

Lubel coking coal deposit development in Western Ukraine



COKING COAL MARKET

1. Coking coal market environment: strong demand in Ukraine and Europe

LUBEL #1-2 COAL MINE

- 2. Location and infrastructure
- 3. Lubel coal deposit reserves and coal quality
- 4. Quality comparative diagram
- 5. Project developers and advisers
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'GALYCHYNA' FEC

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1. COKING COAL MARKET ENVIRONMENT: STRONG DEMAND IN UKRAINE AND EUROPE



COKING COAL MARKET IN EUROPE

In 2015 coking coal consumption (hard, semi-soft, PCI) in Europe exceeded 80 Mt of which **64Mt were imported** incl. **40 Mt of hard coking coal (of comparable quality to coal that will be produced by Lubel #1-2 coal mine)**

Based on data by CRU international analytical company (metallurgy and raw material sector, Great Britain), a **shortage** of coking coal **in Europe will reach 65 Mt p.a. in 2016-2017 and will keep increasing** due to planned closure of mines in Germany

In 2017-2018 coking coal prices remained stable at levels above USD 200/t, average price of imported coal to Ukraine amounted to USD 215/t

IMPORT OF COKING COAL TO UKRAINE

Import of coking coal in 2013-2014 to Ukraine exceeded 12 Mt p.a.

Import of coking coal to Ukraine in 2015 amounted to 12.2Mt (54% by weight from Russia, 23% from USA), 13.5 Mt in 2016 (69% - Russia, 13.3% - USA, 6.2% - Canada, 5.4% - Australia), 13.6 Mt in 2017 (63% - Russia, 21% - USA, 7.6% - Canada, 3.9% - Australia) and 14.0Mt in 2018 (64% - Russia, 28% - USA, 4.3% - Canada, 1.3% - Australia)

Forecasted shortage of coking coal in 2019 will be at levels of 14.5-15 Mt p.a.

DEMAND FOR LUBEL COAL

Major Ukrainian metallurgical producers indicated an interest to purchase Lubel #1-2 coal: in total for the volume of 7.4 Mt p.a.

