Reforming the Greek Energy Market: Recent Developments and Key Challenges

Nektaria Karakatsani,
RAE, Member of the Board

35th ECRB Meeting,
Athens, 6 December 2016
Key Facts and Challenges

• Market Structure
  PPC - Dominant player in both wholesale and retail
  79% of conventional capacity, 88% retail share
  77% of conventional production
  55% of DAS volume (RES included, without cross-border flows)

• In the previous decade, incentives for new capacity, to address anticipated capacity shortage
  Capacity payments over 2006 - 2014
  2500 MW by IPPs (6 CCGT, 1 OCGT)
  New capacity by PPC

• Generation Mix: Well-balanced across lignite, gas, hydro, renewables
Impact of Oil Prices
Energy Mix (GWh), January - August 2016

34.441 GWh
Impact of Oil Prices
Summer Demand Peak - 15.07.2016

Generation mix

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<th>Time</th>
<th>Renewables</th>
<th>Hydro</th>
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NOME Auctions

- To enhance competition in retail market
- Remedy for asymmetry due to PPC’s exclusive access to lignite and hydro plants
- Similar to French paradigm, different from previous proposals
- Concept: Hypothetical, baseload product (mix of lignite and hydro) RAE derives variable cost, as outlined in the law. This product is auctioned to alternative suppliers
- Target: 50% decrease in PPC’s market share by 2020
  Annual targets + specific implications if not reached
NOME Auctions

- In June 2016, RAE proposed the reserve price (37.37 €/MWh), which was adopted at a ministerial decision.

- RAE approves quantities, products, auctions schedule.

- **1\textsuperscript{st} auction**: 25\textsuperscript{th} October 2016, 1-year product, 460 MW, physical delivery from Dec 2016 to Nov 2017.

- Auctions for 2017: RAE decision in December.

- Parameters to be clarified:
  - Re-auctioning of previous year’s quantity? If so, to what extent?
  - Frequency and timing of price revision - Every June
    Balance between stability and realistic CO2 price levels
  - Negotiation with institutions
NOME Auctions

- Expected discount of 7-10 €/MWh relatively to SMP
- Benefits should be transferred to consumers and be balanced across categories
- In-depth monitoring of retail market
- Suppliers will submit quarterly data on:
  - Competitive charges of tariffs, volume and revenue per consumer category
  - Development of new products
- Compliance of contract terms and conditions with the Supply Code
- Price comparison tools - CEER Guidelines under public consultation
Why consumers do not switch? Commercial Barriers - CEER Report

- Switching rate: 6.3% (EU level) but 31% in Portugal

- Consumers’ *misperception about insufficient gain*  
  e.g. in Netherlands: perceived annual gain 85 € vs. realized gain 147 €

- Lack of *complete, understandable and comparable information* -> Guidelines on price comparison tools

- Vague *conditions*, unjustified *termination fees*, value added services difficult to assess

- Misperception about complexity of switching process

- *Inertia / loyalty* rather than satisfaction

- Broad customers’ *distrust* to the energy markets

- Complexity of bills, substantial regulated component
Transition to Target Model

- **Target Model** Implementation: January 2018
  Day-ahead, intra-day, balancing and forward markets

- **Market Coupling** with Italy initially

- **Technical Assistance (JRC)**
  7 Key Deliverables on: Market and Grid Codes, IT platforms, Credit and Clearing, Regulatory measures (e.g. hedging ratio)

- **Current status:**
  - Legislation in place (following RAE’s Proposal to Ministry)
  - Guidelines will be issued by RAE to the Market and System Operators
    A proposal is under public consultation
Auction-based Capacity Mechanism

• Previously, the capacity scheme was administratively set (570 mil. € in 2014)

• Transitional flexibility payments (171 mil. €) for 1 year

• Security of Supply
  Deter plant mothballing due to RES impact. Lignite plants retirements.

