



**Development Strategy of LW Bogdanka S.A.
Mining Area of the Enea Group
until 2025 (under the 2030 framework)**



Enea
LUBELSKI WĘGIEL
„BOGDANKA”
SPÓŁKA AKCYJNA



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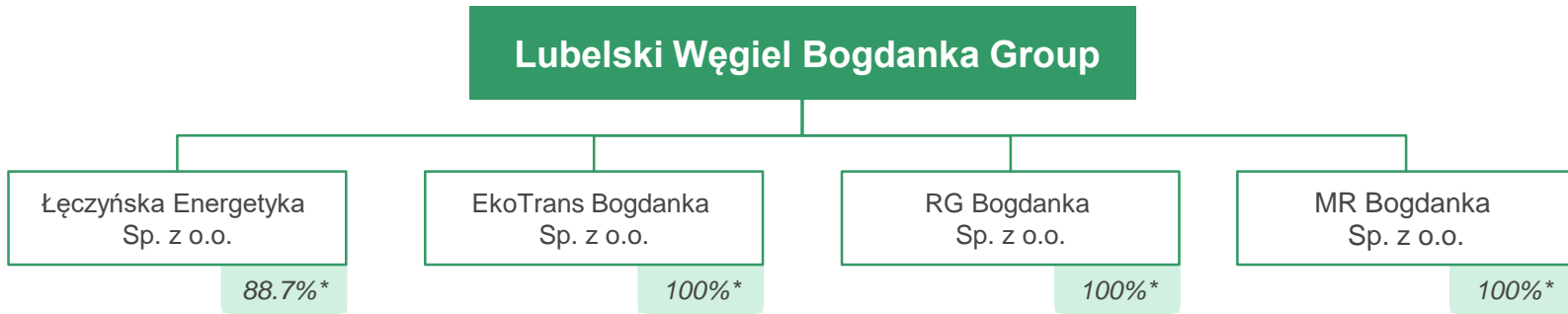
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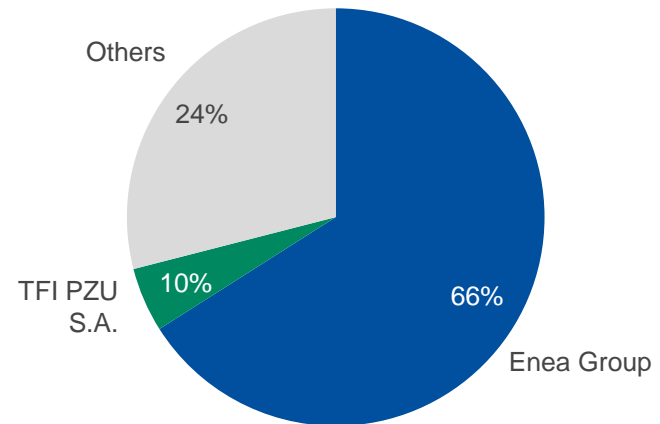
LW Bogdanka Group - key facts



LW Bogdanka S.A.:

- A member of the Enea Group since October 2015
- One of the largest and most advanced producers of thermal coal in Poland (and the only producer in the Lublin Coal Basin)
- 3 excavating fields: Bogdanka, Nadrybie and Stefanów
- Leader in effectiveness in Poland
- In 2016, it produced about 9 million tonnes of commercial coal, i.e. 16% of total thermal coal output in Poland
- In its mining operations, it uses the most advanced technologies and top quality machines which ensure it an underground efficiency rate more than twice as high as the average for the sector year to year

Shareholders of LW Bogdanka S.A.



* - % of votes at the General Shareholders Meeting in subsidiaries



Strategy of the Enea Group and the Mining Area is consistent with plans adopted both at national and sector level

Strategy of the Enea Group



Energy Security
Policy for Poland



Responsible
Development Plan



Climate Policy



Expectations of
clients,
technological
progress



Strategy of LW Bogdanka S.A.

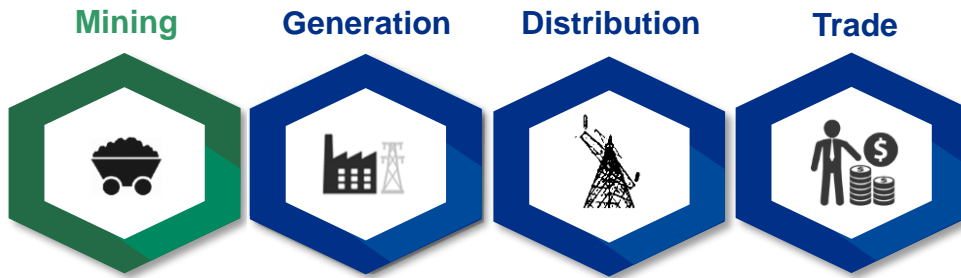
Draft Polish Hard Coal Mining Programme

PRIMARY GOALS:

- ensure conditions supporting the creation of a **profitable, efficient and modern hard coal mining sector**
- hard coal mining sector based on **cooperation, knowledge and innovation**
- effective **use of resources and social and economic potential**
- ensure **high energy independence for Poland** and **promote competitiveness of national economy**

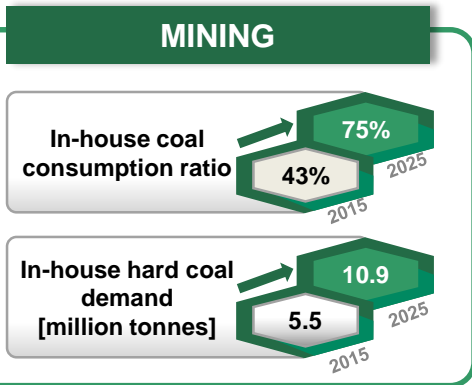
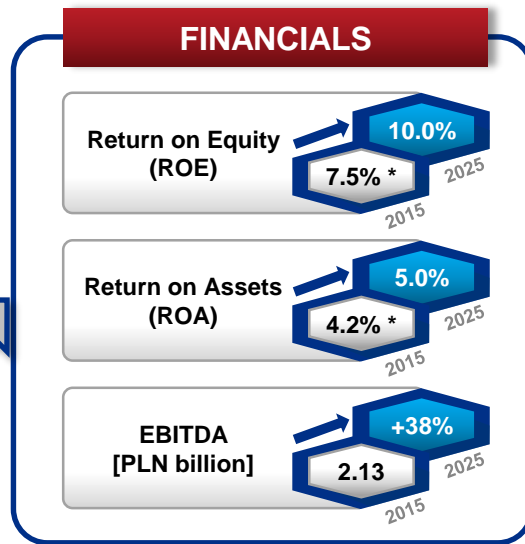


As the Mining Area is developed, LW Bogdanka is a vital link of the Development Strategy of the Enea Group until 2030



