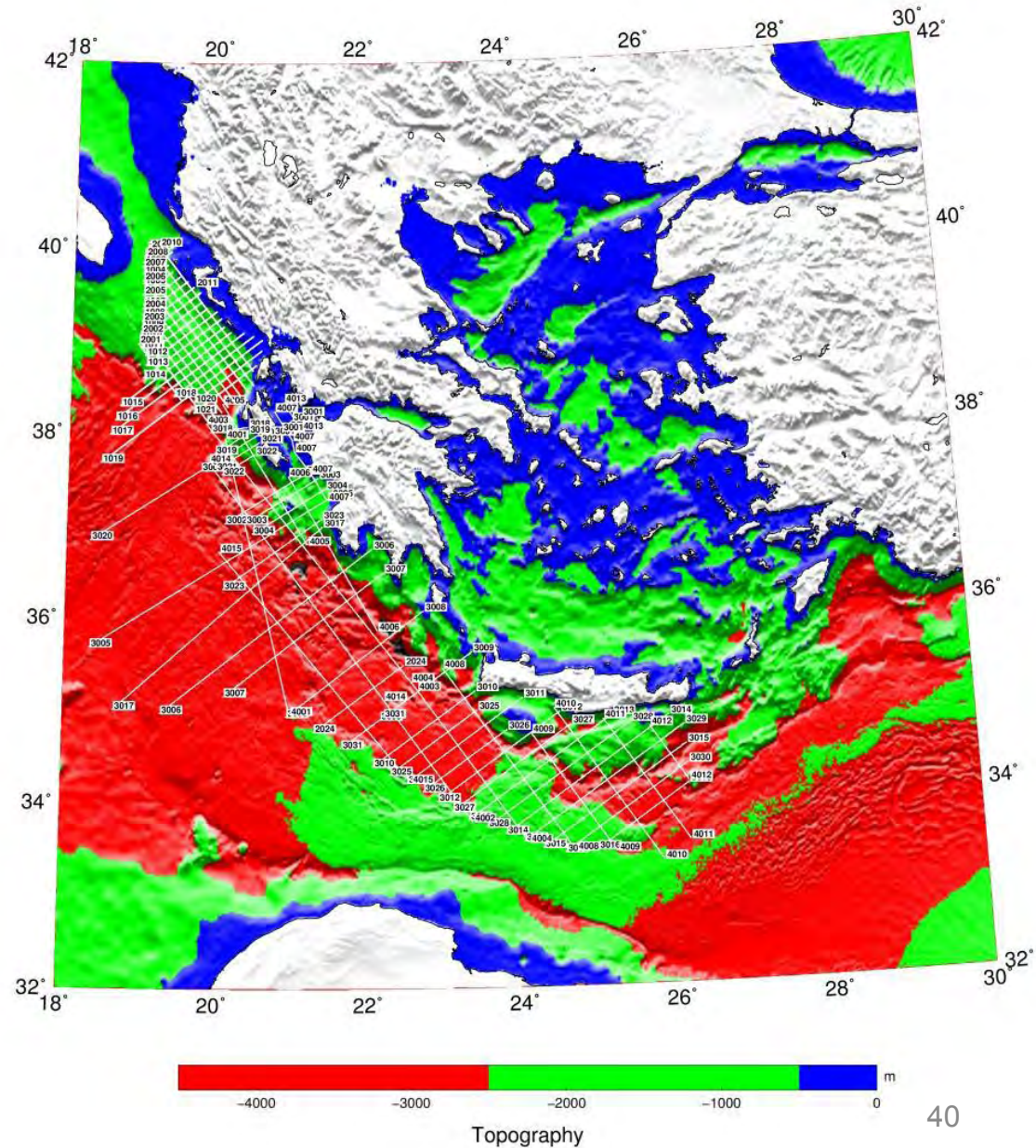


# Call for Tenders

## Elements for the Design of Blocks

### Water Depth

-  : between the coast line and 500m
-  : between 500 and 2500 m
-  : beyond 2500 meters

