

A New Era for Natural Gas in SE Europe: “A View to the Future” - DESFA case

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WITHIN THE JURISDICTION OF THE MINISTRY OF ENVIRONMENT, ENERGY & CLIMATE CHANGE



Source of Development, Supplier of Energy



Contents

1. The role of a TSO in the gas market
2. Organisational description and functions
3. Market functioning and timelines
4. International and/regional activities
5. Conclusions



THE ROLE OF A TSO IN THE GAS MARKET



The role of a TSO in the gas market

According to Directive 55/2003/EC a system operator shall:

- a) **operate, maintain and develop** under economic conditions secure, reliable and efficient transmission, storage and/or LNG facilities, with due regard to the environment;
- b) **refrain from discriminating** between system users or classes of system users, particularly in favour of its related undertakings;
- c) **provide** any other transmission system operator, any other storage system operator, any other LNG system operator and/or any distribution system operator, sufficient **information** to ensure that the transport and storage of natural gas may take place in a manner compatible with the secure and efficient operation of the **interconnected system**;
- d) **provide** system users with the **information** they need for efficient access to the system.

Furthermore, the **regulatory authorities** shall be **responsible** for approving prior to their entry into force, the methodologies used to calculate or establish the **terms and conditions for connection and access to national networks, including transmission tariffs**.



The case of DESFA, the Greek TSO

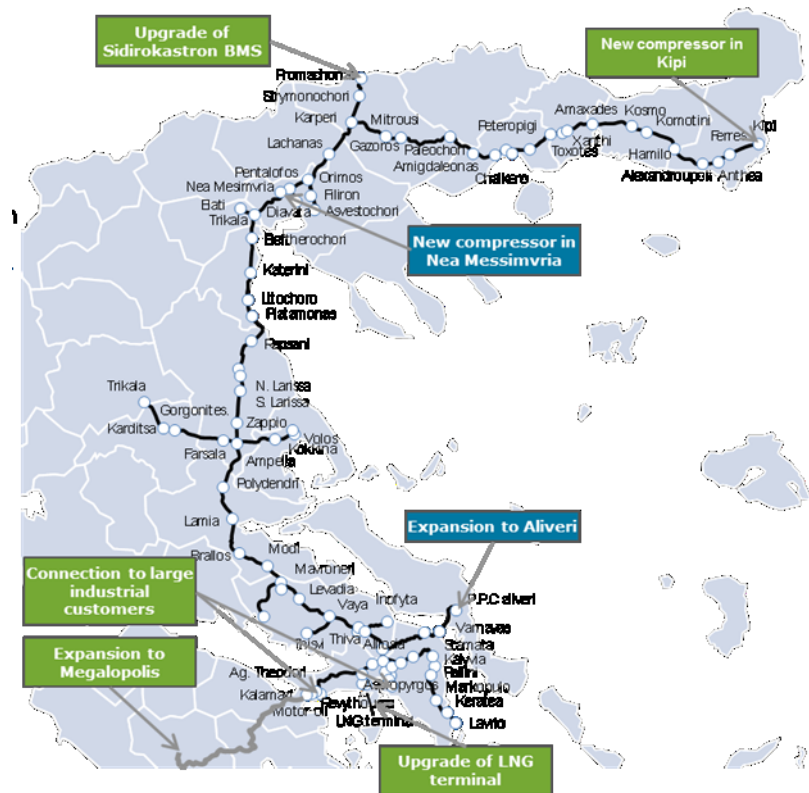
1. Operating high quality assets under a favourable regime

High quality assets

- Sophisticated network design, constructed according to best practices
- Low level of maintenance capex requirements
- State-of-the art LNG facility to be further upgraded
- Significant room for additional volumes

Stable, clear regulatory framework offering visibility

- Mature regulatory framework in line with EU 3rd Energy Package
- Network code in force governing operations
- Clear RAB cost-plus based tariff regulation with attractive returns offering significant protections
- 10-year Development Plan allowing for medium to long term capital budgeting





