#EnergySecurityEurope

VADYM POZHARSKYI, ADVISOR TO THE BOARD
Burisma Holdings is an independent oil and gas company, operating in Ukraine. Since its launch in 2002, the company has rapidly become one of the largest independent gas producers in the country.

- **20 LICENSES** for hydrocarbon production in the main oil and gas basins of Ukraine.
- **5520** depth of our deepest well in the Dnieper-Donets basin.
- **1 BCM** volume of natural gas — target 2015.
- **26%** company’s market share among independent oil and gas producers.
- **96%** of the company’s production volume comes from the Dnieper-Donets basin, which contains 82% of the total natural gas reserves in Ukraine.
- **21 WELLS** drilled in 2014.

Source: Burisma Holdings
Board of Directors

Alan Apter
Chairman
Has 27 year experience in investment banking, including Merrill Lynch, Renaissance Capital, Troika Dialog and Morgan Stanley

Aleksander Kwasniewski
Director
The President of the Republic of Poland in 1995-2005, Member of the Board of Trustees of the International Crisis Group

Hunter Biden
Director
Counsel to Boies, Schiller, Flexner, LLP, Chairman of the United Nations World Food Program (WFP)

Devon Archer
Director
Chairman of Burnham & Co., Managing Director of RSTP, LLC
Operating results

Reserves
Mln. barrels of oil equivalent
Total: 445 mln. BOE

- Proved 67.6
- Probable 81.5
- Possible 295.8

Production
Annual production in mln. cubic meters
62% CAGR

Drilling
Cumulative number of wells at period-end

- Accumulated total
- Drilled over the period

Source: Burisma Holdings
Burisma Geothermal is a new branch of Burisma Holdings, one of the largest independent oil and gas producer in Eastern Europe. It is a 100% subsidiary which specializes in geothermal energy development and electricity production from renewable and environmentally friendly energy sources in Europe.

Burisma Geothermal seeks to strengthen the role of renewable energy globally and encourage alternative energy development with a new vision and the latest technological initiatives.

Burisma Geothermal is a member of the world’s largest geothermal energy associations. Together with our partners, we strive to alter global environmental standards by means of fresh thinking, refined strategies, and new implementation mechanisms: stimulating a transition from conventional to alternative energy sources.
Europe vs. World, (*MW)

World:
- 2000: 8322 MW
- 2007: 9863 MW
- 2009: 10727 MW
- 2011: 10914 MW
- 2012: 11294 MW
- 2014: 12414 MW

Europe:
- 2000: 776 MW
- 2007: 1185 MW
- 2009: 1301 MW
- 2011: 1426 MW
- 2012: 1439 MW
- 2014: 1486 MW

+49.2% World
+91.5% Europe

Source: IRENA
Why is Europe geothermal energy-hungry?

POINTS OF GROWTH

**GEOPOLITICAL**
Diversification of gas supplies and dependence of certain countries on pricing for natural resources calls for immediate revision of European policy on energy security.

**POLITICAL**
Reducing dependence of local energy systems on energy imports directly contributes to the political independence of countries worldwide. The development of alternative geothermal technologies compensates for a lack of energy.

**SOCIAL**
In contrast to the direct importing of resources, the development and construction of geothermal power plants creates new jobs and stimulates R&D.

**ECONOMIC**
Increasing the share of renewables in a country’s energy balance is an economic requirement of our current reality and the foundation for future prosperity. The cost of electricity from renewable energy sources is already comparable to the price of gas energy.

**ENVIRONMENTAL**
Geothermal energy is an inexhaustible and clean resource contained within the earth, in the form of hot water or steam. Unlike solar or wind energy, geothermal is base load energy production and does not depend on environmental conditions.
Its import dependency is particularly high for crude oil (MORE THAN 90%) and natural gas (66%). The EU’s total import bill is more than €1 BILLION per day. Many member states are heavily reliant on a single supplier, including some that rely exclusively on Russia for their natural gas.

Imports of gas to the EU
311 500 000 000 m³
The Evolution of EU directives

European Commission released its new Strategic framework for an Energy Union

EU leaders agreed on a new 2030 policy framework for climate and energy

Directive 2009/28/EC on the promotion of energy use from renewable sources

20-20-20 targets endorsed by EU leaders

Directive 2009/28/EC introduces the definition of geothermal energy and establishes mandatory national targets & national renewable energy action plans for all types of renewable energies, including geothermal

The mission of the Roadmap project is to “… provide a practical independent and objective analysis of pathways to achieve a low-carbon economy in Europe, in line with the energy security, environmental and economic goals of the European union”

www.roadmap2050.eu

Source: European Commission
Geothermal Energy in Europe

Germany

32 MWe installed capacity
7 operating projects

43 geothermal projects under development
Feed-in tariff 252 EUR/MWh
State guarantee 20 years

EU

51 geothermal power plants in EU member states, mainly in Italy and Germany with total installed capacity of 945 MWe
Total production of geothermal electricity in 2014 – 5,5TWh
NREAPs project a geothermal electricity production in the EU of 28 TWh in 2020
Economic resource of geothermal power in the EU amounts to 34 TWh in 2030
Economic potential in the EU grows to approximately 2750 TWh in 2050, covering 50% of the projected electricity produced in the EU

Italy

36 operating projects
772 MWe installed capacity

25 geothermal projects under development
Feed-in tariff:
- 230 EUR/MWh for Pilot projects (ministerial governance)
- 159 EUR/MWh for Conventional projects (regional governance)
State guarantee 25 years

Source: Rete Geotermica, Bundesverband Geothermie, European Geothermal Energy Council (EGER)
Target markets of Burisma Geothermal

<table>
<thead>
<tr>
<th>Lardarello and Mt. Amiata Fields</th>
<th>Area</th>
<th>Bavarian Molasse Basin</th>
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<tbody>
<tr>
<td>Tuscan nappe</td>
<td>Target formation</td>
<td>Malm</td>
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<tr>
<td>Hot water Steam</td>
<td>Resource</td>
<td>Hot water</td>
</tr>
<tr>
<td>1500 – 2500 m</td>
<td>Depth</td>
<td>3500 – 5000 m</td>
</tr>
<tr>
<td>500 m</td>
<td>Reservoir thickness</td>
<td>500 m</td>
</tr>
<tr>
<td>150° C-300° C</td>
<td>Temperature</td>
<td>125° C – 150° C</td>
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<tr>
<td>70 – 100 l/s</td>
<td>Flow rate (water)</td>
<td>110 – 150 l/s</td>
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<tr>
<td>ORC binary / Flash</td>
<td>Technology</td>
<td>ORC binary</td>
</tr>
<tr>
<td>159-230 Eur/MWh</td>
<td>FIT</td>
<td>252 Eur/MWh</td>
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</tbody>
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Source: Rete Geotermica, Bundesverband Geothermie, European Geothermal Energy Council (EGEC)
Principles of effective Geothermal policies

- Awareness and promotion of RES
- Renewable energy’s continuous development
- Mainstream
- Sustainable development
- Technological progress, R&D

SMAR T ENERGY
Burisma Geothermal
We are open for cooperation

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Energy security for the future