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Ostrołęka C – the investment rationale, and why is the project not rational at all

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Summary

1. The Ostrołęka C investment budget might be hardly undervalued - benchmark of other coal power plants in Poland shows that this would be another high risk project. Strong integration of the power generation sector in Poland have induced creating a business plan with unrealistic assumptions.

2. Capacity market introduced recently in Poland does not constitute a steady and secure revenue stream for Ostrołęka C. The analysis of a similar mechanism in UK shows that existing units belong to the greatest beneficiaries of this system - they tend to squeeze out the new projects from this market. Although this would vastly and positively influence the financial condition of the power plant, it entails a remarkable risk of contract penalties as well.

3. The analysis of 100+ power plants in the CEE region shows, that emission purifying systems for Ostrołęka C might be undervalued by about 0.5 bn PLN. Furthermore, due to administrative oversights the integrated permit obtained by the investor will expire soon. Hence, the application process has to be commenced again, yet under more strict regulations. This would definitely delay the commissioning process.

Ostrołęka C – the investment rationale and why is the project not rational at all

Ostrołęka C (OsC) is an investment plan to build 1000 MW supercritical coal-fired power plant. It was relaunched in 2016 and its main goal is to replace old, highly inefficient units with modern technology. Over 45% of electricity in the domestic power system is generated by units commissioned more than 40 years ago. One of them is a 50 years old Ostrołęka B power plant (681 MW) scheduled to be mothballed in 2030. Hence, Energa and Enea have decided to replace it with Ostrołęka C - its CAPEX was initially estimated for **5.5-6 bn PLN** with planned commissioning in 2024.

Decision of the Energa's management board to relaunch the project was widely criticized among experts. Engineers, economists and ecologists stress the fact that the size of unit and inability to fast ramping makes it redundant in the Polish power system. Some analysts covering Energa and Enea claim both investors will eventually resign from the project. According to energy journalists, **LCOE of the projected plant may be twice as big** as the current average price on TGE (Polish Energy Pool).

Investment timeline and environmental issues

- PSE forecasts that National Power System (NPS) will face shortages of required power surplus from 2020-2022 onwards. Main reason for that is

decommissioning and refurbishments of existing coal-fired units and continuous growth of demand for electric power. In the upcoming two years, Opole II, Jaworzno and Kozienice will be commissioned in order to overcome those issues.

- However, Instrat analysts observe that thermo-modernization of the residential buildings, smart grids implementation and rapid development of highly efficient elastic CHPs might help NPS mitigate outages risk at a smaller economic and social cost.
- Main project initiator, Energa has been working between 2008 and 2012 on the initial concepts of building 900–1000 MW unit. Final conclusion at that time was to discard Ostrołęka C project. Decisive factors for that were: **insufficient forecasted price of electric power, increasing cost of EUA certificates, comparably higher fuel transportation costs and insufficient support for biomass cofiring.**
- Moreover, many doubts concerned the role of the OsC in the NPS. North-eastern Poland is not an industrialized region, whilst the power demand of the Warsaw metropolis is met by other units. Moreover, LitPol Link interconnection with Lithuania decreases the risk of the temporary power supply shortages.
- From the leading investor's perspective, there is a number of risk factors around one project: Energa has a low market share (3%) on the power generation market. This creates a high **exposure of one project for the whole generation segment**, consisting of <20% of total Energa EBIDTA.
- During the first efforts to build OsC before 2012, the company has decided to apply *Project Finance* model, but with certain requirements (IRR > 10%, NPV > 0.8 mPLN/MW). Internal and external analysis (8 valuations made by EY) have proved OsC will not meet satisfactory profitability measures and hence the project was terminated by the management and advisory board of Energa in September 2012. Furthermore, the investor failed to find a domestic or foreign commercial partner and did not manage to sell the SPV after 2012.
- **Despite numerous and strong arguments not to undertake the Ostrołęka C investment, Energa management board under Daniel Obajtek relaunched the project in 2016.** The co-investor, Enea is to support financially project by providing half of the budget and know-how obtained from building Kozienice PP. Business plan has been updated with key assumptions regarding the cost (agreement with PGG) and revenue perspective (capacity market).
- Apart from the financial exposure, new power plant constitutes also a threat to the environment and the local community. Surprisingly, it is strongly supported by the municipalities and many of the inhabitants who are driven by job opportunities in the region, but forget about environmental and health costs.
- **Number of deaths related to the emissions generated by the power plant during its whole life cycle is estimated to reach 146–391** – this only reflects three closest provinces. On top of that, total GDP loss due to premature deaths and increased morbidity in the whole country would reach **150–300 mEUR**.