2. Solid financial performance

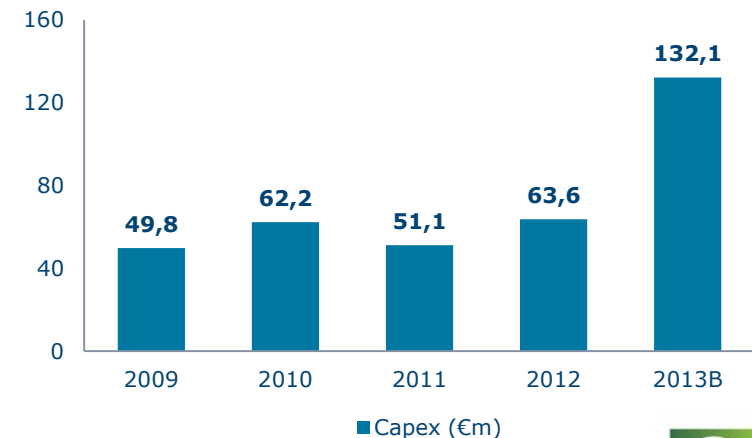
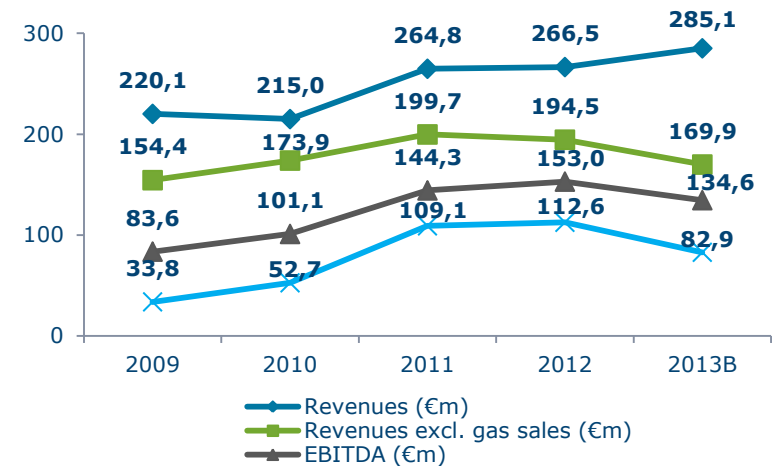
Resilient through economic crisis

- Considerable growth driven by increased regulated revenues and cost optimization
- EBITDA margin reached 57.7% in 2012
- Strong cash flow generating ability allowing for adequate support of capex requirements

Capex progressing despite the economic challenge

- Construction pace continues
- Revised allocation of payments in terms of timing addressing the challenges faced during 2012
- Funding mainly through EIB loans (50%) and grants (35%)

Key financials



Note : Figures include capitalized opex

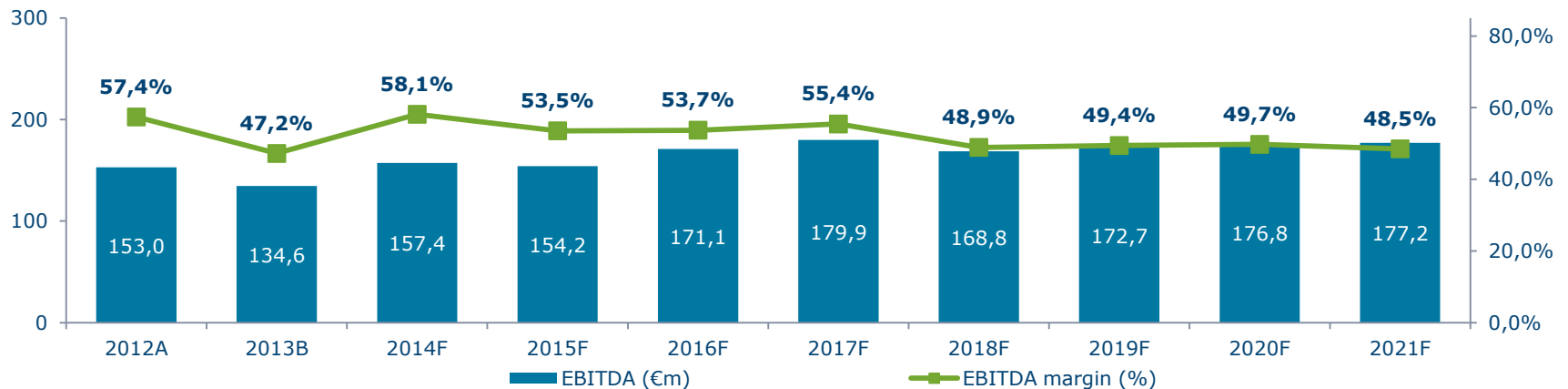
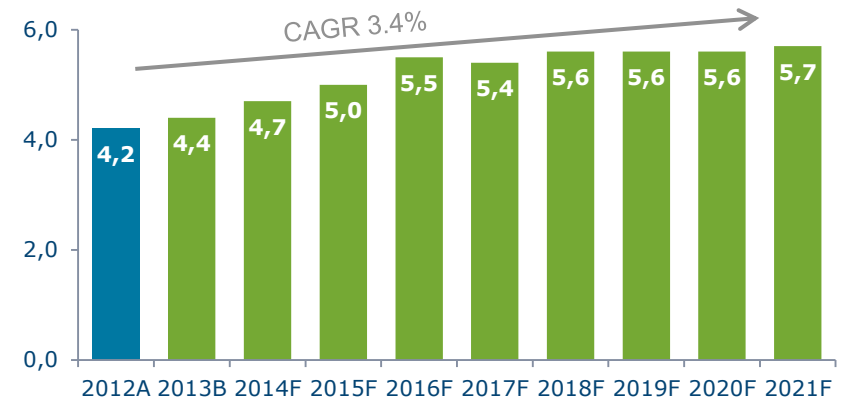
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3. Strong growth outlook