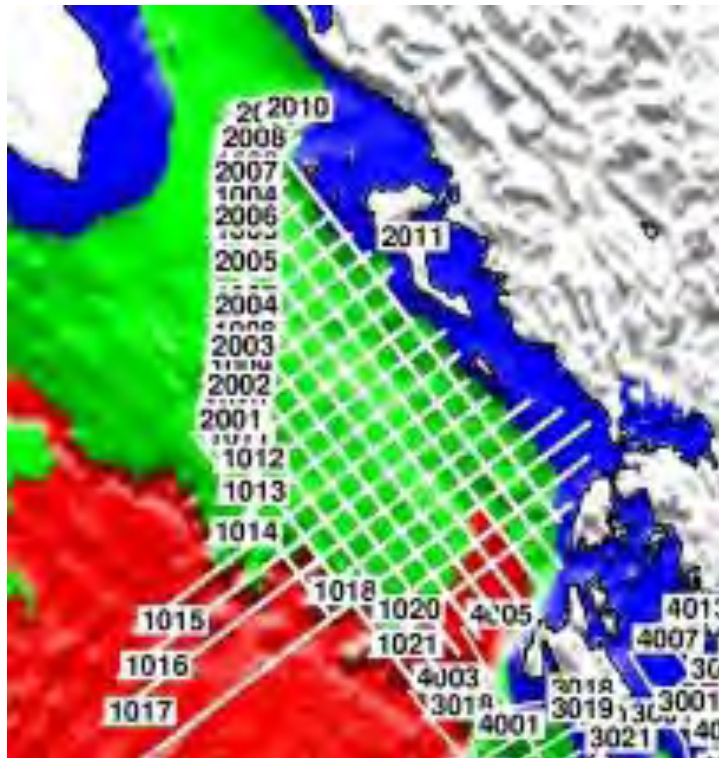




# Call for Tenders

## Elements for the Design of Blocks

### Data Density

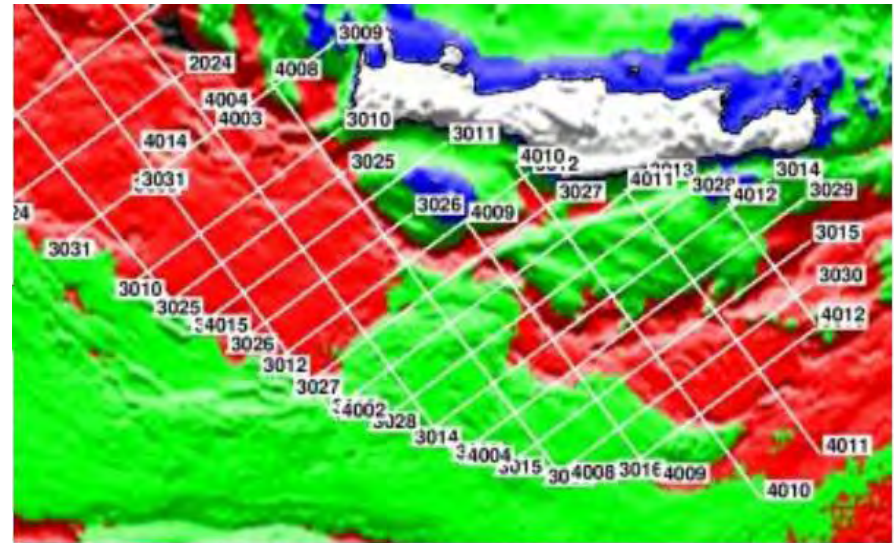


**North Ionian**

Area: 30 000 sq km

PGS 2D seismic lines: 3800 km