COMMENTS

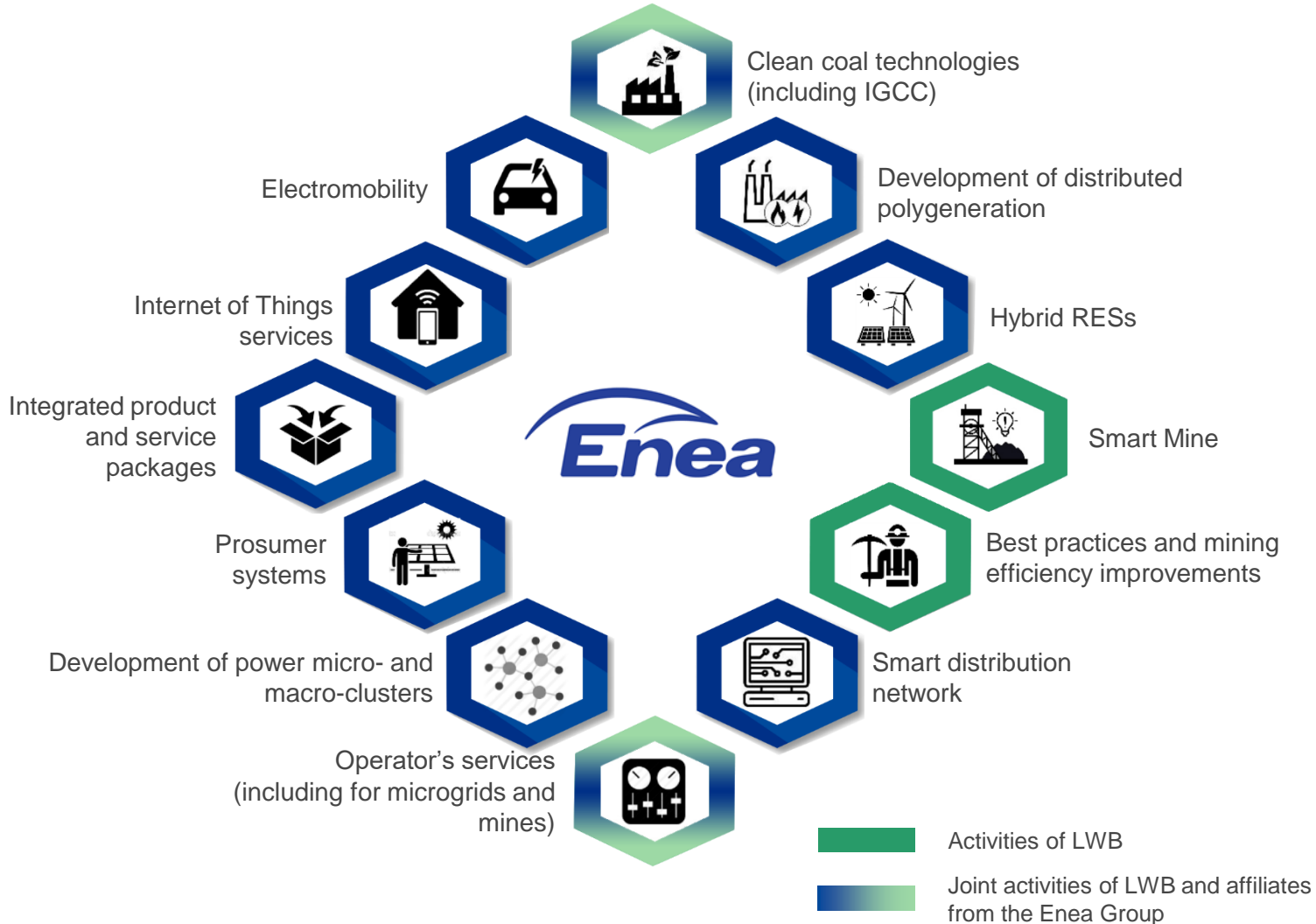
- **LWB** has a vital role to play to enable the **Enea Group** to achieve the target **efficiency ratios** and **EBITDA** by **2025**
- Ensure **appropriate volume** of thermal coal for power and CHP plants from the **Power Generation Area of the Enea Group**
- **10 strategic initiatives** for the **Mining** area to improve existing business or to increase the business potential of the entire Enea Group
- **CAPEX** (nominally) for the Mining area over 2016-2025 at the level of about **PLN 3,712 million**



* adjusted by revaluation



As a member of the Enea Group, LW Bogdanka contributes to energy security of Poland





Vision and mission of LW Bogdanka S.A.

VISION

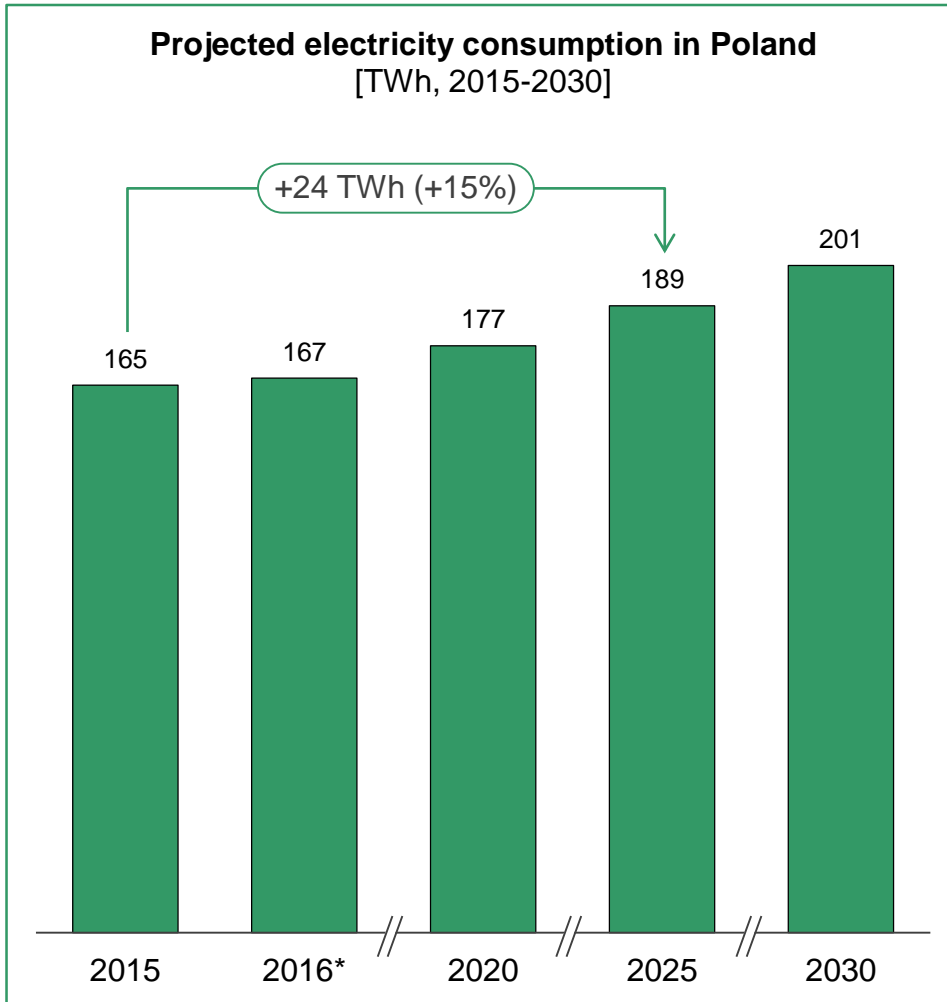
Bogdanka is a strong link in the value chain of the Enea Group and the efficiency leader in the mining sector with the highest work safety standards.

MISSION

By contributing to energy security of Poland, Bogdanka proves that it is a reliable supplier of coal for commercial power plants able to maintain its competitive advantage and to continuously increase the value of the Company, while improving its work safety and environment protection standards and implementing innovative solutions.