Relatively young gas market with growth potential

- Short term challenges due to macroeconomic conditions
- Medium to long term growth forecast expected supported by growing gas demand



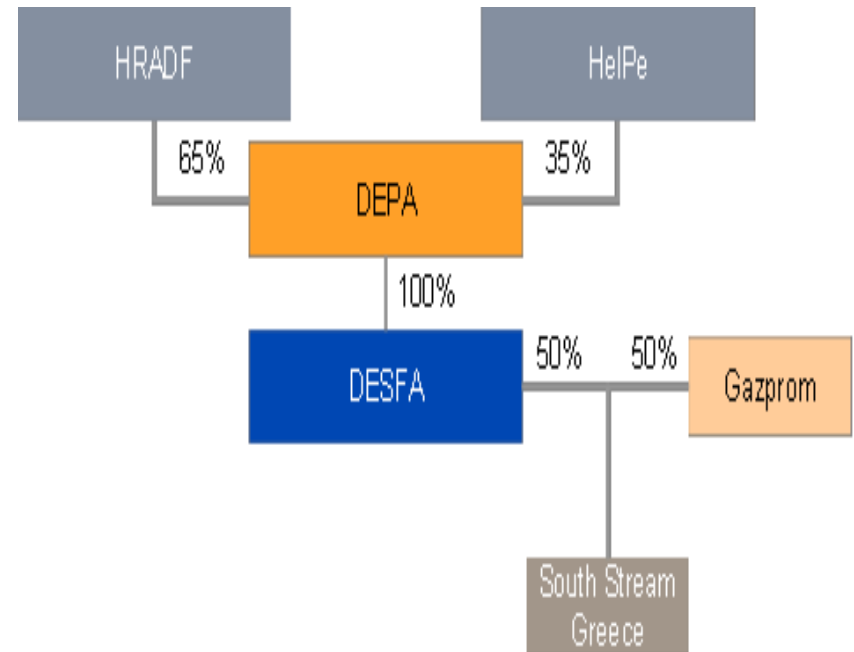


ORGANISATIONAL DESCRIPTION AND FUNCTIONS



Shareholders structure

- DESFA was established in March 2007 after the completion of the legal unbundling procedure of the Public Gas Corporation of Greece (DEPA S.A.)
- Owns and operates the Greek Transmission Network and Revithoussa LNG Terminal in accordance with 3rd energy package
- DESFA has been recently certified as an Independent Transmission Operator (ITO)





High quality HP network

- Pipeline network of **1289 km**
 - Young network, sophisticated design, compliance to the strictest safety standards
 - 40 years financial life with low maintenance requirements
 - Constructed according to the best practices with special features for seismic protection and cathodically protected
 - Zero accident track record
 - Significant room for additional volumes
- **3 Entry points:**
 - Russian gas is imported via the Greek Bulgarian border (Sidirokastro entry point)
 - Azeri gas is imported via the Greek-Turkish border (Kipi entry point)
 - LNG from various sources, indicatively Algeria, Egypt, Nigeria, Trinidad, is imported via the Revithoussa LNG Terminal.