Legacy 2D seismic lines:  
5500 (R) +3300 (C) km



**South offshore Crete**

Area: 70 000 sq km

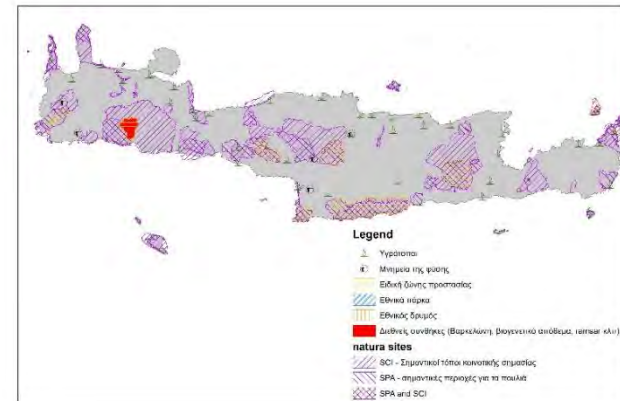
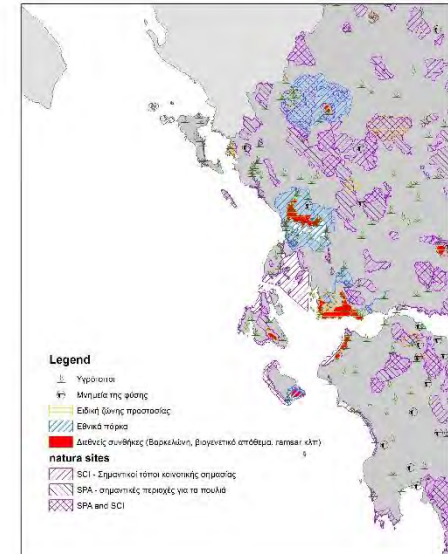
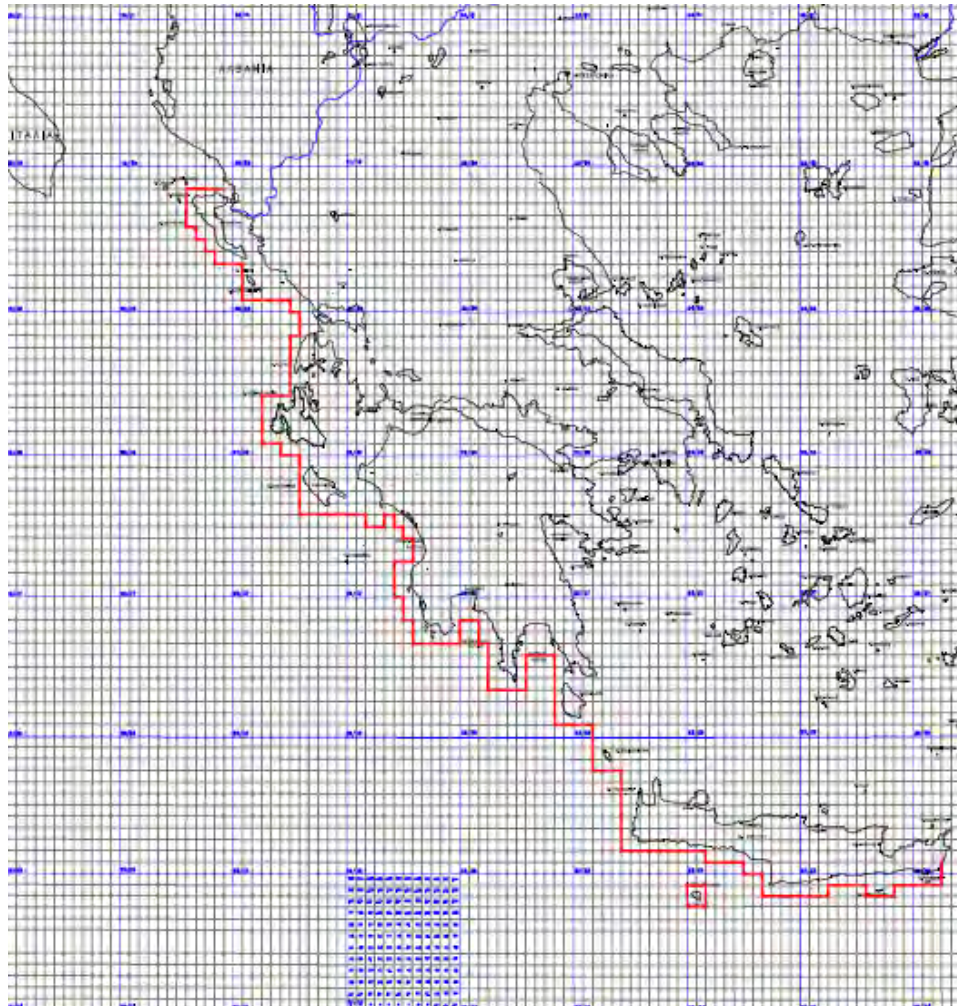
PGS 2D seismic lines: 4000km