Projected growth of demand for electricity will be correlated with Poland's growth rate



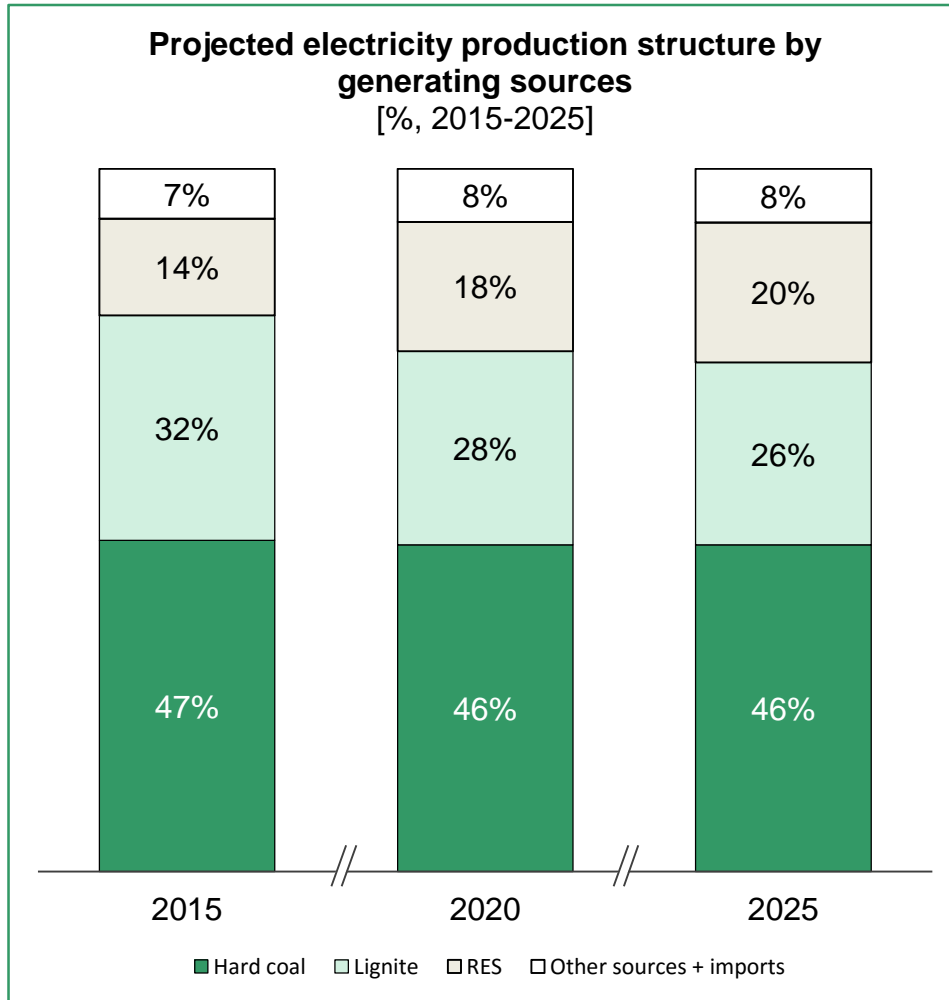
* Estimates

COMMENTS

- Projected demand for electricity will **grow slower than GDP, which is expected to increase by about 3% y/y**
- Over 2007-2015, the **electricity consumption rate was 50% of the GDP growth rate (per capita)**
- **In Poland**, households use (per capita) **less than a half** of average electricity consumption in the **European Union** (0.7 MWh/person vs 1.5 MWh/person, respectively in 2014)
- **Reindustrialization** is one of the pillars of Poland's economic growth identified in the **Responsible Development Plan** and its impact on electricity demand will be partially **offset by declining electricity intensity** of the economy
- **E-mobility programme** – 1 million electric cars over 10 years, demand for electricity will be higher by 2.5% (2026) versus baseline scenario, i.e. about 5 TWh



Share of hard coal in electricity generation structure will not change significantly by 2025

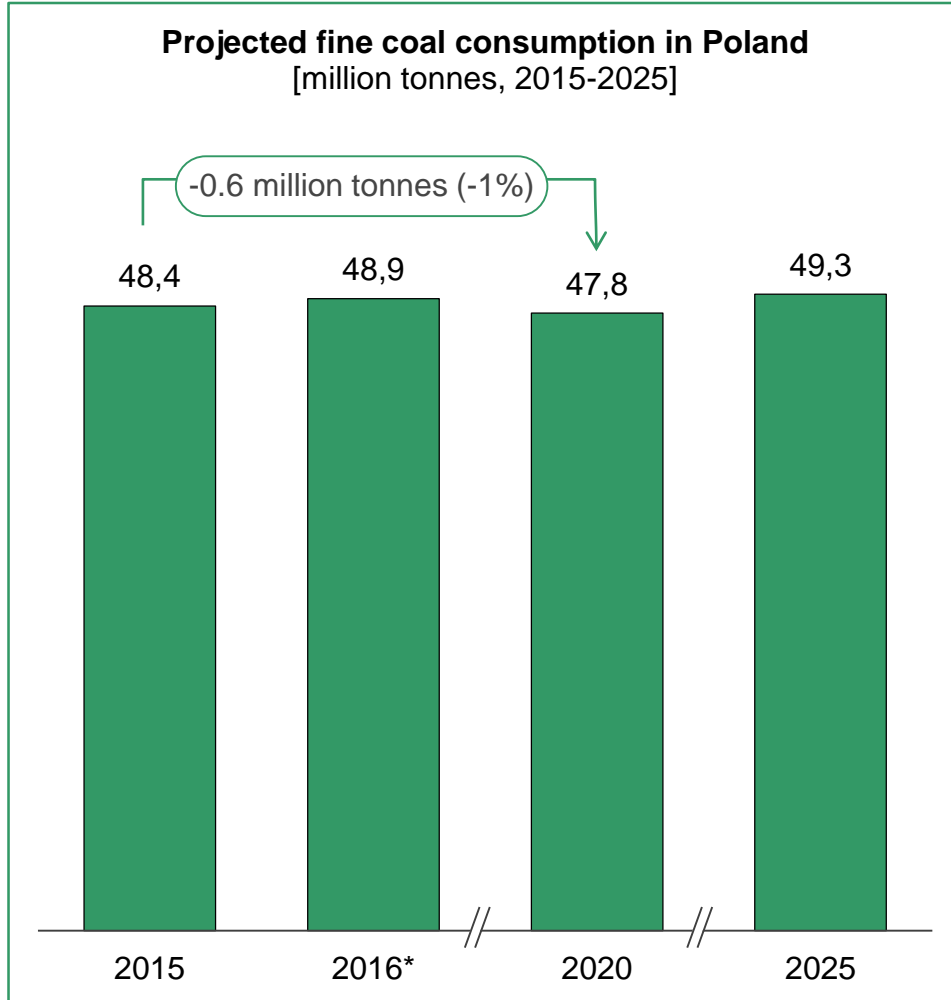


COMMENTS

- Taking into account **investments in new** generation capacity with simultaneous **upgrades of old** coal-fired power units and taking into consideration **available resources, we do not expect any significant change** in coal share
- We take into account declining reserves of lignite
- In 2020, about **18%** of electricity will be generated by RESs – and their share in end-user electricity consumption will be about **15%** - and even about **20%** by **2030**
- Other sources include the completion of combined-cycle power units (Włocławek, Stalowa Wola, Gorzów, Płock)
- In **2030**, hard coal share in power generation may be between **40%** and **55%**, depending on investments in **lignite mines and nuclear power plants**



Demand for fine coal will be stable over the next decade



COMMENTS

- Higher demand for energy means an **increase in production** on the basis of hard coal-fired sources
- **High-performance units in Koziencice, Opole, Jaworzno and Ostrołęka** will be commissioned
- Significant **increase** in the average **efficiency** of conventional sources will lead to a decline in demand for fine coal until **2020**
- **200+ programme** will be implemented to extend the life of 200 MW units - their upgrades will be connected with the **reduced** demand for fine coal

