

### **Public Power Corporation SA**

## **PPC's Strategic Priorities**

November 21, 2007



**Regulatory Alignment** 

**Generation Strategy** 

**Efficiency Improvements** 

**New Sources of Revenue** 

**Corporate Culture** 



#### **Regulatory Alignment**

#### Unbundle tariffs in Greece and align with European practices Align PPC's business model with business environment

**Generation Strategy** 

Accelerate replacement program of old and inefficient plants Improve generation mix Decrease generation costs

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Invest in Networks for reliability and efficiency Reduce costs of operations

#### **New Sources of Revenue**

#### **Corporate Culture**

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# There are significant differences in the electricity value chain between Europe and Greece

Fuel Market	Generation	Wholesale Market	Transmission & Distribution	Network Charges	Supply	Market Supply Price
	Europe	Pool or Bilateral & Forward Contracts	Transmission & Distribution separated from competitive business	Transparent cost allowing for investment recovery and incentive mechanism	Multiple suppliers	Unbundled tariffs reflecting costs
	Greece	Mandatory	PPC's Transmission and Distribution in	Charging methodology not providing	PPC practically obliged to be	Lack of transparency of end-user tariffs
		ροοι	entity with competitive activities	incentives for investments	the sole supplier	Tariffs not reflecting costs



In most European countries transmission and distribution have been unbundled from the competitive functions...

Country	Transmission <sup>(1)</sup>	Distribution <sup>(1)</sup>
Greece	Different Ownership of TSO Accounting & Operational	Accounting and Operational
Ireland	Different Ownership of TSO Accounting & Operational	Accounting and Operational
Bulgaria	Different Ownership of TSO Accounting & Operational	Ownership
Czech Republic	Legal	Legal
France	Legal	Legal
Romania	Legal	Ownership
Italy	Ownership	Legal
Portugal 🧕	Ownership	Legal
Spain 🔹	Ownership	Legal
UK	Ownership	Legal
Belgium	Ownership	Ownership

PPC is currently assessing its options on aligning its business model to that of its European peers



...whereas in PPC, all business units are part of the same legal entity



**Competitive Activities** 



Through Legal Unbundling, Transmission and Distribution can be separated from competitive functions



**Competitive Activities** 

**Regulated Activities** 



Unbundled end-user tariffs in the EU countries reflect cost and ensure transparency

Country		Industrial <sup>(1)</sup>	Residential <sup>(1)</sup>
Greece	ŧ	Fixed, bundled tariff, not reflecting cost	Fixed, bundled tariff, not reflecting cost
Belgium		Market price	Market price or cost reflecting tariff
France		Market price or cost reflecting tariff	Market price or cost reflecting tariff
Ireland		Market price	Market price or cost reflecting tariff
Italy		Market price	Market price or cost reflecting tariff
Portugal	۲	Market price or cost reflecting tariff	Market price or cost reflecting tariff
Spain	- <u>18</u>	Market price or cost reflecting tariff	Market price or cost reflecting tariff
UK		Market price	Market price

The business environment in Greece should be aligned to current best European practices



## A transparent pricing system would allow PPC's regulated tariffs to adjust to reasonable levels, reflecting costs





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#### Electricity prices for households<sup>(1)</sup> Jan 07 (€/ 100 kWh incl. all taxes)



Electricity prices in Purchasing Power Standards (PPS) for households<sup>(1)</sup> Jan 07 (€/ 100 kWh incl. all taxes)



Note<sup>(1)</sup>: Households – Standard consumer Dc: annual consumption: 3 500 kWh Source:Eurostat



Today, average market cost in Greece is approximately 25% higher than PPC's tariffs





## Actual tariffs are below market cost across the board in electricity market segments









### **Summary: Regulatory and Business Alignment**

## PPC proposes a tariff structure in line with current EU practices



PPC will assess strategies that will allow it to best align its business model to its European peers