Legacy 2D seismic lines:  
700 (R) km

# Call for Tenders

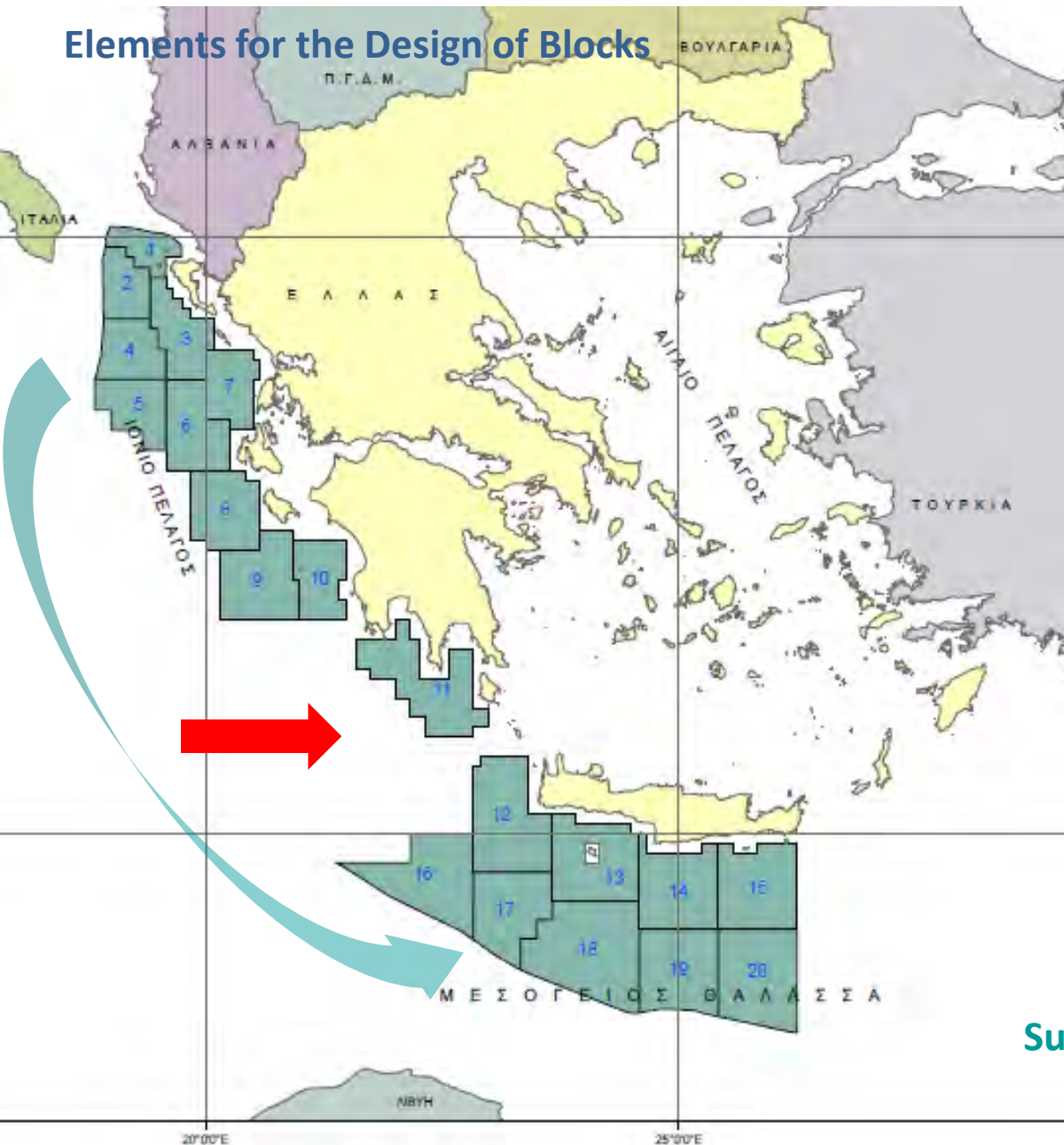
## Elements for the Design of Blocks

### Environmental Considerations – SEA Findings



# Call for Tenders

## Elements for the Design of Blocks



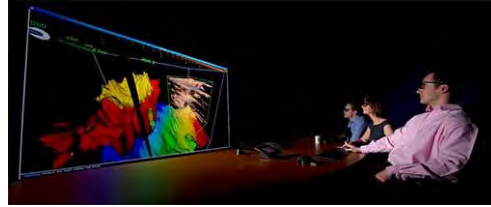
- **Exclusion** of a central part with ultra-deep water depth
- Size and shape adjusted to key factors:
  - ✓ the basic lat/long grid,
  - ✓ the available data,
  - ✓ the 2D seismic grid,
  - ✓ the water depth and
  - ✓ the potential prospectivity as assessed to date

Larger surface in South of Crete & Central Ionian  
Smaller surface in Northern Ionian

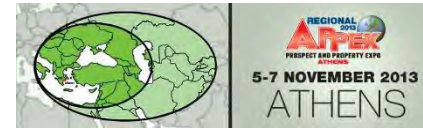
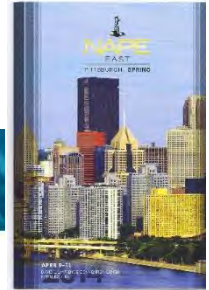
Surface area: 1,801 – 9,543 sq. km

# Promotion of the Licensing Round

- Data Room Operation
- Data Marketing



- Publicity
- Events to participate or to organize



2014 Greek Oil & Gas Pavilions  
London, Houston, Amsterdam



**USA, CSIS Statesmen's Forum**  
November 3<sup>rd</sup>, 2014



# Promotion of the Licensing Round

The Minister of Environment, Energy & Climate Change of the Hellenic Republic and The Ambassador of Greece in London have the honor of inviting you to the official pre-launch event for:

**"Greece Offshore Licensing Round 2014"**

Western Greece and South Crete: A new frontier area for hydrocarbons E&P in the heart of the Mediterranean

Tuesday 1<sup>st</sup> and Wednesday 2<sup>nd</sup> July 2014 at the Hellenic Centre, London

Keynote address by Prof. Yannis Maniatis, Minister of Environment, Energy & Climate Change

Specialists from the Ministry of Environment, Energy & Climate Change, PGS and SeisFronier will be available for individual meetings in the afternoon of July 1<sup>st</sup> and all day July 2<sup>nd</sup>

**PROGRAMME**

Tuesday, 1 July

09:00 – 09:30 Registration and welcome coffee

09:30 – 09:40 Opening Remarks – *Ambassador of Greece in London*

09:40 – 10:00 Keynote Speech – *Minister of Environment, Energy & Climate Change*

10:00 – 10:30 Legal & Regulatory Framework, Blocks & Licenses – *Ministry*

10:30 – 10:45 Structural Overview & Geological Setting – *Ministry*

10:45 – 11:15 Coffee Break

11:15 – 11:35 Greece MegaProject - PGS

11:35 – 12:00 Petroleum Assessment, Leads & Plays - *SeisFronier*

12:00 – 13:00 Light Lunch

13:00 – 17:00 Individual Meetings and Data Reviews

Wednesday, 2 July

09:30 – 13:00 & 14:30 – 17:00 Individual Meetings and Data Reviews

To register for the event and/or to schedule a meeting, please reply by Monday June 16<sup>th</sup> at: [offshore@energy.york.ac.uk](mailto:offshore@energy.york.ac.uk)

More information: Dr. G. Tsihoulidis, Ministry of Environment, Energy and Climate Change, Petroleum Policy Directorate, Athens, Greece. Tel: +30 210 8766263, E-mail: [tsihoulidis@ppd.mec.gov.gr](mailto:tsihoulidis@ppd.mec.gov.gr)

A. Karpodis, Economic & Commercial Section, Embassy of Greece in London, Tel: +44 20 7721 8860, E-mail: [comsec@hellenicembassy.org.uk](mailto:comsec@hellenicembassy.org.uk)

Venue: Hellenic Centre, sponsored by: Petroleum Geo-Services (PGS)

16-18 Paddington St, London W2 1AS

With the support of: The Research Centre for Energy Management (RCEM) | at EBCP Europe Business School | GEF - Great Energy Forum | Media sponsor: Natural Gas Europe ([www.naturalgaseurope.com](http://www.naturalgaseurope.com)) | Dook Energy Services | NATURAL GAS EUROPE | RESEARCH CENTRE FOR ENERGY MANAGEMENT | EBCP | GEF | Dook Energy Services

Official pre-launch event London, July 2014

Official contacts (diplomatic level) and targeted meetings with oil companies

**Imaging the Next Hydrocarbon Province**

With the new Licensing Round Offshore Greece and recent acquisition of data offshore Albania (Chalchig), the focus is now again on the adjacent Adriatic region

PGS

Greece 2014

The 2014 Offshore Licensing Round

Offshore Licensing Round

New Horizons to hydrocarbons exploration in Offshore Western Greece & South of Crete

**PAID ADVERTISEMENT**

**Offshore Greece: Available Acreage and New Opportunities**

Newly acquired data holds the key to develop under-explored waters offshore Greece.

By Spiros Sia and Nikos Beki, Petroleum Geo-Services (PGS)

Greece is preparing for an offshore licensing round opening in 2014. The PGS Greece MegaProject – consisting of 12,500 km<sup>2</sup> of new GeoStreamer® data, 9,000 km of reprocessed legacy data, plus a further 12,000 km of marginal legacy data – will be the basis for the interpretation, exploration block delineation and data packages for the license round.

The PGS Greece MegaProject offers in-depth understanding of prospectivity offshore Greece for the upcoming License Round and supports decision making.

The diverse geology of Greece offers wide-ranging petroleum potential in the provinces available for licensing.

**IONIAN SEA**  
Carbonate plays

- Build-ups
- Distal slope
- Proximal talus slope
- Retained fault blocks
- Distal turbidite

**WEST PELOPONNISE**

- Proven petroleum systems
- Several oil and gas seeps
- Mist volcanism
- Widespread fault blocks
- Widespread discovery

**SOUTH OF CRETE**

- Turbidite area
- Pure-carb. basin
- Mist volcanism
- Mediterranean Ridge

Full-belt plays

- Anticlines
- Thrust faults
- Salt-related plays

To discuss your exploration goals in Greece, please contact us at our regional presence or visit the PGS stand (1348) at EAGE in Amsterdam or the Greek Ministry stand (C1) in the International Prospect Centre & Theatre.