Revythoussa LNG Terminal

- One of the youngest LNG terminals among the 19 operating in Europe
- 30 years average financial life - achievable operating life of over 50 years

Unloading Capacity

7.250 m³ LNG / hour

Send Out Capacity
1000 m³ LNG/hour
(Sustained Maximum Send out Rate)

Storage Capacity

2 tanks of 65.000 m³ each
LNG useful volume

Approach and berth of LNG carriers

25.000 m³ to 155,000 m³
(290 m length, 11.5 m draft)

High Efficiency CHP unit for the power and thermal needs of the Terminal





Well designed, constructed and operated assets

Track record

Impeccable track record and significant initiatives undertaken during emergencies

- Only five (5) episodes of major disruption since commencement of operation, all of which beyond DESFA's control
 - one in 2009 due to Russian – Ukrainian crisis
 - four in 2012 due mainly to major limitation of gas delivery from Turkey
- Key role in the above emergencies handling acknowledged in the relevant assessments of the European Commission

HSE & Q

Highest standards in terms of HSE & Q aspects certified by international organisations

- Holder of most of HSE&Q certifications in Greece
- Pioneer in Europe in relation to sustainable report & carbon footprint analysis according to U.N.
- Certified by three international accredited bodies: TUV Rheinland, TUV Austria and Moody's

IT Systems

Modern Information and Telecom systems support effectively the network operation and management

- Pilot Integrated Information System for Natural Gas, certified by Moody's
- SCADA
- Online Simulator
- Distributed Control Systems for the LNG terminal, Nea Messimvria compressor station and Sidirokastro BMS
- Metering Station Invoicing Systems



10 year Development Plan (2013 -2022) in place

Development Plan 2013 – 22 in line with DESFA's strategy

- Continuous expansion and upgrading
 - Enhance security of supply
 - Respond to the future domestic and regional market needs
 - Further improve operational efficiency and support growth

Sound Project Management procedures, increasingly relying on internal resources, ensure timely delivery of the Development Plan

- Specialized and added – value project management procedures, methods and tools
- Benefit from experienced and qualified internal resources





Two key projects successfully completed

Project

Compressor in Nea Messimvria initiated operations in Dec. 2012

- Budget: €59.0m
- Cost up to 31.01.13: ~ €52.0m
- Two centrifugal compressors of 7.7 MW (one in operation and the other one as back-up) and all auxiliary equipment including provision for a 3rd unit



Purpose/Benefits

- Increase the capacity of the pipeline entry points
 - Enhance security of supply
 - Improve competition in the gas market
- Improve the flexibility of the NNGS

Extension to Aliveri

- Budget: €71.5m
- Cost up to 31.01.13 : ~ €62.5m
- 72 km of high pressure pipeline consisting of the following sections:
 - Three onshore sections of total length 57.9 km
 - Offshore section of 14.2 km
 - Five (5) underground line valve and scrapper stations
 - One (1) aboveground Metering Station PPC Aliveri.



- Connect PPC power plant and potential service of Evia region



Major ongoing projects

Project

Expansion of NNGS in the Peloponnese until Megalopolis

- Budget: €109.7m / Est. completion:2013
- Cost up to 31.01.13 : ~ €42.5m
- 167 km high pressure pipeline and one aboveground metering station



Purpose/Benefits

- **Connect PPC power plant** and service areas along the route
- **Project design allows for future expansion** of the pipeline in the region of the Peloponnese

2nd LNG Terminal Upgrade

- Budget : €159.0m / Est. completion:2015
- Cost up to 31.01.13 : ~ €0.8m
- Third storage tank to increase the storage capacity by 73%
- Upgrade of the send-out capacity by 40%
- Increase capability to accept larger vessels up to 260,000 m³



- **Storage increase:** Enhance of (a) security of supply, (b) flexibility of operation, (c) competition
- **Sending out increase:** Coverage of (a) higher peaks (b) disruptions of supply and hydraulic balance of gas system
- **Carriers increased capacity:** Access of almost all the carriers available
- **Creation of conditions for** (a) loading of small lng vessels for isolated areas (b) feeding vessels that use lng as fuel (c) increase of cool down services
- **Key role in establishing Greece as a regional gas hub** in conjunction with interconnection projects



Major ongoing projects

Project

Purpose/Benefits

M/R – M Stations

- Budget : €12m / Est. completion:2014
- Installation of 3 M/R Station and 3 M Stations



- Serve needs of specific industrial consumers

Sidirokastro (Reverse flow, upgrade station)

- Budget : €3.3m / Est. completion: 2014



- Capability of operating in reverse pipeline gas flow, exporting volumes to Bulgaria