Capacity market

- The key reason to introduce the capacity market (CM) mechanism is to financially support the conventional energy sources, which face rising coal and gas costs and decreasing electricity prices on the wholesale market. Draft of the Capacity market act has undergone significant changes under public consultations and EC pre-notification procedure. Crucial instruments to support new power plants (Ostrołęka C and its peers) were eventually eased or erased in the draft.
- We distinguish three major amendments to the draft to be disadvantageous for new LCPs (large combustion plants):
    - Single auction clearing price - no auction buckets for LCPs and hence lack of a chance to play under less fierce competition with units of every size, age and subsidization level
    - Capacity contract feasibility and its measurement basis - 4 hours period, instead of 16 hours favourising inelasticity - coal fired units seem to show decreasing returns to scale
    - environmental premium - 2 years premium for units with CO_2 emission <450 g CO2/kWh has been granted to support non conventional energy sources and guarantee them advantage created coherently with the Polish energy law
- Revenue stream from the capacity market does not unambiguously guarantee OsC profitability. There is a number of legal doubts concerning subsidy mechanisms for coal-fired plants after 2030. Though the Polish CM Act has been approved by the European Commission, it is still not certain if longer contracts would be executed under new ETS arrangements.
- Capacity market in Poland has been patterned on the UK legislation. Both regulator's and legislator's expectations have been so far unfulfilled. New power plants accounted for only 5.3% of the contracted volume in the first year (2014) of the auctions and their success rate in first rounds (2014–2016) didn't even exceed 30%.
- Beside benefits - new potential revenue streams, the CM mechanism also generates a risk for future investments and their owners. Due to delays in the investment process, OsC would be connected to the NPS at the earliest at the beginning of 2024, having a contract for 2023 already. In this case, Instrat analysts estimate the contract penalty to reach 4.3–8.4% (base case scenario) up to 7.7–11.2% (worst scenario) of the yearly depreciated CAPEX.
- The domestic power generation market is highly concentrated (2016: CR3=63%) - despite liberalization, this trend is bound to intensify. On the introduced subsegment of the generation market - capacity market - there might be no space for a large (>800 MW) and new (not depreciated) power plant. Instrat analysts also expect a conflict of interests: Ostrołęka C would compete in the same capacity mechanism auctions as the recently commissioned Kozienice PP - both investments are owned by Enea, which put at risk its market position.

Costs

- According to Instrat analysis of three recently build new coal-fired units, the construction of large (>800 MW) and costly (5.5–13 bn PLN) units might exceed managerial skills of investors (Energa & Enea) and technical experience of the Polish construction companies consortiums.
- In December 2016 Energa opened an EPC tender for Ostrołęka C. Initially, five competitors considered participation in the project. Finally, there were three offers made: China Power Engineering (4,849.8 mPLN), GE Power & Alstom (6,023 mPLN) and Polimex-Mostostal & Rafako (9,591.5 mPLN). As the investor's budget totalled 4,803.2 mPLN, none of the offers met the financial constraint. Nevertheless, price criterion was purposefully embedded in the tender in an indirect way as "economic criterion" based on NPV formula. It enables Energa a more flexible approach and justifies selection of higher priced offers.
- One of the tenderers, Polimex-Mostostal (PxM) has been recapitalized by the state-owned energy companies in January 2017. This creates a pressure on Energa & Enea to favour its related entity in the tender process. Given that PxM wins the tender and together with Rafako builds Ostrołęka C **for a price twice as high as the budget**, PxM's shareholders (incl. Energa & Enea) are released from financial troubles. These arose as PxM was building Kozienice PP for Enea and undertook legal actions with GDDKiA (central road infrastructure manager).
- Energa has signed a long-term coal supply contract with PGG (restructured, state-owned hard coal producer). Prices in this agreement are based on the Ostrołęka C's operational risk – PGG has to return a favour for capital injection (ca. 2.5 bn PLN in total) it received from its client. Conditions at which OsC purchases coal is dependent on average market electricity price or even its profitability. Third parties would not sign such a contract – this is however feasible as the energy market underwent vertical consolidation. The loss incurred by the PGG is a profit for Energa – it helps the power plant construct a business plan with sufficient profitability, but distorts market relations.
- Construction of a combustion power plant after ETS reform entails additional regulatory risk. According to our calculations, CO_2 emission certificates costs for Ostrołęka C might be around 60% higher on a yearly basis, than those estimated in July 2016.