Example wells in Ionia from Greece MegaProject

**OFFSHORE MEDITERRANEAN**

**Exploring Greece with a new subsurface perspective**

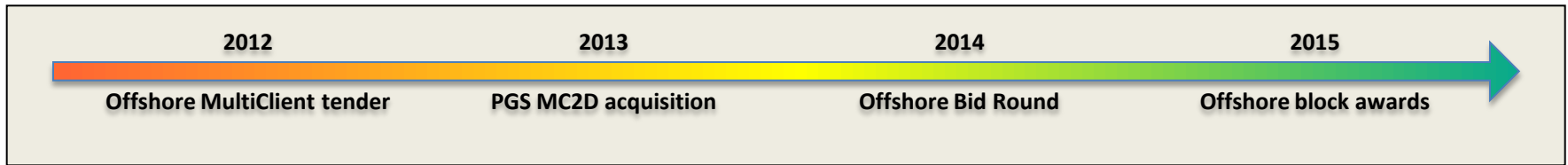
Marl Scheldtsoe Berg  
Jörn Fürstenau  
Petroleum Geo-Services

Spyridon Bellas  
YPEKA

Exploration in Greece is gaining momentum. After the 2012 open-door tender process and last year's awards in the three bid areas of western Greece (Ionia, Gulf of Patris, and Satalon), the Greek Ministry of Environment, Energy and Climate Change (YPEKA) is expected to announce an international licensing round for hydrocarbon exploration and development, starting in September 2014. In preparation for this, an international invitation for a non-exclusive regional 2D seismic survey offshore western and southern Greece was made. This work was awarded to PGS, and the data was shot using GeoStreamer with GeoSource®, producing 125,000 line km (7,767 mi) of data. The data is processed and available for licensing. GeoStreamer with GeoSource is PGS' glustree™ best-of-breed solution, which provides the interpreter with a clearer image of the subsurface.



# Preparation



- ✓ Data
- ✓ Interpretation report
- ✓ Data rooms in operation - Athens, Oslo, Houston, London, Singapore
- ✓ Strategic Environmental Assessments
- ✓ Delineation of blocks
- ✓ Notice Publication in the official EU Journal - **13<sup>th</sup> November 2014**
- ✓ Model of Lease Agreement

**Application Deadline : 14<sup>th</sup> July 2015**

# Opportunities

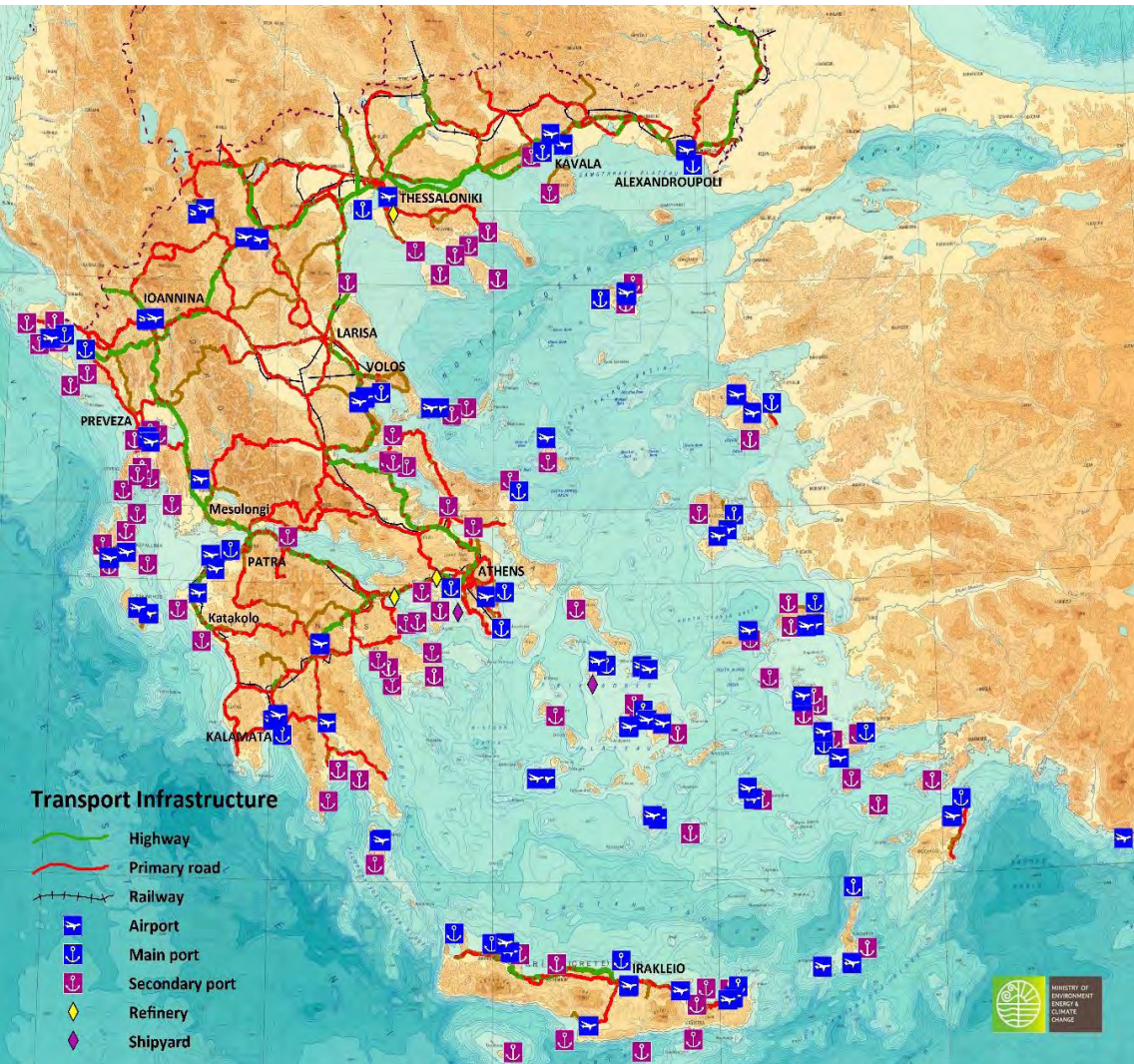
A promising region in terms of hydrocarbon potential