First step is to assess the Legal Unbundling of Transmission and Distribution



**PPC's proposal for Tariff Increases** Submitted to the Ministry of Development and the Regulatory Authority for Energy



**Overall Average Tariff increase equals to 21.7%** 



## The introduction of an appropriate Fuel Clause to reflect International Fuel Prices Volatility in Electricity Prices



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- Electricity demand expected to grow by 2.5 % p.a.
- 10,000 MW additional new capacity (including Renewables) in Greece by 2020
- CO<sub>2</sub> costs expected to rise, starting from 2008
- Increased penetration by other generators and suppliers
- Emission limits to further tighten
- Although stabilized, the stripping ratio in PPC's lignite mines has deteriorated in the past four years
- PPC's ageing and inefficient plants need urgently to be replaced

## PPC's current Power Plant Portfolio exceeds 12.7 GW in capacity

nstalled	Vintage
Capacity	(Weighted Age
(MW)	in Years)

Interconnected System			
Hydro	3,017	28	
Lignite	5,288	25	
Fuel Oil	750	36	
Natural Gas	1,966	14	
Total	11,021		

	Islands	
Crete	770	15
Rhodes	234	14
Small Islands	650	36
Total	1,654	

	Renewables	
Total	91	





PPC is aiming to become an efficient and competitive generator in the liberalized electricity market through...

#### Objective

- A power plant portfolio that:
  - Ensures reliability and higher efficiency
  - Reduces generation costs
  - Sustains competitiveness
  - Respects the environment

#### **Strategies**



Build new plants embodying state of the art technologies



- Decommission aged and inefficient power plants
- 3 Accelerate completion of hydro projects
- 4 Decrease CO2 emissions
  - Improve procurement practices



### ...decommissioning old and inefficient plants

#### Old and inefficient plants

Power Station	Fuel	Capacity (MW)	Commissioning year
Ptolemais I,II,III	Lignite	320	1959-65
Ptolemais IV	Lignite	300	1973
LIPTOL I,II	Lignite	43	1959-65
Megalopolis I,II	Lignite	250	1970
Lavrio III	Natural gas	180	1980
Aghios Georgios VIII	Natural gas	160	1968
Aghios Georgios IX	Natural gas	200	1971
Lavrio I,II	HFO	450	1972-73
Aliveri III, IV	HFO	300	1968-69
Cyclades Islands	Diesel and HFO	200	various



### ....commissioning 631 MW of new hydro plants by 2013...

Hydro p	plants to	be commi	issioned
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Power Station	Unit	Installed Capacity (MW)	Commissioning Year
Mesohora	,	160	2009
llarionas	I, II	157	2010
Metsovitiko	Ш	29	2010
Sykia <sup>(1)</sup>	I, II	125	2013
Pefkofito <sup>(1)</sup>	I, II	160	2013

Note<sup>(1)</sup>: Subject to completion of dams by the State



#### Thermal plants to be commissioned

Power Station	Fuel	Installed Capacity (MW)	Commissioning Year
Aliveri V	Natural Gas	400	2010
Megalopolis V	Natural Gas	800	2011
Florina II	Lignite	450	2012
Ptolemaida V	Lignite	450	2012
Aliveri VI *	Hard Coal	700-800	2013
Larimna I *	Hard Coal	700-800	2014

Note<sup>(1)</sup>:In negotiations to be constructed with two minority partners (up to 200MW each)



As a result, PPC`s average operating cost<sup>(1)</sup> of thermal plants in the interconnected system is expected to decrease by approximately 23%

Expected operating cost in interconnected system



Note<sup>(1)</sup> constant prices; CO2 included; based on current financial projections and market conditions



PPC's market share in generation is projected to decrease to 70% by 2014<sup>(1)</sup>





- Shift from oil-fired to gas-fired generation in Crete after 2012 to decrease operating costs over 35% (over €150m p.a. in today's prices)
- 120MW oil-fired generation plant in Rhodes by 2011
- 120MW oil-fired generation plant in Lesvos by 2012
- Cyclades connection with mainland grid by 2012
- A total of 180MW units to be installed in various small islands
- Total generation investments in islands €1.3bn