Financing

- Energa uses diversified financing strategies for its operational activity – it applies even tax optimization schemes to decrease the cost of capital. In 2013 and 2017 company issued bonds (0.8 bn EUR) via its Swedish subsidiary in Luxembourg for international investors. As a result, the issuer enabled bondholders avoiding withholding tax on interest gains, which would be paid if the emission was settled in Poland or directly in Luxembourg. Higher net yield for investors causes losses in tax revenue, which encumbers Energa's

majority shareholder, i.e. the state. This financing strategy constitutes unfair tax competition on the domestic capital market.

- Energa plans to conduct investments of 4.8 bn EUR within the 2016–2025 period – mostly on transmission networks and development of renewable energy power sources. Partially, these will be financed with the capital acquired through bonds issued in Luxembourg. There is however a justified concern that 0.3 bn EUR acquired in Luxemburg (2017) might be used to finance Ostrołęka C construction. This would be an unfair accounting policy aiming to hide true rationale for the capital raise – Instrat analysts find this strategy not compliant with the highest corporate governance standards. In effect, it lets bondholders not apply their decarbonization divestment policies.
- European Investment Banks (EIB) became Energa's creditor in 2017 by acquiring 250m EUR bonds. Hence, the company finances its investments in high voltage networks and enjoys a favourable interest. This is possible only thanks to the separate treatment of Energa's business segments – distribution and generation. Should these be treated as one entity, EIB would be forbidden to invest in a company with [skażone] assets. Energa then benefits from lower cost of debt from international investors, which compensates its higher cost of equity and debt on the domestic capital market used to finance investments in coal power plants.

BAT/BREF conclusions

- Energa acquired in 2011 the integrated permit allowing it to commission Ostrołęka C after 2016. Possession of a binding concession strongly influenced the decision to relaunch the project in 2016. According to the EU Industrial Emissions Directive, (IED) Ostrołęka C is classified then as an **existing LCP** and hence underlies less strict emission standards. This allows it to apply less expensive emission purification systems, causing more harmful emission.
- Theoretically, the integrated permit is valid since 2016 for a ten years period. However, due to oversight in administrative procedures, it will expire in June 2018, as the investor will not manage to commission the plant until this time. Hence, OsC has to commence new application process, but this time under IED classification as a **new LCP**. This incurs higher capital expenditures to meet BAT/BREF standards with lower emissions.
- Instrat analysts conducted an analysis based on 130 power plants in CEE, which shows that BAT/BREF installations for Ostrołęka C would cost 480–615 mPLN (existing LCP) or even more likely 643–1,033 mPLN (new LCP). Hence, we claim that **the aforementioned budget of 4.8 bn PLN might be undervalued**.

Next steps

A number of risk factors should be interpreted by the management and advisory board of Energa and Enea as a warning and threat for the investors' stability, whilst

deciding on construction of the last large coal-fired plant in Europe after 2020. Firstly, the local community of the Ostrołęka region, should be worried about burning up to 2.8m tonnes of hard coal every year and thus strongly influencing their health condition and mortality. Secondly, banks and insurers (incl. state-owned PZU) as well as energy construction companies involved in the Ostrołęka C project will carry the risk exceeding potential gains from the new investment.