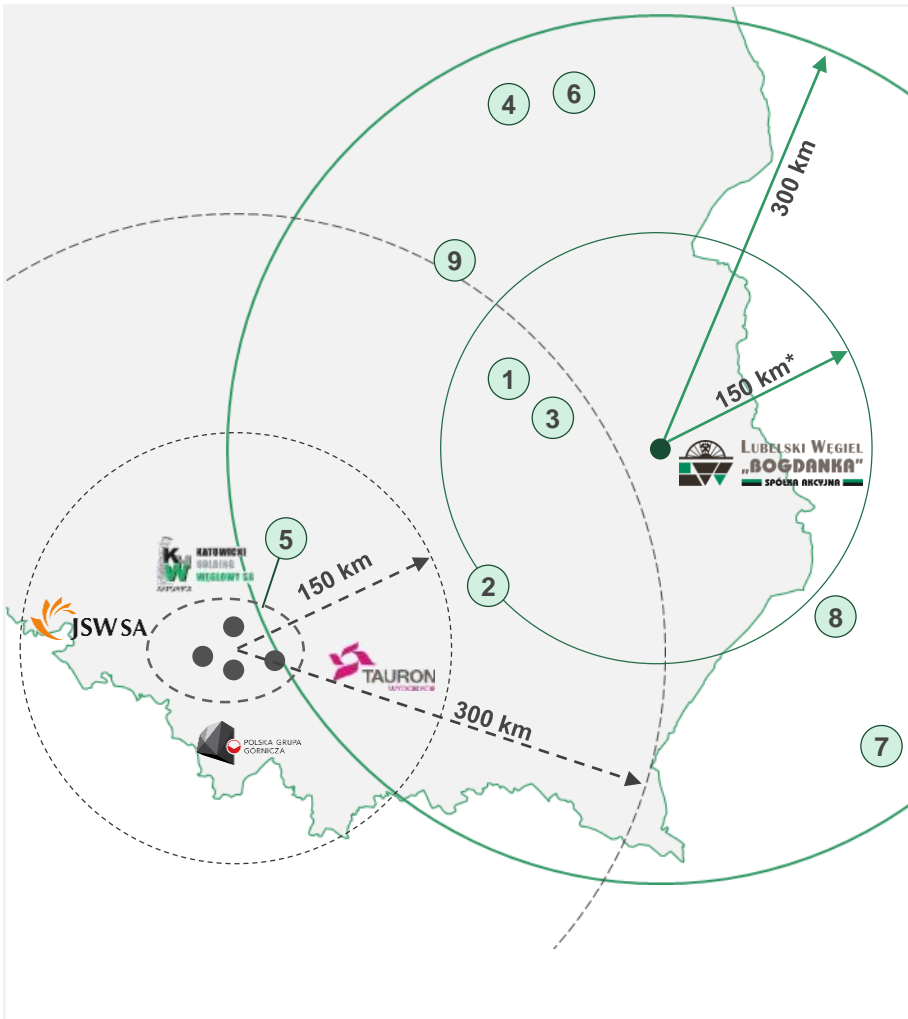
Demand for thermal coal

Year	2015	2016	2020	2025
million tonnes	57.9	58.2	56.3	55.4

* Estimates



LW Bogdanka is favourably situated versus large buyers of fine coals operating in east Poland



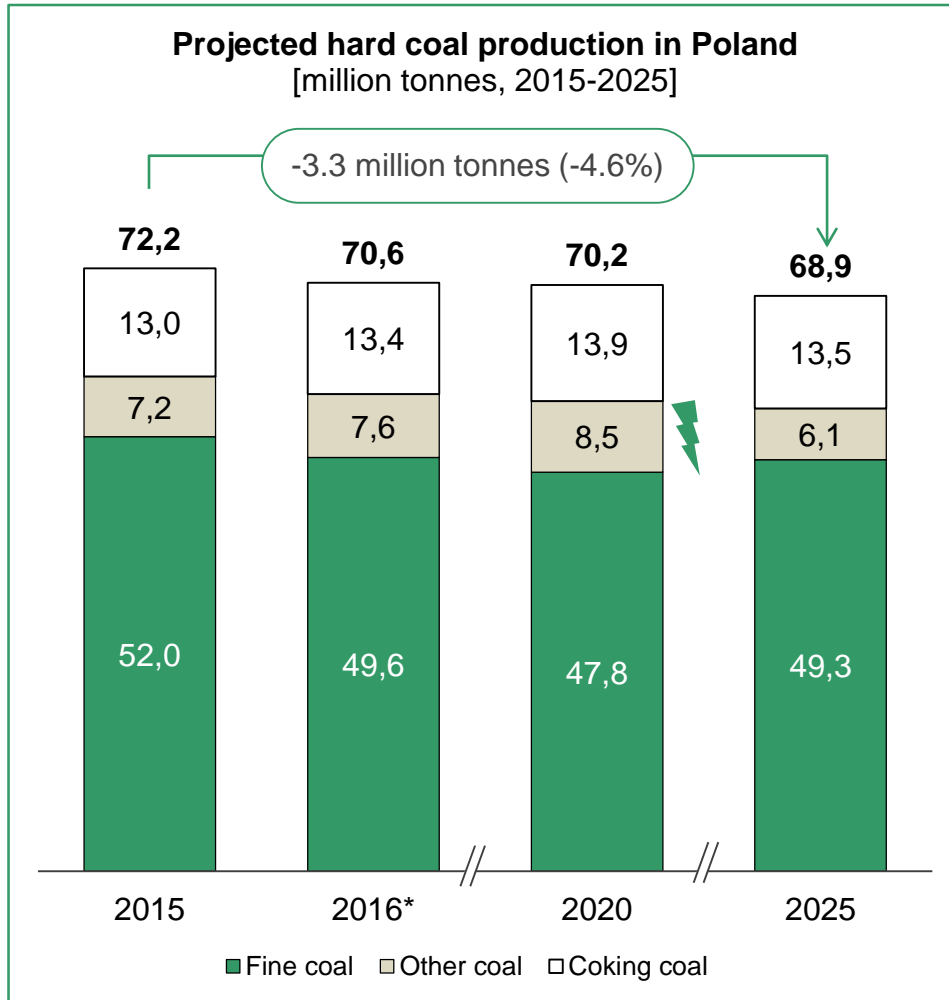
COMMENTS

- Within a **150-kilometer** radius from LWB, the following plants use thermal fine coal:
 - ① **Kozienice Power Plant**
 - ② **Połaniec Power Plant**
 - ③ ZA Puławy
- Within a **300-kilometer** radius from LWB, the following plants use thermal fine coal:
 - ④ Ostrołęka Power Plant
 - ⑤ EDF Rybnik, Siersza, Łagisza, Łaziska, Jaworzno
 - ⑥ CHP Białystok
 - ⑦ Bursztyńska Power Plant (Ukraine)
 - ⑧ Dobrotwirska Power Plant (Ukraine)
 - ⑨ CHPs in Warsaw
- Such location results in lower transport costs for supplies to the majority of coal consumers (except those from Silesia) versus transport from other sources (Silesia, seaport in Gdańsk)

* Demand for fine coal up to 150 km – up to 11 million tonnes



Coal companies maximize the production of high-margin products – lower production of fine coal