### PPC's power plant portfolio in 2014 will be more balanced

Installed	Vintage
Capacity	(Weighted Age
(MW)	in Years) - 2014

Interconnected System			
Hydro	3,645	32	
Lignite	5,275	24	
Fuel Oil	0	-	
Natural Gas	2,630	8	
Hard Coal	1,200	1	
Total	12,750		

Islands			
Crete (HFO)	295	7	
Crete (Nat. Gas)	927	7	
Rhodes (HFO)	298	12	
Small Islands (D & HFO)	700	-	
Total	2,220		
Renewables			
Total	950		





### Key priorities in PPC's strategy

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#### Drivers

- Significant increase in peak-load during the summer months nationwide (e.g. 17% in Athens region, 10% in Thessaloniki this year)
- Upgrading and reinforcing existing urban networks
- Improve PPC's services to the customer

#### Reduce costs

#### Targets





Peak demand in Athens region has steadily increased over the recent past





### The grid is already showing signs of overloading...



## ...and all substations are expected to become overloaded in 2012, if capex remains at usual levels









There are €2.8 bn in RAB-based investments<sup>(1)</sup> in the Distribution network infrastructure pipeline for 2008-2014





2 Nationwide — 1,500 km per year of new MV and LV lines and various MV/LV substations

Routine network extensions (shared with customers)

- 180,000 new connections per year
- 4,000 km network per year

€615 m network capacity reinforcement

€2,200m routine network extensions



## PPC plans to invest €1 bn in RAB-based investments<sup>(1)</sup> to enable remote management

#### €100m for automatic network management

- Installation of remote control network switches
- 2 Integration of all HV/MV substations in
  - **Distribution Management System (DMS)**
- 3
- Power quality monitoring

#### €950m remote metering



**Remote Management** 



## Investments are expected to improve substantially the distribution efficiency ratios

Performance indicators					
	1	Service time for simple connections <sup>(1)</sup>		<sup>∍verag</sup> 17 11	e days days
	2	Service time for connections with network extension <sup>(1)</sup>		62 31	days days
	3	Restoration time for LV network		74 60	min min
	4	Restoration time for MV network		102 60	min min
	5	Interruption duration per customer per year		252 130	min min
	6	Energy losses	Estimated reduction of Distribution losses in the order of 15%		
	(1) (	Construction time	2007 2014		35

35



### **Drivers and targets for investments in Transmission**

#### Drivers

- Significant increase in peak-load nationwide (6.5% this year)
- Upgrading and reinforcing national transmission infrastructure
- Significant increase in renewable energy projects
- Enhancement of regional electricity trade

#### Targets

- 1 Expand capacity of the system
- 2 Increase reliability
- **3** Interconnection of Cyclades islands
- 4 Upgrade interconnection with Turkey
- 5 Interconnection of renewable energy stations



## €1,350 m RAB-based investments in Transmission network infrastructure 2008-2014

Projects agreed with HTSO and approved by Ministry of Developmet

#### **RAB-based investments in Transmission**



€600m new substations (EHV 400/150 kV, HV 150/20KV)



#### €700m new 400 kV lines

- 240 km submarine cable for interconnection of Cyclades
- 208 km interconnection with Turkey





### **Possible structure to maximize efficiencies**





## Reducing the efficiency gap: PPC is targeting a 20% reduction within 2008

#### PPC has an efficiency gap of ~€750m p.a. compared to European best practices



Note(1): Lignite as compared to hard coal



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#### Company's Strengths

- · Market leader in small hydro capacity
- Fifth in wind installed capacity
- The only company active in all four key renewable fields, leading in three

#### Major Projects

- 50 MW photovoltaic park in Megalopolis
- Joint Ventures :
  - ETVA-VI.PE. for the development of 35 MW of photovoltaic parks in industrial zones
  - EDF Energies Nouvelles for the construction of 122 MW of wind farms
- MoU with S&B for the development of up to 120MW of geothermal power on the Milos islands complex