• Key principle: Price coverage for consumers until competition intensifies, given the price cap adjustment and limited hedging tools

• Proposal to DG Comp for Reliability Options, similarly to Italy and Ireland
  Auction winners: capacity obligation + implicit cap on their market revenues

• Study of flexibility requirements is expected by the TSO (JRC technical assistance)
Interconnection Agreement (BG - GR)

- Compliance with Network Code CAM
- Signed in June 2016 between the TSOs of Greece and Bulgaria
- Applicable up to January 2017.
- Enabled commercial gas flow from Greece to Bulgaria from 1.7.2016
- EC: “A crucial step towards implementing EU rules on one of the last cross-border points in Europe where historic transit arrangements, tailored to a single company, prevailed”

- Auctions via the RBP platform: 9-month, quarterly, monthly products
- Forward direction
- Interruptible, virtual reverse, monthly product

- First auction: 9th December
Other Developments at Wholesale Gas Level

• Revised IA currently being drafted by DESFA and Bulgartransgaz

• Key elements:
  35 renominations, physical reverse flow, harmonization of gas day definition, change of temperature reference point.

• 3rd revision of Network Code on-going

• Additional quantities of gas released by DEPA
  10% of annual supply plus: 5% (2016), gradually increasing to 10% (2020)

• 1st auction under new framework in November
So far: Unbundling of Incumbent DEPA Transmission (DESFA) vs. Supply (EPAs)

GREEK STATE

helena.png

DEPA S.A.

35,5%

65%

35%

HELLENIC PETROLEUM S.A.

GAS SUPPLY CO

GAS SUPPLY CO THESSALONIKI

GAS SUPPLY CO THESALIA

GAS SUPPLY CO ATTIKI

ENI

Shell

51%

49%

49%

49%

DESFA

Owner and Operator:
- Transmission System
- LNG Terminal

100%
Opening of the Retail Gas Market in Greece

- Unbundling of distribution from supply activities by 1.1.2017
- End to EPAs’ and DEPA’s exclusivity in their specific areas
- All customers will be eligible from 1.1.2018 onwards, following the adoption of Law 4336/2015
- Increase in number of market players holding a license for gas supply
- EPAs can now freely choose their supplier for quantities relating to their eligible customers
- New secondary law and regulatory framework outline the effective unbundling of distribution from supply and the operation of distribution networks.
Regulatory Steps towards Liberalization

- Gas Distribution Tariff Regulation: **Sept 2016**
- Gas Distribution Tariffs: **Oct 2016**
- Distribution Network Code: **Dec 2016**
- Metering Regulation: **Dec 2016**
- Third Party Access contracts: **Dec 2016**
- Legal and Operational Unbundling: **Jan 2017**
- New distribution and supply licenses: **within 2017**
The IGB Pipeline - Regulatory Timeline


• 11.2015 - Regulators issued revised Guidelines for non-binding phase (EoI)

• 12.2015 - 4.2016 - EoI Phase was conducted
  • 9 companies expressed interest
  • up to 4.4 bcm/year forward flow, 1 bcm/year reverse flow

• 07.2016 - Regulators issued Bidding-phase Guidelines

• Bidding-Phase was concluded in November 30th.
• A new session is expected for non-allocated quantity

• Expected commercial operation: 2H 2018
Supplementary Material
## Dynamics of Wholesale Prices

### SMP Monthly Variation

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<th>Month</th>
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**Note:** The €/MWh values are depicted in the chart.
Consumers not seeing the effect of wholesale price drop

Evolution of Retail Tarrifs:
Households, 1601-2000 kWh

€/MWh
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  77% of conventional production
  55% of DAS volume (RES included, without cross-border flows)

• Incentives for new capacity, to address anticipated capacity shortage
  Capacity payments over 2006 - 2014
  2500 MW by IPPs (6 CCGT, 1 OCGT)
  New capacity by PPC

• Generation Mix: Well-balanced across lignite, gas, hydro, renewables
Key Facts and Challenges

• Asymmetries
  Portfolio of Lignite and Hydro assets: PPC Only
  More flexible (Multi-shaft) CCGT: PPC Only

• Intense competition among CCGT units
  Reflected on the dynamics of bidding and technical parameters

• Fuel Competition
  Lignite vs. Gas (impact of falling oil prices)
  Emerging since October 2015

