

AFRICAN ENERGY SECTOR

PRESENTATION AT THE TECHNICAL CHAMBER OF GREECE

4th April, 201

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GROUP OVERVIEW



MYTILINEOS Group Overview

Mytilineos Holdings S.A. (“Mytilineos” or the “Group”), founded in 1908, is one of the leading industrial groups in S.E. Europe active in Metallurgy and Mining, Power and Gas, and EPC sectors.

Mytilineos is listed on the Athens Stock Exchange (ASE) and is 32.0% owned by the Mytilineos family.

Businesses

Power & Gas	<ul style="list-style-type: none">▪ Leading independent power producer (IPP) in Greece, with a long term strategy of becoming an integrated energy player.▪ Sole Gas importer after the local incumbent DEPA.
Metallurgy & Mining	<ul style="list-style-type: none">▪ Leading producer of refined alumina and primary aluminium in South-East Europe▪ Vertically integration - bauxite mines, alumina refinery and aluminium smelter with annual production capacity of 815k MT and 175k MT respectively
EPC	<ul style="list-style-type: none">▪ METKA – leading international EPC contractor in the power sector▪ Significant experience and know-how in state-of-the art gas-fired power plants





Company Profile

Operations

Turn-key Projects

- A leading international player in turn-key energy projects

Industrial Profile

- World-class manufacturing of high value-added, complex fabrications



Activity Sectors

Energy

- Complete power plants: engineering, procurement, construction (“EPC”)
- Solutions approach – emphasis on identifying the right technology and approach for each project, ranging from small up to very large 1000MW+ power plants
- Significant expertise in fast-track projects
- EPC and O&M for utility scale solar power projects

Infrastructure

- Complex steel constructions / Civil engineering applications (bridges, sports facilities, railway projects, roads, etc.)
- Oil & gas / refinery market

Defence

- Manufacturing co-production with defence majors: land defence systems, submarine pressure hulls, PATRIOT semi-trailers, LEOPARD hulls & turrets



International Presence



1

Focus on the regional markets of Europe, the Middle East and Africa

2

Well positioned in regional markets: Algeria, Greece, Iraq, Jordan

3

Recently established in Ghana

4

Continuously expanding to high potential markets



AFRICAN ENERGY SECTOR



Africa Region Profile

Region (SSA emphasis)

- 12% of World Population
- 4% of global energy demand
- 2% of Global GDP
- 6 of the world's 10 fastest growing economies are in Africa
- 4% of GDP investment in infrastructure (vs 14% in China)
- Strong momentum for change and international focus for development via DFIs and Global Schemes
- Significant Oil, Gas, Renewables Resource Potential





African Energy Status

Current Generation, Access and Consumption

- 90GW installed production capability (approx. 50% in South Africa) - Spain has 110 GW in comparison.
- Generation split - 45% Coal (SA biased), 22% Hydro, 17% Oil, 14% Gas, 2% Renewables (PV, Wind)
- Poor infrastructures in most countries with low reliability supply, frequent load shedding sometimes for most of the day.
- Very limited access to electricity approx. 32% (600 million people have no access)
- Just 7/48 countries (SSA) with >50% electrification (South Africa, Ghana, Gabon, Namibia, Cote d'Ivoire, Senegal, Cameroon).
- Low Consumption of 128kwh/capita/annum (equal to a 100W lightbulb on for 3h/day)





African Energy Resource Capacity Potential

Estimated Natural Resources

- Since 2009 30% of global oil/gas discoveries were in Africa (mainly in East Africa)
- Energy Capacity Potential of > 1TW
- 400 GW Gas (Mozambique, Tanzania, Nigeria)
- 350 GW Hydro (DRC Inga, Ethiopia, Cameroon)
- 300 GW Coal (South Africa, Botswana, Mozambique)
- 110 GW Wind (e.g. Lake Turkana Wind Project 300MW)
- 15 GW Geothermal (Kenya, Ethiopia, Tanzania)





African Energy Demand and Development

Demand Forecasts (next 25 yrs)

- 2x current Population
- 5x increase of GDP (4.6% CAGR)
- 4x increase in Power Demand (4.5% CAGR)
- Electricity Access increase from 30% to 70-80%



Development Forecasts (next 25 yrs)

- **Generation - USD 490 Bn**
 - *Gas - approx. 50% (240Bn)*
 - *Renewables - Hydro, PV, Wind, Geo approx. 25% (122Bn)*
- **Transmission/Distribution - USD 345 Bn**





Energy Projects in Africa

CHALLENGES

- Impact of Jihadist activity (Mali, Burkina Faso, Ivory Coast Nigeria etc.)
- Government control of prices, subsidies (non-cost reflecting tariffs)
- Corruption
- Execution risks in such challenging markets
- Network/Distribution limitations
- Resource mobilization limitations

OPPORTUNITIES

- Market reforms (privatizations, PPPs)
- New institutional and regulatory frameworks
- Transition to cost reflecting tariffs (CRTs)
- Global commitment schemes
- UN Sustainable Energy For All (>USD120bn commitments)
- US Power Africa Initiative (>USD20bn commitments)
- Investment from World Bank Group (WBG) and European Investment Bank

Q & A



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THANK
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