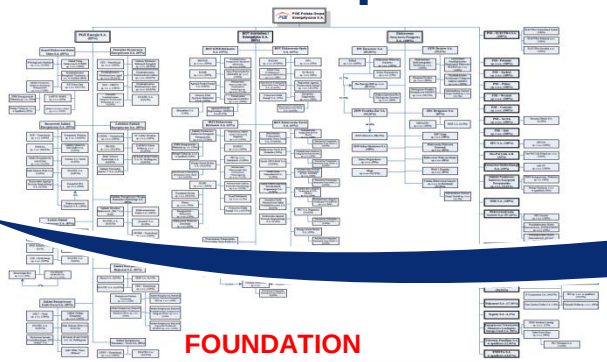
Polska Grupa Energetyczna

Creating value and safe future

PGE Group Strategy 2012-2035

February 2012

From disintegrated conglomerate to modern and competitive corporation



FOUNDATION

- PGE Group in current shape was created in 2007, consisting of:
  - 2 subholding companies
  - 2 lignite mines
  - 14 power plants and CHPs
  - 8 distribution companies
  - 8 retail sales companies
  - dozen renewable generation companies
  - wholesale trading company
  - 100+ non-core businesses
- Significant share of minorities on different levels of the corporate stucture

Market advantages not possible to be utilized due to hardly-manageble and not-transparent structure

TRANSFORMATION

- Legal and formal consolidation process conducted in Aug 2010
  - 40 companies merged into 4
  - Minorities from operating level bought out for equity
- Further minorities bought out for an attractive price
- Integrated value chain management adopted
- 55 non-core businesses sold, incl. PLN 3.3bn disposal of Polkomtel
- Investment program launched
  - Opole (hard-coal)
  - Gas co-generation
  - Nuclear generation

Corporate structure ready for competition and growth

VALUE AND SAFE FUTURE

LEADER IN A DYNAMIC GROWTH

Modern and diversified generation portfolio

Supplier of the first choice for retail customers

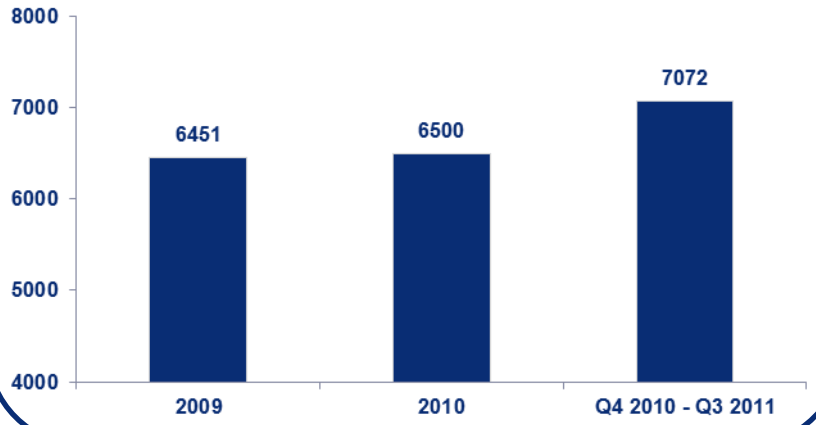
Leader in a domestic generation segment

Strong financial position

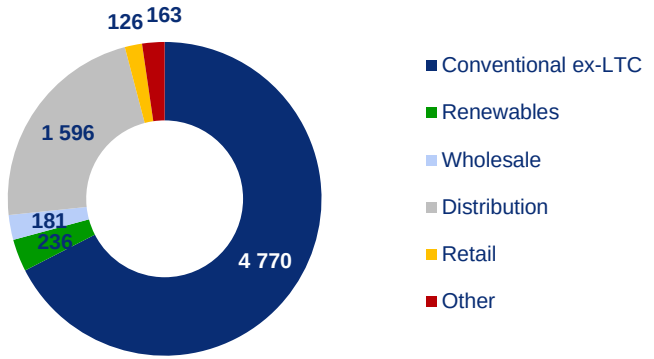
Focus on prospective domestic market and utilization of the selected foreign opportunities

PGE Group today (I)

EBITDA (ex-LTC) [PLNm]