• Mandatory quantities -> Reduce the competitive segment of demand
  Hydro, RES, Commissioning units
Hydro Pricing Methodology – from 1 October 2016 onwards

Example

Lake Level [m]

Min.Var.Cost [Euro/MWh]

Rref
Rmin
Rmax
Lake Level (d-2)
Min.Var. Cost
Transition to Target Model

• **Target Model** Implementation: January 2018
  Day-ahead, intra-day, balancing and forward markets

• **Market Coupling** with Italy (initially)

• **Technical Assistance (JRC)**
  7 Key Deliverables on: Market and Grid Codes, IT platforms, Credit and Clearing, Regulatory measures (e.g. hedging ratio)

• **Current status:**
  - Legislation in place (following RAE’s Proposal to Ministry)
  - High-level market design: almost finalized

• **Next step**
  Guidelines to be issued by RAE to the Market and System Operators
Market Spread with Italy, 2015

Daily market spread Greece (SMP) - Italy (PUN-GREC) for 2015

AVG_IT
MIN_IT
MAX_IT
Electricity Markets: Challenges at EU Level

• Impact of RES
  RES suppress SMP and displace conventional production, while requiring flexible systems → Viability of gas plants?

• More than 20 GW of gas plants mothballed in Europe

• Even if capacity surplus exists, this could be temporary and fragile

• Transition to feed-in-premium and RES auctions
  In parallel, more ambitious environmental targets for 2030

• Higher overall costs, often distributed across stagnating demand

• Storage: Crucial. Still, needs to make its business case, barriers
• Retail prices irresponsive to wholesale price drops
What challenges do Regulators face?
Regulatory Challenges at EU Level

- **Transparency** requirements (REMIT)
  Huge potential for detecting manipulation - Huge databases

- Regulators **beyond conventional** fields
  - Regulatory over-sight of **new entities**, such as NEMOs (market coupling)

- Interaction with Regulation of **Financial Markets**

- Given all these challenges, **ACER’s role is crucial**

- **Energy Regulators Forum**: recently established to facilitate decision-making
  e.g. 12 decisions, relating to CACM provisions, same for all regulators
Consensus but also Diverging Views

• Harmonisation of Gas Transmission Tariffs ->
  ACER Board of Regulators (BoR) did not reach a decision -> referral to EC

• Internal Electricity Market:
  - What are the right bidding zones?
    Dispute over Austrian - German border -> referral to EC -> ACER
  - Delay in intra-day coupling
  - Sensitivity to parameters of flow-based methodology

• On 26.9.2016, ERF approved the required amendment of the Market Coupling Operations Plan
  Cost-sharing: key issue
Supplementary Material
Success Stories on Regulators’ Co-operation
The TAP pipeline

11.2013 – Approval of Tariff Code by the 3 NRAs (Greece, Italy, Albania)

02.2014 – Approval of the Regulatory Compliance Programme

03.2014 – Launch of Binding Phase of the Market Test

06.2015 - Work on TAP Network Code started

04.2016 – NRAs certified TAP as an ITO

05.2016 – Construction stage started

2020 – Commercial operation to start
The IGB pipeline

• 11.2012 - ICGB submitted an application to the Greek and Bulgarian regulators for exemption from

  • Unbundling provisions
  • Regulated tariffs on the forward and reverse flow capacity
  • Third-party access on the forward flow capacity

• 3 bcm/year expandable to 5 bcm/year

• Estimated construction cost: € 220m
  € 45m secured from EEPR.
The IGB pipeline - Regulatory Timeline

- 05.2013 - 09.2014 - First Market Test. Terminated by sponsors

- 11.2015 - Regulators issued revised Guidelines for non-binding phase (EoI)

- 12.2015 - 4.2016 - EoI Phase was conducted
  - 9 companies expressed interest
  - up to 4.4 bcm/year forward flow, 1 bcm/year reverse flow

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Old quotes. Relevant for the Energy Transition?

• “If you wish to create tension, simply try to change something”
• “Out of discord comes the fairest harmony”
• “The only constant is change”
• “Everything rests by changing”

Thank you for your attention
Demand Curve

Min : set by requirements in wet winter scenario
Max : set by requirements in dry winter scenario