Regulated services remains the key component

LNG terminal is the main entry point for new comers in the market

- Primary LNG source is Algeria covering c. 60%

Solid customer base for regulated services

- Includes large corporate players

Customer contract templates to be revised

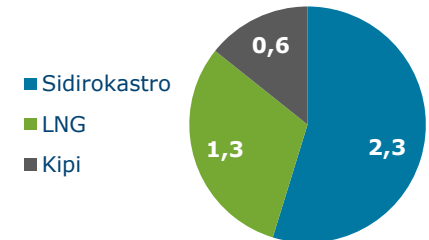
- Current templates for transportation and LNG contracts apply
- Template for interruption contracts
- DESFA BoD approval granted
- RAE notification on power producers is pending
- RAE's approval awaited for revised template contracts



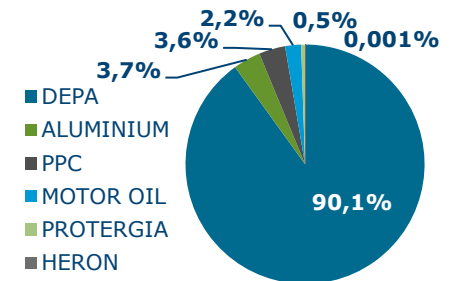
Customer mix is expected to change

- Further expansion upon the LNG facility upgrade completion
- Increase of the technical capacity at entry points due to new compressor
- Implementation of the new Network Code foresees more flexible services

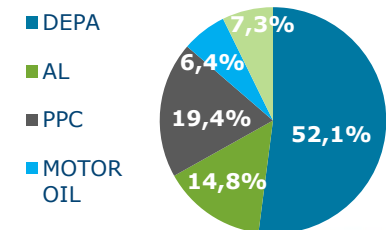
2012 volumes (bcm)



2010-12 Transmission revenues per customer



2010-12 LNG revenues per customer





Non-regulated services growth potential

Non-regulated revenues accounts for 2% of total revenues

- DEPA Group is historically the key recipient

Growth of the non-regulated services is within DESFA's strategy

- Potential additional services
- Customer base to be further expanded

Non-regulated services

- O&M of distribution
- Technical support / consulting
- Gas odorization
- LNG additional services
- Corrosion & Lightning Protection
- Certifications
- Seminars and Training



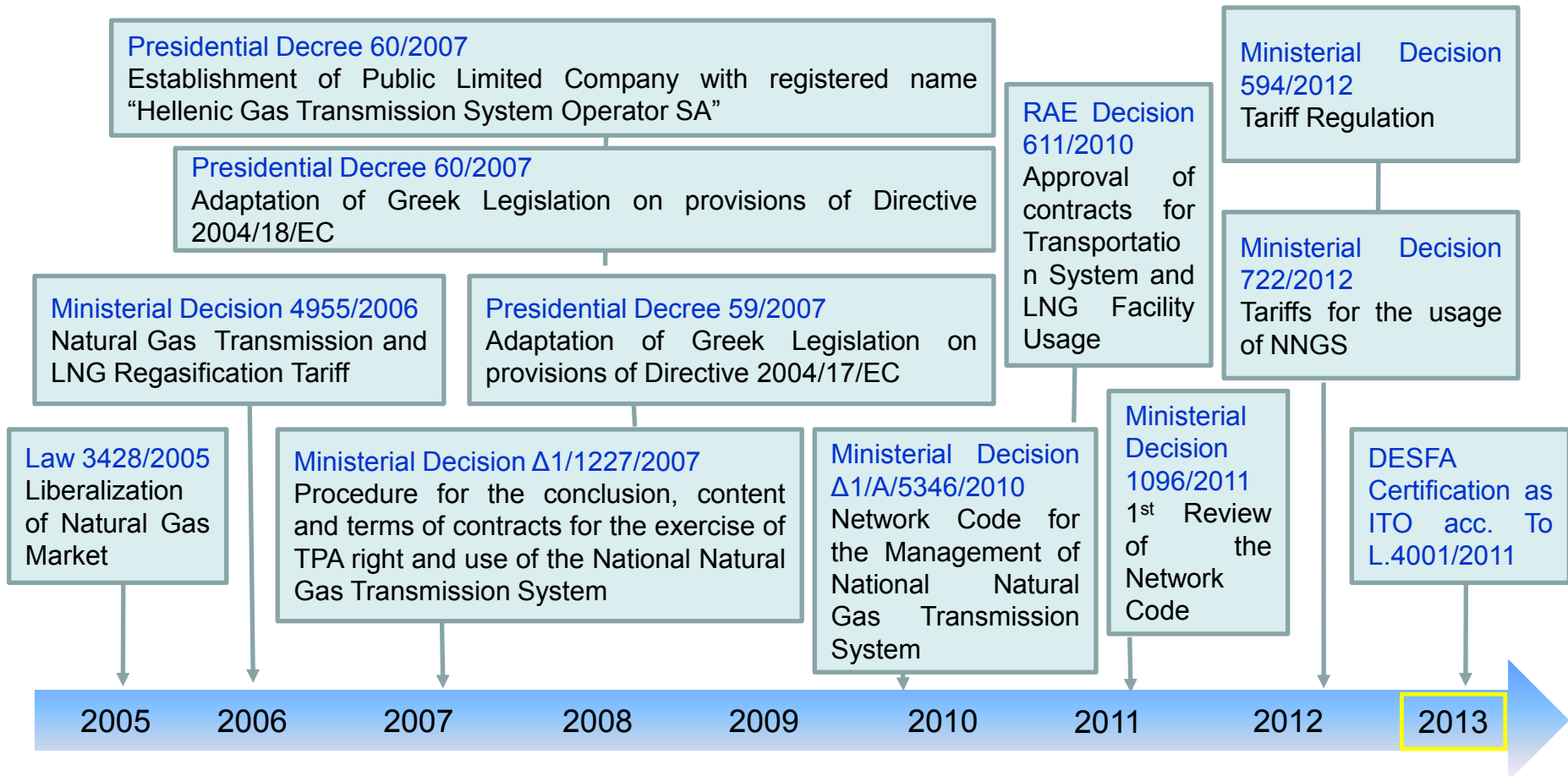
Potential additional non-regulated services