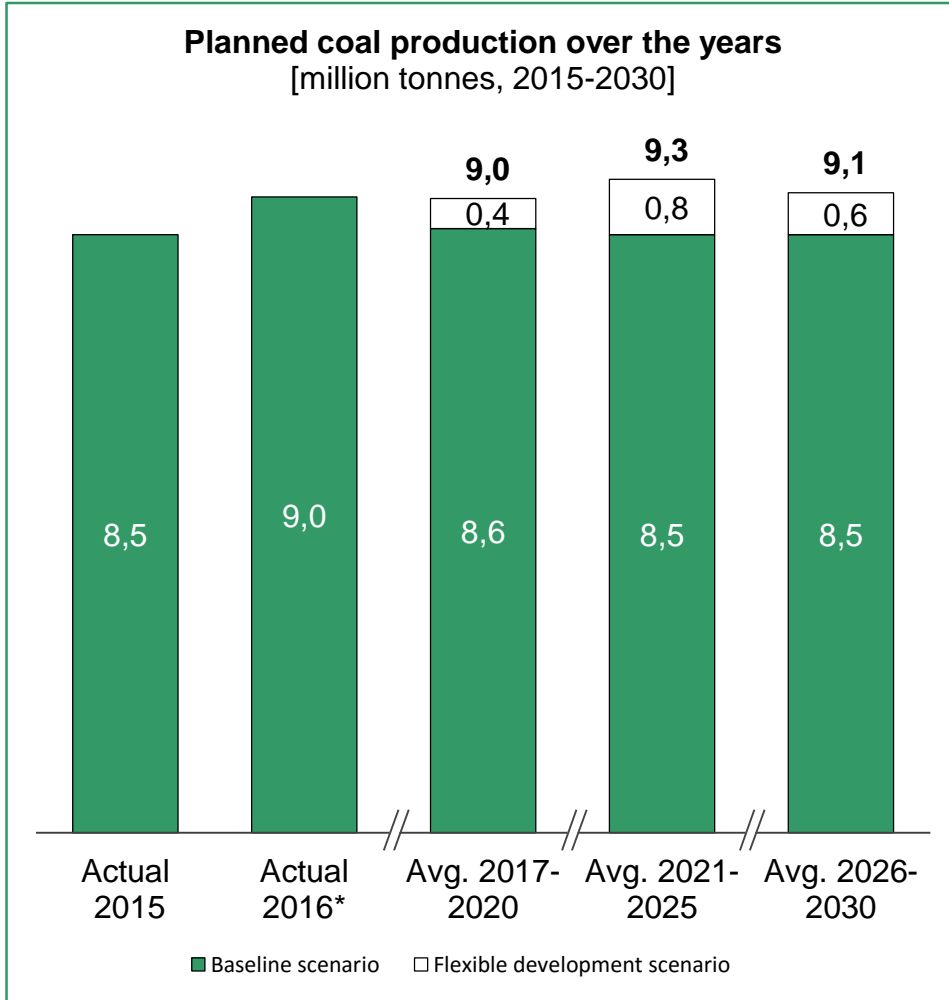
COMMENTS

- It is estimated that over 2015-2025 hard coal production will decline by about **3.3 million tonnes (-4.6%)**
- Coal companies will be trying to maximize higher-margin coal production (coking coal, lump coal) at the expense of fine coal
- **Jastrzębska Spółka Węglowa and PGG** will be maximizing the share of coking coal in their sales (**Knurów-Szczygłowice, Budryk, Rydułtowy**)
- **PGG** and **KHW** will be maximizing **lump coal** production
- **After 2020**, production of **lump and medium-rank coal** will be declining as a result of **lower demand**

* Estimates



In the course of our activities to formulate the strategy, we prepared two development scenarios: baseline scenario and flexible development scenario



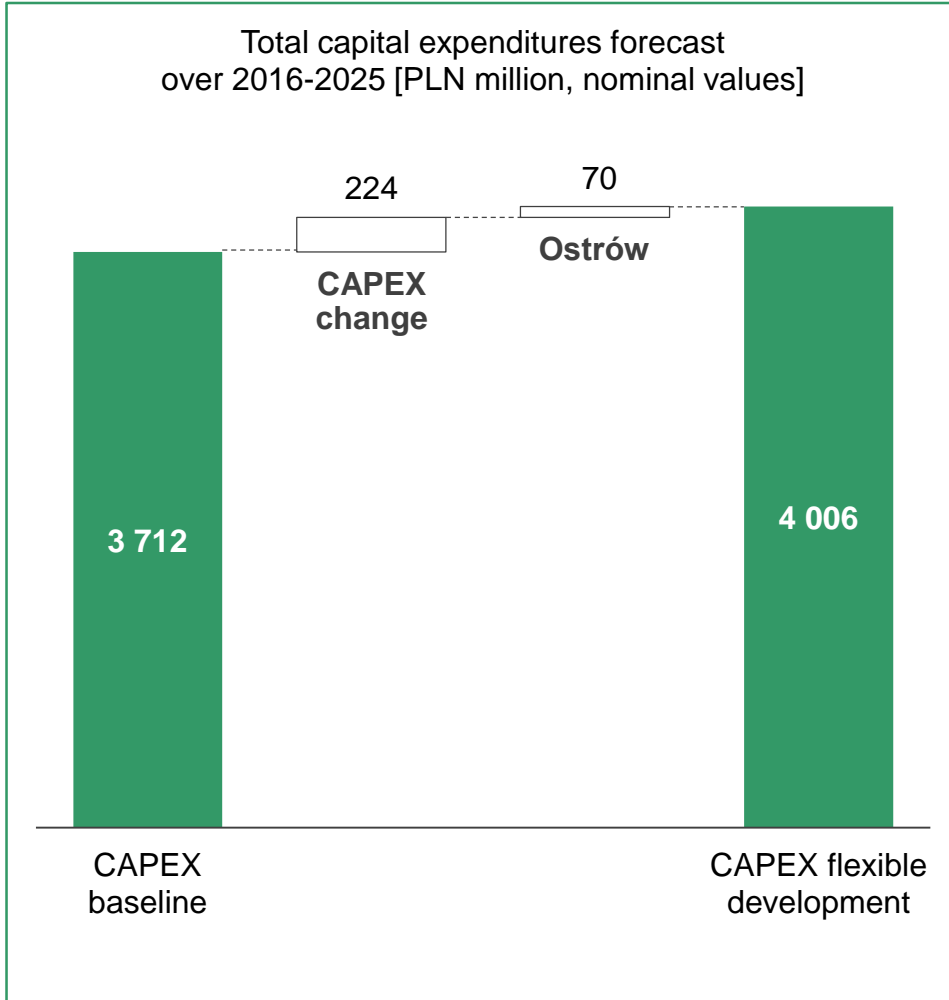
COMMENTS

- Planned production in 2017 will be comparable with 2016
- Baseline scenario with average annual production **at a level of about 8.5 million tonnes over 2017-2025**
- **Flexible development** scenario with **average annual production** at a level of about **9.2 million tonnes** over 2017-2025
- Average annual **projected production increase** connected with implementation of the development scenario is about **0.7 million tonnes**
- **Market analysis** suggests possible **shortages in fine coal segment**, therefore **LWB intends to implement the flexible development scenario as part of its strategy**

* Preliminary data



CAPEX forecast for 2016-2025 amounts to PLN 3.7 billion for the baseline scenario and about PLN 4 billion for the flexible development scenario

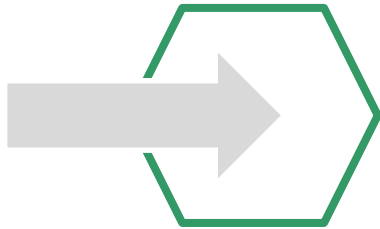


COMMENTS

- CAPEX in the baseline scenario is in line with the strategy of the Enea Group – PLN 3.7 billion until 2025
- Higher CAPEX in the flexible development scenario is mainly connected with **planned expenditures for mining machinery and equipment**
- **CAPEX for initial activities related to the Ostrów project**, which is a must if LWB wants to maintain the assumed production level after 2030, is also included
- CAPEX presented in both scenarios includes investment projects of Łęczyńska Energetyka, but excludes financial costs
- Presented CAPEX also excludes a potential implementation of strategic initiatives, including those connected with the construction of the IGCC system