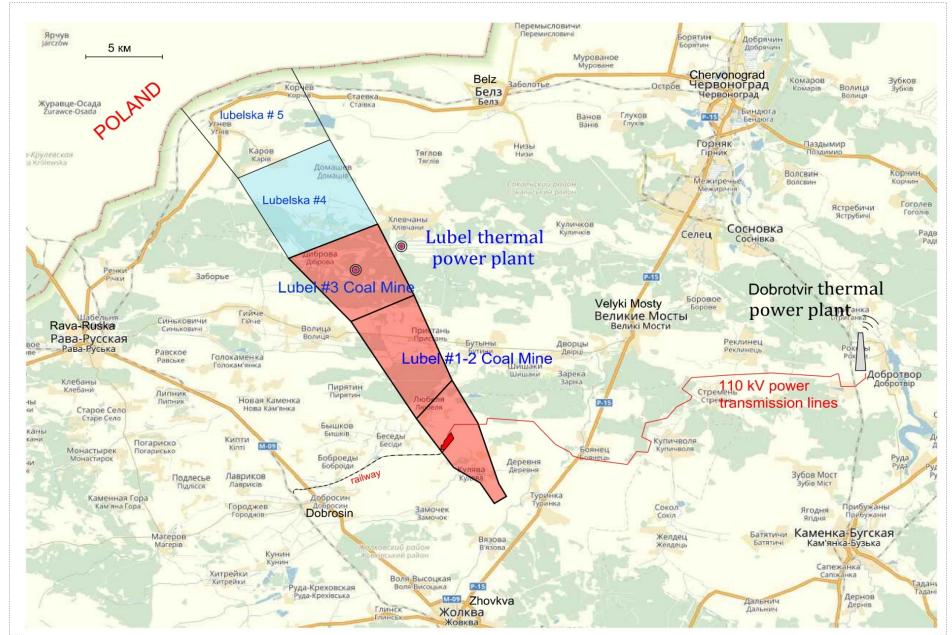






2. LUBEL #1-2 COAL MINE: LOCATION AND INFRASTRUCTURE





3. LUBEL #1-2 COAL MINE: LUBEL COAL DEPOSIT RESERVES AND COAL QUALITY



LUBEL COAL DEPOSIT RESERVES AND RESOURCES

| Reserves assessment | Area #1-2 | Area #3 | Area #4 |
|---|---|---|---|
| According to international JORC Code | 176.6 Mt = 134.5 Mt (measured +indicated) + 42.1Mt (inferred) | 158.9 Mt = 124.6 Mt (measured +indicated) + 34.3 Mt (inferred) | no assessment |
| In compliance with standards of Ukraine | 153.10 Mt (reserves in categories B+C1 on balance of GKZ*) | 123.85 Mt (in categories B+C1, approved by GKZ*) | 108.87 Mt (reserves and resources in categories P1+C2) |

AVERAGED QUALITY PARAMETERS OF SALABLE COAL FOR SEAMS OF LUBEL #1-2, LUBEL #3 COAL MINES

| | Lubel #1-2 coal mine | | Lubel #3 coal mine | |
|--|----------------------|----------|--------------------|------|
| | Field #1 | Field #2 | Field #3 | |
| Coal grade (DSTU-96 Ukraine standard) | К | | Ж (ZH) | К |
| Ash content (A ^d , %) | 2,7 | 3,0 | 2,4 | 3,7 |
| Volatile matter (V ^{daf} , %) | 23,0 | 25,2 | 27,0 | 26,9 |
| Sulphur (Std, %) | 0,72 | 0,90 | 1,32 | 0,73 |
| Coke strength reactivity (CSR, %) | 64,0 | 61,6 | >57,5 | 63,3 |
| Coke reactivity index (CRI, %) | 23,7 | 25,6 | <28 | 24,3 |

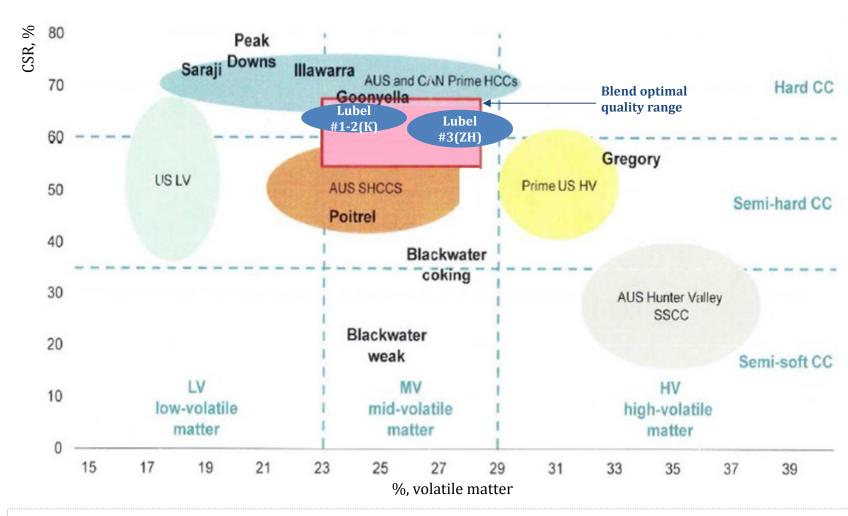
Estimation of reserves and coal quality analysis of Lubel deposit were carried out by independent consultants and laboratories (Central Mining Institute in Poland (GIG, Katowice), SGS Ukraine, Ukrainian Coal Chemical Institute (UKHIN), Wardell Armstrong (UK), GeoExpert (Poland)

^{*} GKZ: the State Commission on Mineral Resources of Ukraine

4. LUBEL #1-2 COAL MINE: QUALITY COMPARATIVE DIAGRAM



COMPARISON OF LUBEL MINE COAL WITH COAL DEPOSITS OF MAJOR COAL PRODUCERS (USA, AUSTRALIA)



By its qualitative and quantitative characteristics Lubel #1-2 mine (K grade) coal is close to Australian hard coking coals (HCC 64); this fact has positive influence on the price of Lubel coal and actual interest of metallurgical producers to purchase