- O&M of interconnection networks
 - O&M of oil / water pipeline systems:
 - Reloading of LNG vessels for small scale LNG Terminals
 - Gas Supply for LNG-fueled vessels
- TAP, IGB
 - HELPE, EYDAP, EYATH

Non regulated services present a significant upside in the future



MARKET FUNCTIONING AND TIMELINES





Key developments in the regulatory front

Law 4093/2012

Law 4093/2012 introduces changes in the corporate governance of DESFA to comply with the ITO model establishing more strict independency rules

- Supervisory Board with decisive role in key issues (eg. dividend policy) approved recently
- Compliance Officer appointed recently
- New Articles of Association approved by General Assembly

Certification process

Certification awarded

- PwC study on sufficiency and suitability of personnel is completed
- Code of Conduct & Compliance Program approved recently by RAE

Amendment of Network code

2nd amendment of the Network Code awaited from RAE, following public consultation ended in Nov. 2012

- Main new features include Entry/exit system (compatible with the new Tariff Regulation), interruptible contracts (forward/backhaul flow) and introduction of Virtual Nomination Point



Key developments in the regulatory front

ENTSO

DESFA actively participates in ENTSOG, holding a seat in the BoD

- DESFA follows closely the works of ENTSOG and cooperates with others TSO's

Cooperation with Regulatory Authority for Energy is a key aspect to formulate a sound regulatory framework



INTERNATIONAL AND REGIONAL ACTIVITIES



Strategic opportunities for further growth

- Operation and Maintenance of pipelines
- Connection with Bulgaria
- Increase of capacity of TR/GR Interconnection Point
- Participation in the project of Underground Gas Storage UGS of South Kavala
- Further expansion of Revythousa capacity through FSU or FSRU
- Other future projects
- Hub establishment and operation



Participation in key international projects of strategic importance that create the conditions for establishing Greece as a regional hub and DESFA as a key player

1. TAP project will connect Greece with Italy and Western Balkans and through connection of Italy with Switzerland to Western European markets

Opportunities:

- For undertaking the operation and maintenance of the Greek section of TAP
- For cooperation in the same subject of the Albanian section of TAP
- even, for participation of DESFA shareholder(s) in TAP Consortium





2. Connection with Bulgaria

- Reverse flow project at Sidirokastro (existing connection). Capacity: 1-3 mil Nm³ / day. Planned completion by the end of 2013
- Interconnector Greece-Bulgaria (IGB) pipeline. Participation of DESFA possible
- Above prospects will connect Greece to Bulgaria and Eastern Balkans for flows from Greece