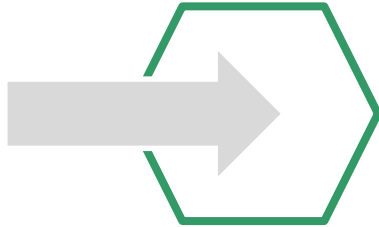


Focus on areas of key importance to the Company's strategy



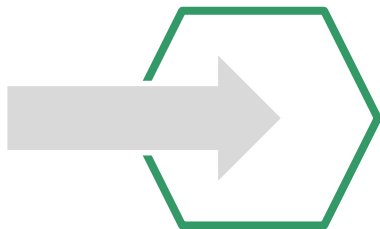
Mining and Power Generation Area

Kozienice-Bogdanka-Połaniec



Ostrów deposit

development of exploitable resources

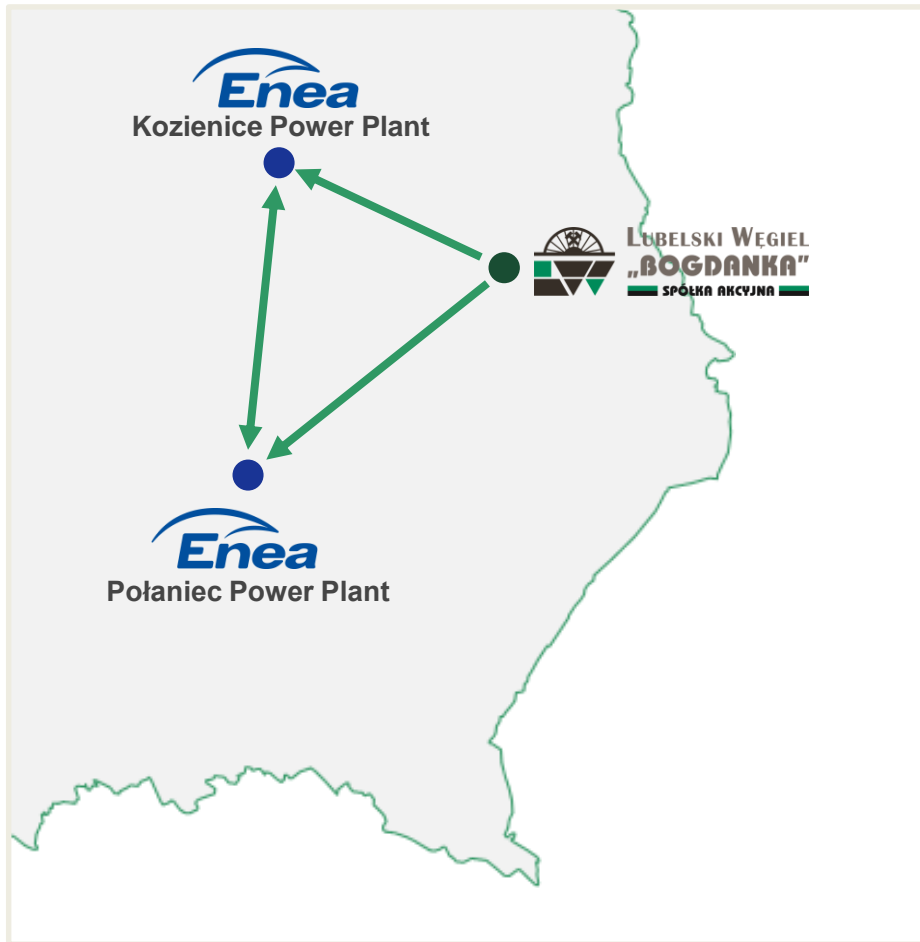


Operationalization of strategic initiatives

feasibility study for high-performance and low-emission supercritical power unit / IGCC in the Enea Group and the other initiatives

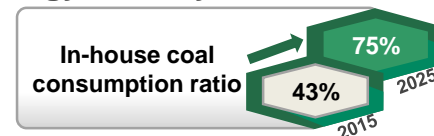


Takeover of Engie's assets by Enea will spur synergies in the Mining and Power Generation area



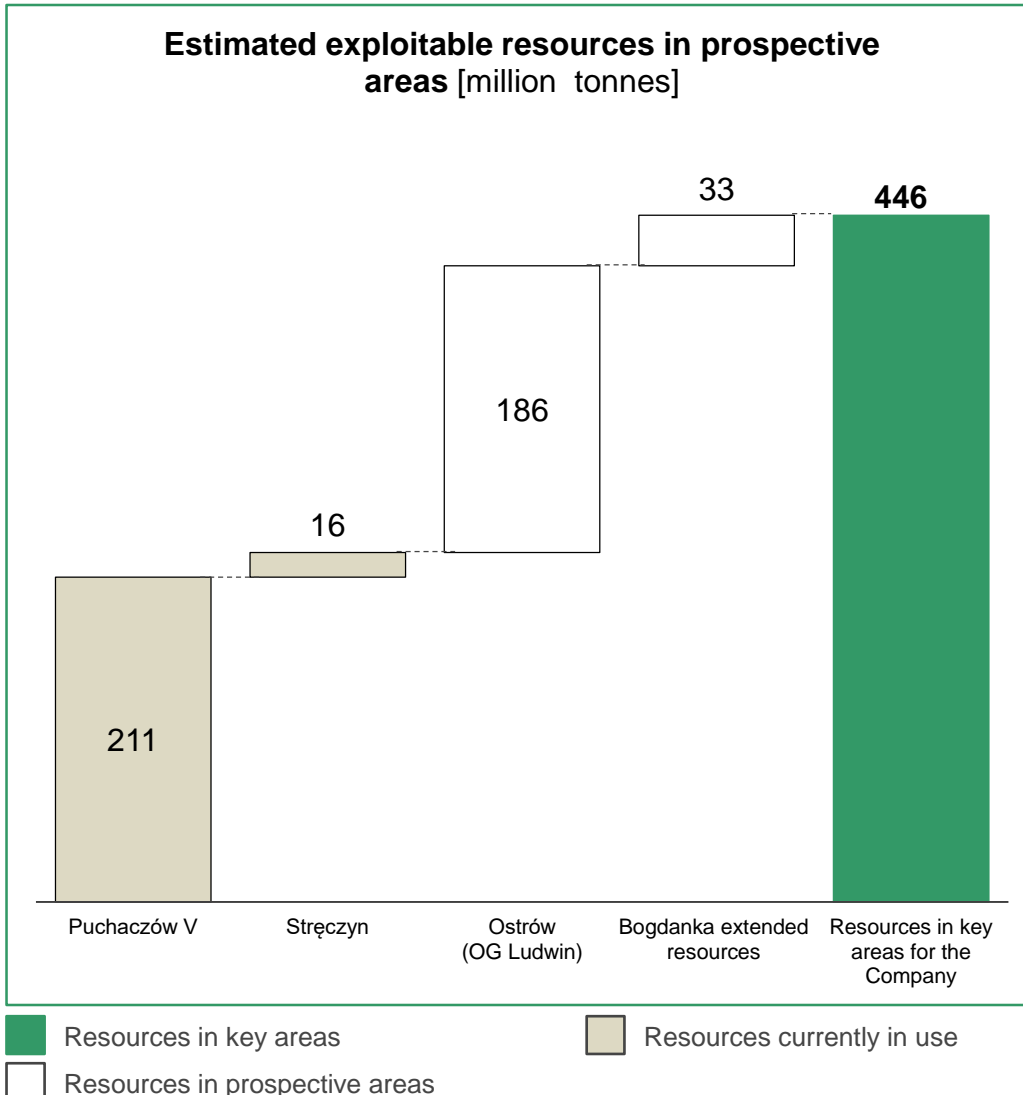
COMMENTS

- Investment project to acquire **Połaniec Power Plant** which is currently being pursued by the Enea Group means that **two main clients of LWB** will be its affiliates in the **Enea Group**
- As a result, the **Kozienice-Bogdanka-Połaniec mining and power generation area** will emerge in **south-east Poland**
- This will bring about various **benefits** to both LWB and the Enea Group and a further efficiency improvement in the generation of energy from **coal supplied by LWB**
- This area will not only improve the position of LWB or the Enea Group, but will also significantly strengthen the **energy security of Poland**