5. LUBEL #1-2 COAL MINE: PROJECT DEVELOPERS AND ADVISERS



PROJECT DEVELOPERS AND ADVISERS



- China Coal Mine Construction Group Corp. (CCMC, general contractor, China)
- Hefei Design and Research Institute of Coal Industry (designing engineer, China)
- PJSC Luganskgiproshakht, State company Yuzhgiproshakht (designing engineers, Ukraine)



- DMT / IMC Montan-Consulting(Germany);



- Wardell Armstrong (UK)



- Capital Equipment and Trading Corporation (CETCO, USA)



- Mineral and Energy Economics Research Institute (Poland)



- Ukrainian Coal and Chemical Institute



- SGS Ukraine



- Central Mining Institute (Poland)

FINANCIAL ADVISERS, CORPORATE SECRETARIES



- JP Morgan Cazenove (UK, private placement arranger)



- Bank of Montreal (financial advisor)



- PricewaterhouseCoopers (corporate secretaries)



- Deloitte (auditor)



- More than USD 60m have been invested during pre-construction period;
- Mine Construction Project (5.2 Mt p.a. production capacity) has been successfully approved by passing and integrated state expertise;
- In 2008 coal reserves of #1 and #2 areas were approved according to JORC Code (Wardell Armstrong, UK);
- In December of 2013 PJSC Luganskgiproshakt developed Bankable Feasibility Study (BFS) with an increase of mine production capacity up to 8 Mt run-of-mine coal p.a.;
- -In 2014 CCMC (general contractor) and Hefei Design and Research Institute of Coal Industry completed BFS for the mine with annual 8 Mt run-of-mine production capacity (in line with requirements of Chinese financial institutions);
- In 2016 geological exploration of Area #3 was completed and the results were approved by State Commission on Mineral resources (February 2017), in addition to that GeoExpert (Poland) performed an estimation of reserves according to an international JORC Code;
- Land was allotted (367.2 ha), corresponding infrastructure construction was carried out: roads, bridges, surface drainage, surface topsoil was removed;
- Technical specifications for electric power supply and the project of railway line construction from Dobrosin station (length of 12 km, land allotment of 35.6 ha) were approved;
- State company Yuzhgiproshakht completed mine project documentation update for 8 Mt run-of-mine coal annual production capacity. Construction project has successfully passed State Expertise (May 2017)
- Project obtained positive conclusion of state expertise from the Ministry of Trade and Economic Development (September 2018) and the Ministry of Energy and Coal (July 2019)
- PROJECT IS READY FOR CONSTRUCTION COMMENCEMENT

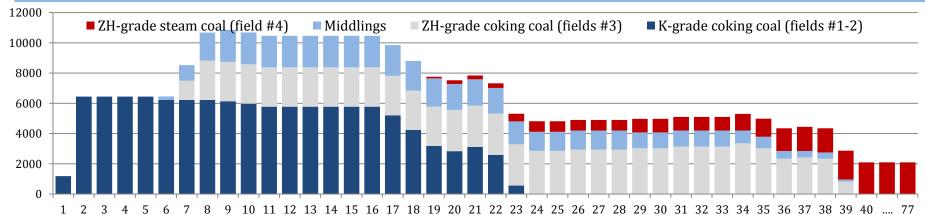
7. LUBEL #1-2 COAL MINE: TECHNICAL AND ECONOMIC INDICATORS



Based on BFS results (done by general contractor – CCMC (China) - one of the largest mine construction companies in the world), and general contractor 'Yuzhgiproshakht' (Ukraine), Lubel #1-2 mine will has the following indicators:

- Project capacity: 8 Mt run-of-mine coal p.a.;
- Net investments (net of VAT): USD 843m (CCMC) / USD 894m data of 'Yuzhgiproshakht'+USD 39m for an increase of washing plan capacity;
- Mine life 39 years (subsequent development of coalfields #1-2 and #3) or 77 years, including field #4;
- Construction period: 38 months;
- Mine will reach project capacity in 13 months after commissioning;
- Annual sales: 6.1-6.5 Mt of coking coal p.a. (range for the first 7 years of operations);
- Workforce: 2700-3000 employees;
- Construction period and timely achievement of production performance under 'turnkey' construction
 principle will be guaranteed by general constructor (through issuance of corresponding bank guarantee to
 a bank that will be financing the construction process)