With well documented data

Operating with an updated and robust regulatory framework

Offering significant investment opportunities

# Infrastructures



Cost efficient **Transportation system**

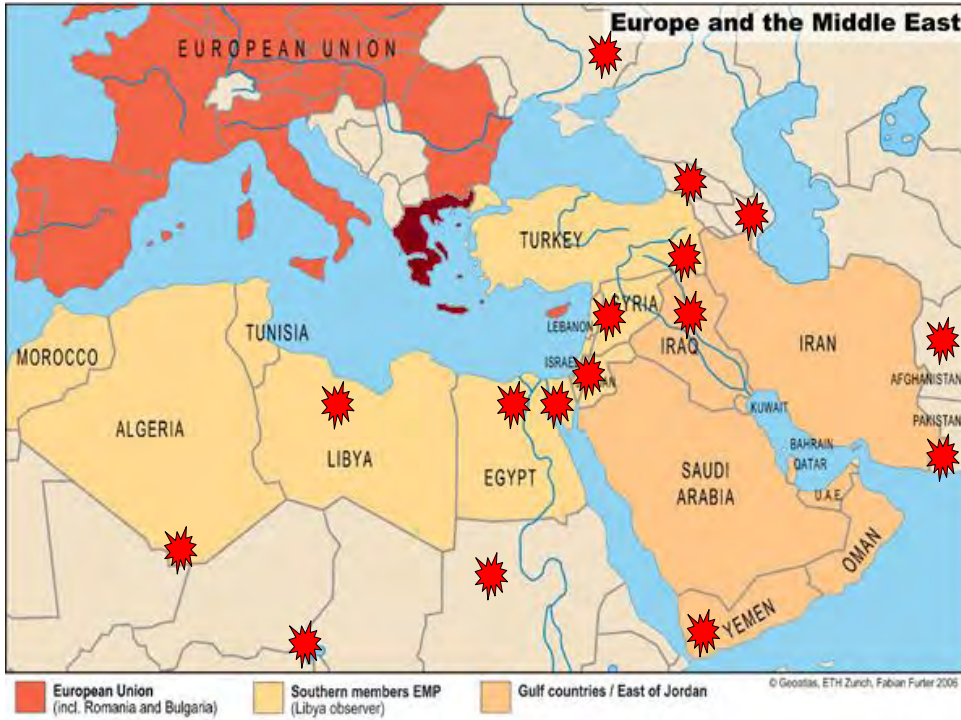
Great number of **Ports, Terminals** and **Airports** in the adjacent region

**4 Oil Refineries** with a total crude distillation capacity of around 490 kb/d  
*Refineries have completed extended upgrades which make them of the most modern and profitable in Europe*