The Company will be increasing its exploitable resource base to extent its expected life in the long run – even for over 50 years



COMMENTS

- In the **time horizon of the Strategy until 2030**, the **key areas** for the Company include **Puchaczów V, Stręczyn (K-3)** and **Ludwin (Ostrów deposit)**
- The Company is planning to obtain a **mining licence** for the **Ludwin** area in **2017**. This will double exploitable resources of the Company
- The Company will continue to analyse the **K-6 and K-7** deposits and the **Orzechów** area as prospective locations of future mining operations
- Assuming annual coal production at the level of about **9 million tonnes**, the resources of the areas considered to be of key importance to the 2030 Strategy alone will ensure about **50 years of continuous exploitation**



Until 2030, a key direction for the Company will be the development of infrastructure in the Ludwin Mining Area (Ostrów deposit)

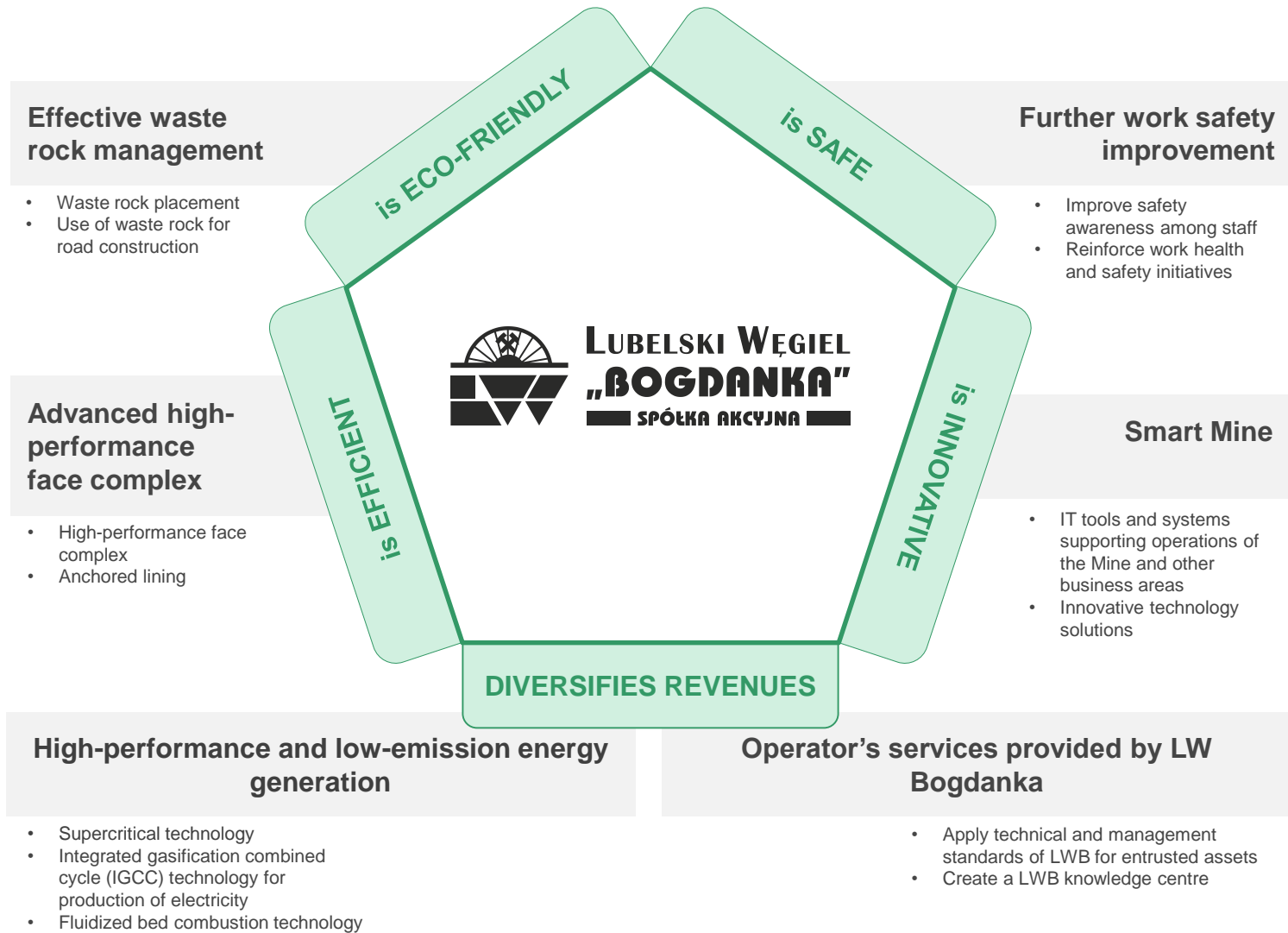


COMMENTS

- The Company estimates that **exploitable resources** in the Ludwin Mining Area (Ostrów deposit) are about **186 million tonnes**
- This project is to ensure that the **shaft complex in the Bogdanka field** can continue extracting coal after 2030
- Output will be transported underground to protect valuable natural areas of the Łęczna-Włodawa Lake District
- **Preliminary estimates** show required **capital expenditures** (in real terms) **in the amount of PLN 1.2 - 1.3 billion**