SALEABLE COAL PRODUCTION (BASED ON CONSEQUENTIAL DEVELOPMENT OF #1-2 AND #3-4 COALFIELDS*, in thousand tons)



* Consequential development assumes putting in operation of mine #1-2, repayment of construction loan during years 1-3 and commencement of coalmine #3 construction in year 3 by the means of profits, generated by coalmine #1-2



- Cash cost of salable coal is less than USD 27/t;
- **Forecasted sale price USD 160/t** (DAF basic price on the border with Poland, according to estimations of sector analysts);
- Annual EBITDA = USD 843 m (the average value for the first 8 full years of operations);
- Annual net profit = USD 594m (average value upon repayment of construction loan);
- Annual depreciation = USD 110 m (can be used for credit repayment and payment of dividends);
- Payback period is 24 months from the moment of putting into operation (IRR = 37.4%);
- BFS calculations are based on assumption of 7% p.a. interest rate for long-term financing

HIGH AND STABLE FINANCIAL RESULTS

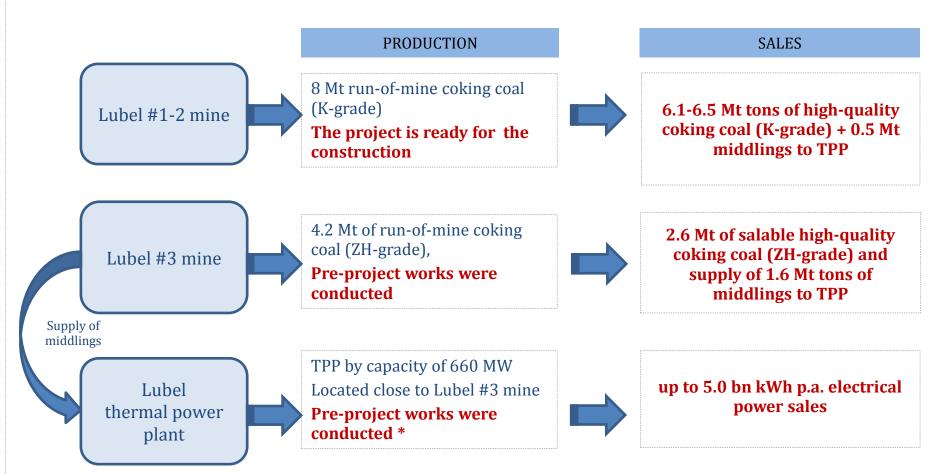


THE OPERATIONS
OF THE MINE WILL
SIGNIFICANTLY
IMPROVE
BUSINESS CLIMATE
AND BUDGET
INDICATORS OF
THE REGION AND
THE UKRAINE

- Putting mine into operation creates more than 3,000 working places for mining professionals, which will significantly reduce regional unemployment rate, correlated directly with the closure of mines in Ukraine;
- An average monthly wage (including taxes) exceeds USD 1000 per worker;
- The production of more than 6 Mt salable coal will significantly increase the volumes of railway transportation;
- The mine will become the largest regional consumer of electricity 235 million kWh p.a.;
- Annual sales of 6.1-6.5 Mt (high-quality coking coal) will reduce the shortage of coking coal in the Ukraine and will allow to replace the import from Russian Federation;
- Annual taxes and fees, paid by the enterprise to the budget of the country and the region will exceed USD 150m