### ...and further expansion is on track







Note (1): Risk adjusted



Through investments of €1.95 bn PPC is targeting a 20% market share by 2014



#### **Installed Capacity Year-End**





## SENCAP: Targeting projects in South East Europe



Objective	<ul> <li>SENCAP is the investment vehicle of PPC aiming to acquire and develop power assets in the South East European market, mainly targeting electricity sector investments of a variety of fuels (lignite, coal, natural gas, hydros)</li> </ul>
Capital	<ul> <li>Commitment of €600m of equity from SENCAP's shareholders to be invested within the next 3 to 5 years</li> <li>By applying non recourse project financing, SENCAP will use leverage, thus realizing investments of up to €2bn</li> </ul>
New shareholders	<ul> <li>The European Bank for Reconstruction and Development ('EBRD') has decided to participate in SENCAP with a minority stake of 10%</li> <li>The International Finance Corporation ('IFC', member of the World Bank Group) is also in the process of participating with a minority stake of 10%</li> </ul>





Project Components	<ul> <li>Construction of a new power plant of up to 2.100 MW and associated transmission capacity – the largest in the area</li> <li>Development of the Sibovic mine</li> <li>Rehabilitation of 800 MW units</li> </ul>
Status	<ul> <li>SENCAP formed a Bidding Consortium with ENEL (50/50) and have been short-listed</li> <li>The SENCAP/ENEL Bidding Consortium is currently performing its due diligence in collaboration with the Transaction Advisor, PWC</li> <li>Awaiting for tender documents to be issued by the Ministry of Energy and Mining in Q1 2008</li> </ul>



## All main European utilities are present in both gas and electricity value chain in an integrated way





#### Drivers

- PPC is the largest gas consumer in Greece
- Expand energy activities
- Counter balance potential decrease
   in electricity revenue

#### **Potential strategies**

**Organic Growth** 

**Inorganic Growth** 

Decided to exercise the Option of 30% stake in DEPA S.A.



Additional shareholder value can be captured through exploitation of PPC's real estate portfolio

#### **Drivers**

- Proper management of real estate portfolio can unleash significant value for PPC
  - Book value : €1.4bn (31/12/2006)
  - Estimated present value : €1.7bn
- Portfolio consists of ~7,000 real estate assets
  - 413,200,000 m<sup>2</sup> land
    - 3,200,000 m<sup>2</sup> within city limits
    - 410,00,000 m2 outside city limits
  - 1,850,000 m<sup>2</sup> buildings
    - 1,200,000 m<sup>2</sup> industrial
    - 650,000 m<sup>2</sup> offices and storage

### Goals



Secure property currently challenged by third parties, mainly municipalities

Provide efficient facilities and services in terms of cost and management to PPC units



Utilize and develop PPC's real estate portfolio



There are several options in determining the optimal real estate strategy

#### **Status**

- Valuation of portfolio to be completed soon
- Finalizing business models and the impact to PPC by the potential creation of subsidiaries
- Preparing the organizational charts and estimating the OPEX needed
- Drafting of functional relations between PPC and potential subsidiaries

### **Potential Subsidiaries**

- 1
  - PPC Real Estate Investment Company S.A. Better utilization of employed assets by PPC
  - **2** 
    - PPC Real Estate Development Company S.A.

Development of real estate assets



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#### **Our Mission:**

To enhance economic development and social prosperity by supplying reliable energy products and services, respecting the environment.

#### **Our Values:**

- Integrity
- Respect
- Awareness & Consensus
- Commitment to improvement



The most admired energy company in Europe

By providing, in a balanced way, to :

- Our customers
- Our employees
- Our suppliers & partners
- Our shareholders
- The environment
- The society

- Integrated, innovative and high quality products & services
- Excellent work environment & conditions
- Mutually beneficial relationships
- Enhanced value
- Respect & protection
- Economic development & social prosperity



#### **Elements of current state:**

- Strong company history
- Technical competency & know-how
- Operational decision-making at the top
- Management and employee roles not distinct

Already in transition to ...



Align corporate policies & practices with the vision:

- Build on employee loyalty
- Develop flexible management and organization systems and processes
- Enhance management profile & create momentum by:
  - Instilling sense of urgency and proactivity
  - Establishing open communication
  - Mobilizing informed decision making
  - Motivating personnel at all levels
  - Empowering managers towards a competitive status
- Develop best practice work ethics



## Thank you for your attention