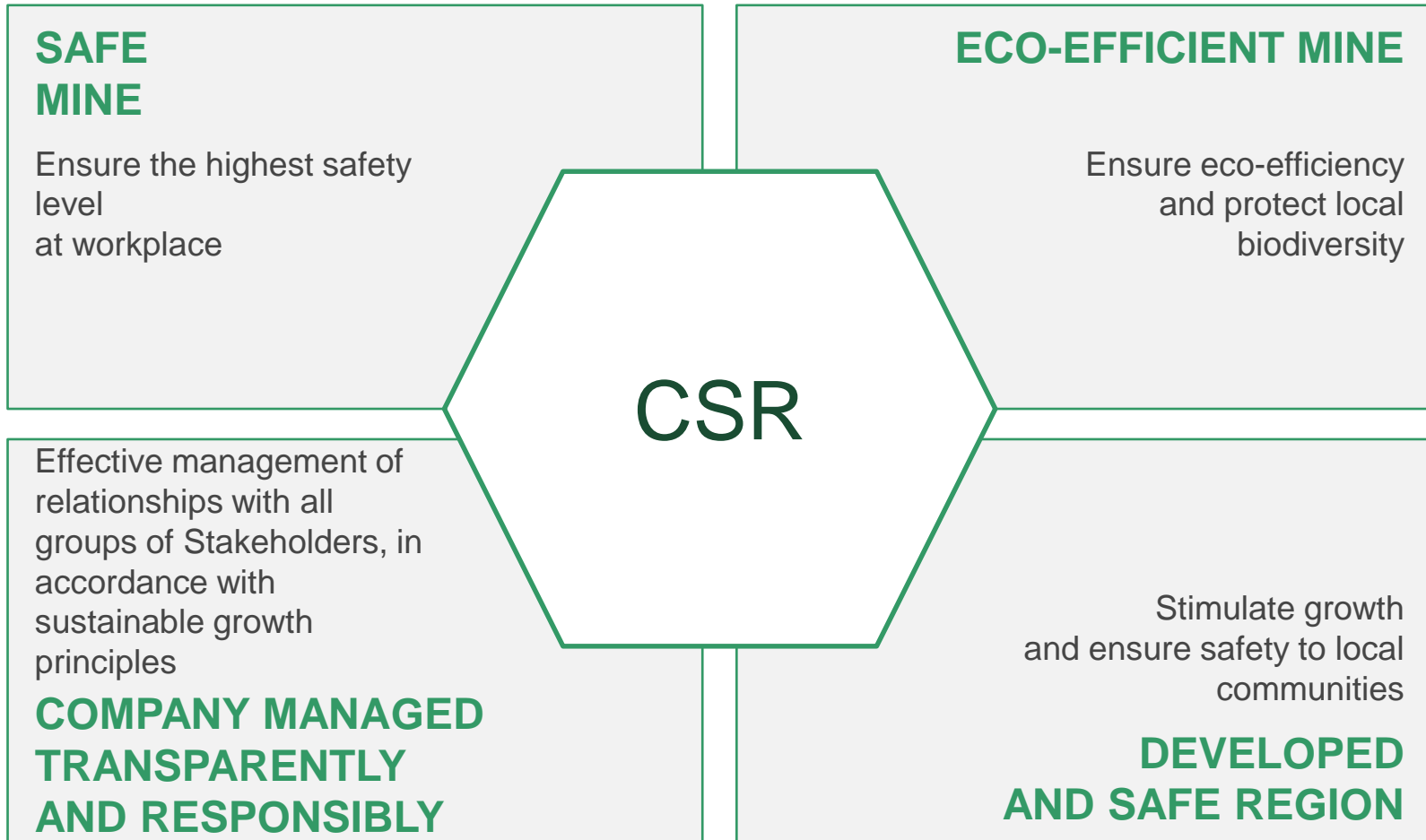


The Company will be improving its market situation by implementing various strategic initiatives



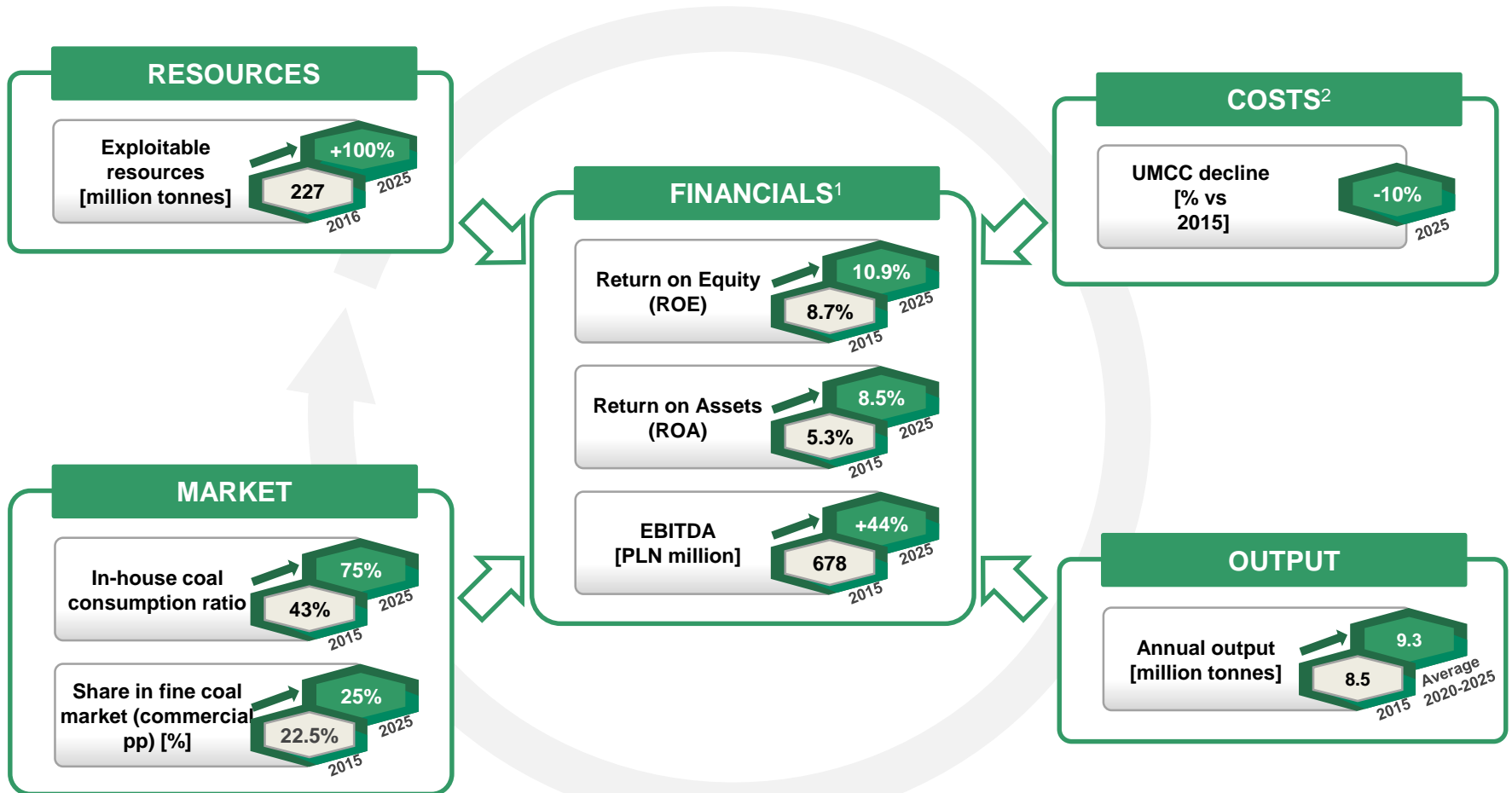


The mine will be implementing its Corporate Social Responsibility (CSR) strategy





Key indicators for LW Bogdanka until 2025 – flexible development scenario



¹ – adjusted by revaluation

² – in real terms



LW Bogdanka S.A. wants to be a dividend-paying company in medium and long run

In the future, the Management Board of LW Bogdanka S.A. intends to ask the General Shareholders Meeting for approval of dividends up to 50% of the net profits shown in the Company's separate financial statements, prepared in accordance with the International Financial Reporting Standards

Each time, dividends recommended by the Management Board will depend on:

- current market situation
- generated operating cash flows
- planned capital expenditures and investments
- projected debt of the Company

In the light of rapid changes in both Polish and global coal markets, the financial and liquidity security for the Company is a priority for the Management Board.

In the next 10 years, a strategic goal of the Company is to start expanding the Mine by the "Ludwin" Mining Area ("Ostrów" deposit), which will require significant capital expenditures

Additionally, the Company is working on a number of strategic initiatives, a few of which, if implemented, will require large capital expenditures and could affect the dividend policy of the Company



The Enea Group and LW Bogdanka S.A. are jointly building an Innovative Material and Energy Group to reinforce energy security of Poland