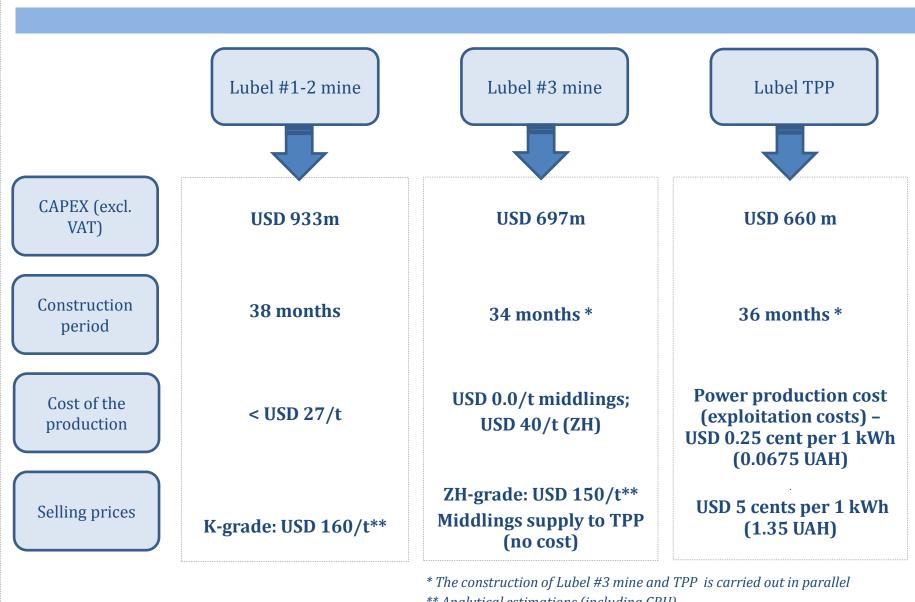
"GALYCHYNA" FEC- a complex of 2 mines (Lubel #1-2 and Lubel #3) jointly producing up to 12-13 Mt of run-of-mine coal p.a. + 660 MW thermal power plant (TPP) with the efficiency ratio of 42-48%, replacing depreciated thermal power plant capacities in the Ukraine



^{*} The works were carried out by the Institute of Coal Energy Technologies of the National Academy of Sciences of the Ukraine

11. 'GALYCHYNA' FEC: TECHNICAL AND ECONOMIC INDICATORS

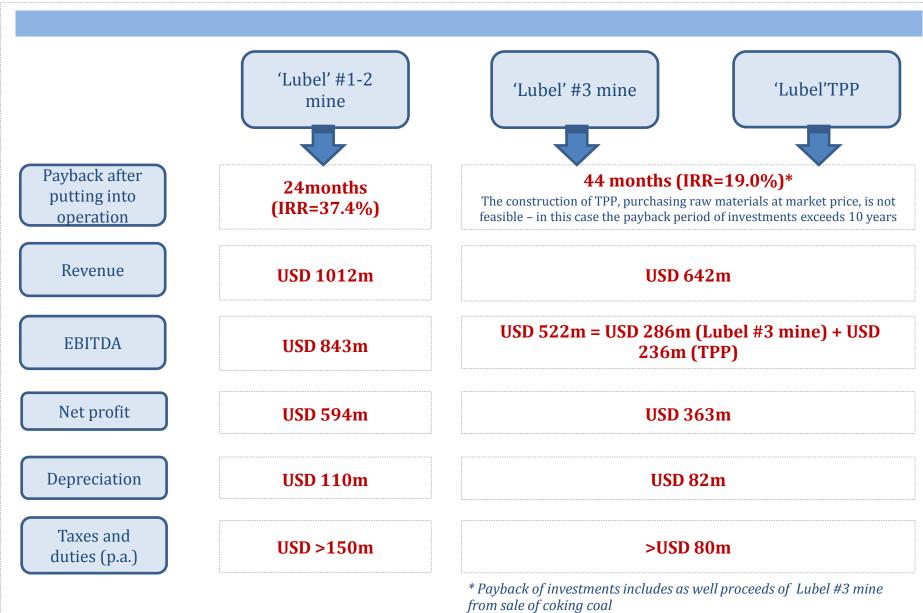




^{**} Analytical estimations (including CRU)

12. 'GALYCHYNA' FEC: FINANCIAL INDICATORS







- Employment of professional staff: operations of 2 mines and power station require a personnel of 6-7 thousands and will significantly decrease an unemployment rate related to coal mines closure in the region;
- The production of >9Mt salable coking coal:
 - a) compensates ca. 65% of existing coking coal deficit in Ukraine;
 - b) allows for substitution of coal imported from Russia;
 - c) significantly improves trade balance of Ukraine with the proceeds from exported coal;
 - d) intensifies railway transportation volumes;
- Profitable operations of 'Galychyna' fuel-power complex generate state and regional budgets inflows (in kind of corporate profit taxes and other duties) of more than USD 230m;
- Availability of 5.0 bn kWh power p.a. produced at low cost (USD 0.0025 per 1 kWh) allows to compensate existing shortage of power in Western region of Ukraine and export electrical power abroad bringing additional foreign currency inflows

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