3. Increase of capacity of Turkey/Greece Interconnection Point (Kipi)

With installation of a compressor station the capacity may be increased from current level of 1.8 bcm/y to 3.0 bcm/yr:

- enhancing the liquidity of the market
- increase of the use of the network

Cooperation with Botas, also exploring reverse flow capability



Future Technical Capacities of Gas Entry Points of Greek Gas Network (Nm³/d)

Entry Point	Existing capacities (by Dec. 2012)	Step 1 After the operation of the CS at N. Messimvria (Dec. 2012)	Step 2 After the 2 nd Upgrade of the LNG Terminal (expected in 2016)	Step 3 After installation of CS at Kipi, upgrade of the CS at N. Messimvria and upgrade of the Turkish Network	Step 4 After implementation of the transit project(s), upgrade of the CS at Kipi and upgrade of the Turkish Network
Greek/Bulgarian Border	9.766.700	12.000.000	12.000.000	12.000.000	12.000.000
Greek/Turkish Border	2.724.000	5.160.000	5.160.000	9.120.000	33.480.000
Agia Triada (LNG Terminal)	12.469.296	12.469.296	19.488.000	19.488.000	19.488.000
TOTAL	24.959.996	29.629.296	36.648.000	40.608.000	64.968.000
<u>Note:</u> Nm ³ refers to 0°C and 1 atm					

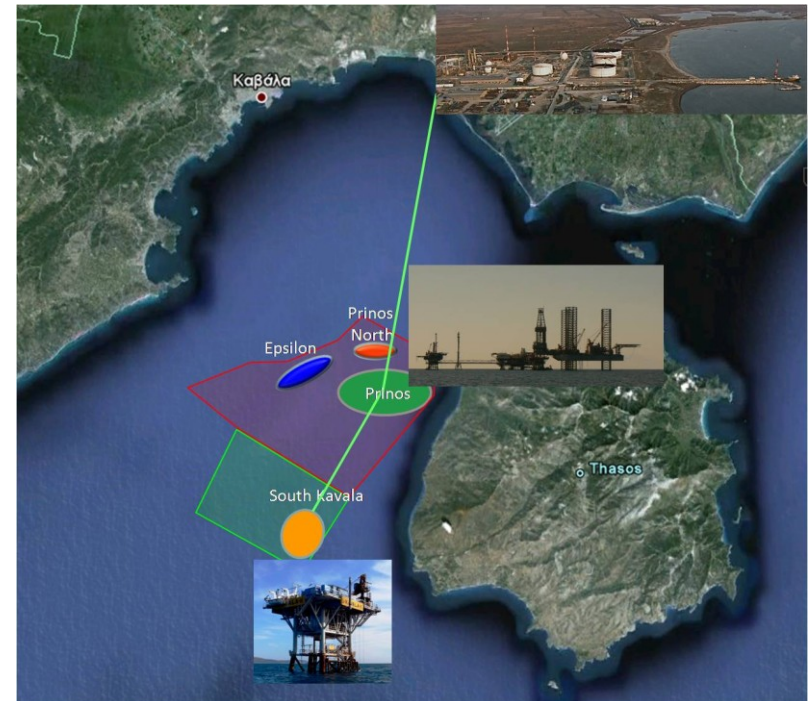


4. Participation in the project of UGS of South Kavala

- Working volume estimated to 360m Nm³
- Important synergies anticipated between the LNG Terminal and the UGS

5. Further expansion of Revythousa capacity through FSU or FSRU

- Terms of a feasibility and cost estimation study prepared
- LNG trade forecasted to grow





6. Other future projects

- New LNG terminals proposed by other parties (Alexandroupolis, Kavala)
- Project for transportation of East Mediterranean gas

7. Hub (wholesale market) establishment and operation

- Greece to become a crossroads of gas of various origin with network fully interconnected to the neighboring countries
- Further enhanced with the production of Israeli, Cypriot and possibly Greek gas in the future and the operation of South Kavala UGS
- Increased liquidity makes sensible the operation of a wholesale market. DESFA opting to undertake the market operator role



Conclusions

Key aspects for an effective TSO

High quality assets with moderate capex going forward

Resilient through the economic challenges with stable and predictable future cash flows

Clear, mature and favorable regulatory framework. Excellent relationship with regulatory authorities

Actively participating in the regulatory formulation both locally and in the European level

Well organized, optimally staffed company operating at highest standards

Strategic opportunities for future growth