**4 Shipyards** (3 in Attica. 1 in Syros island)



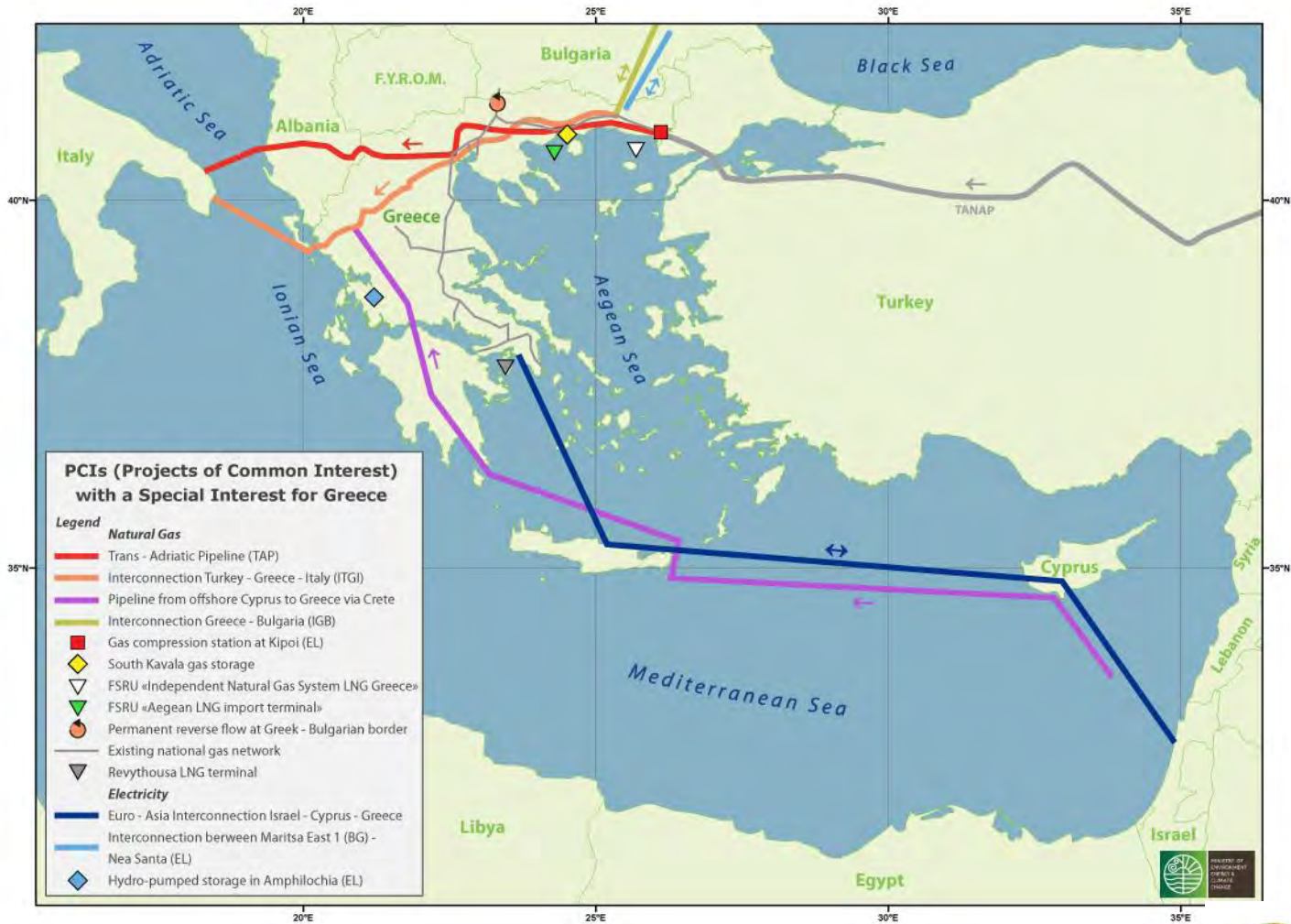
# Greece: Strategic geo-economic location



- ❑ Crossroad between energy producers & consumers
- ❑ EU member
- ❑ Heart of Mediterranean
- ❑ Safe harbour in the area

# Greece: A gateway to SE Europe

## Energy infrastructures & Projects



# The new Goal.....

## Organization and Operation of the Public Competent Authority the Hellenic Hydrocarbon Resources Management S.A (HHRM SA)

Legal entity in official operation

Transparent and efficient staffing of the company

Management of the national archive of hydrocarbon data

Supervision of the agreements

- technical
- accounting
- environmental level

Drafting of HSE regulations and standards, reporting procedures etc.



# No short-term vision and actions

*Greece*