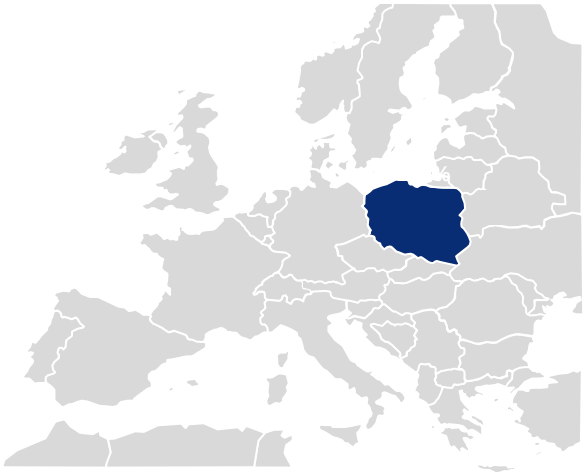


EBITDA ex-LTC split by segments

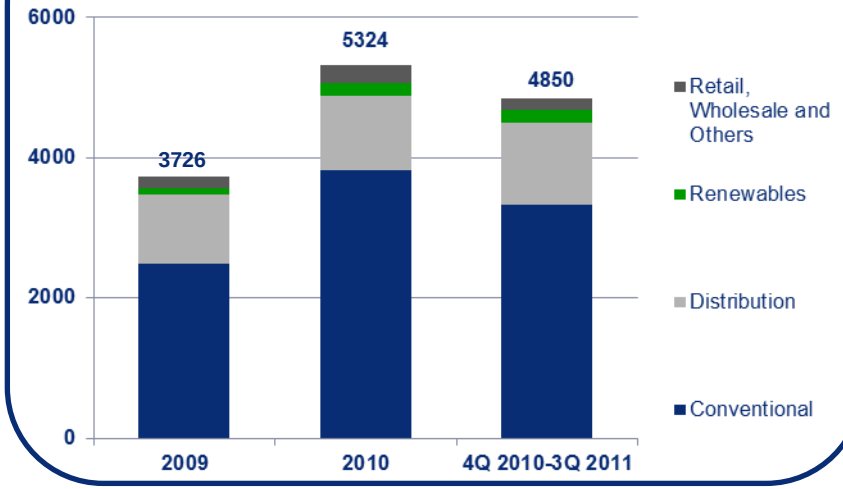


Data for 4Q 2010-3Q 2011

Focused on the domestic market



Capital expenditure [PLNm]

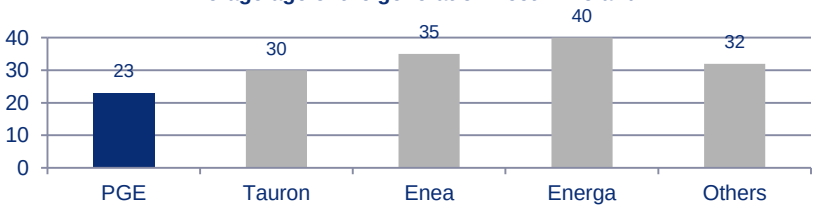


PGE Group today (II)

Age of the generation fleet

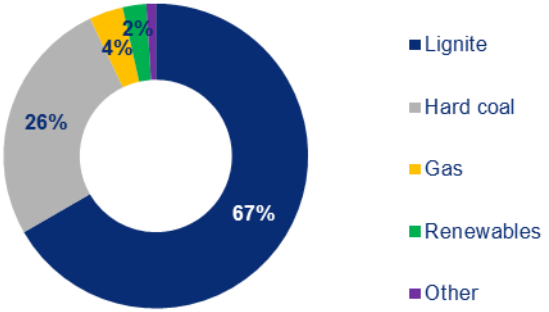
- Installed capacity amounts to 13.1 GW
- Annual generation of 55.2 TWh (Q42010-Q32011)
- 36% of total installed capacity in Poland, mostly in baseload and mid merit
- Own fuel resources (lignite) and relatively young assets secure sustainable competitive advantage on the domestic market

Average age of the generation fleet in Poland*



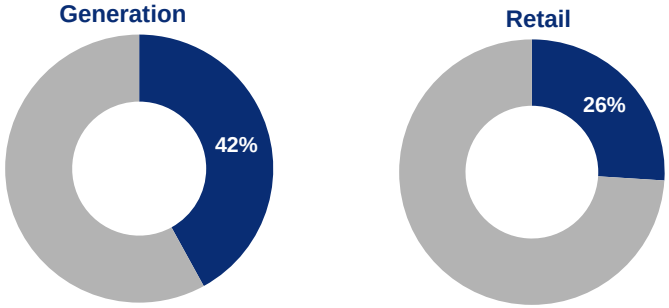
*Source: According to ARE data; age of turbine units in operation weighted by capacity

Fuel mix



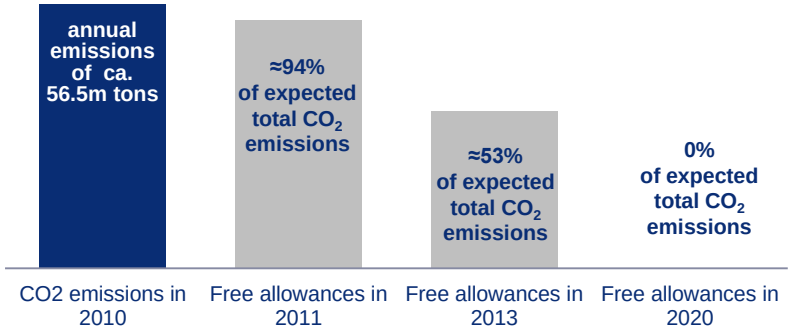
Data for 2010

Market shares



Data for 2010

CO_2 emissions



Mission, Vision, Strategic Objective

Mission

With energy we create value and build safe future

Vision

To be a leader of a dynamic growth

To have modern and fuel-diversified generation portfolio, be a customer friendly company, efficient and financialy sound, utilizing its potential and opportunities – domestic as well as international.

Strategic Objective

To create economic value for shareholders

PGE – Key objectives

Customer

- Increased competitiveness
- Increased quality of customer service
- Products development
- Increased number of customers

Investments

- Growth in existing business
- Growth on new markets
- Innovations

Operational Efficiency

- Margin maximization
- Improved utilization of existing assets
- Cost rationalization
- IT systems improvement
- Efficiency of vertically integrated company

Human Capital

- Ensuring necessary competencies
- Building corporate culture based on engagement and task-orientation

Value creation

Key assumptions

Fuel prices in baseline scenario

- Lignite and hardcoal: we expect fairly flat prices of these fuels in real terms.
- Gas: our assumptions are in line the International Energy Agency forecasts
- CO2 price: is capped by LRMC of CCS installation (between EUR 40-50 per tonne)

Electricity prices

- Supply and Demand balance sets marginal cost for the power system.
- Achieving premium over marginal cost depends on reserve margin in the power system.
- In baseline scenario we expect real electricity prices growth to reach up to 1.5% p.a. on average.

Capacity development in Poland

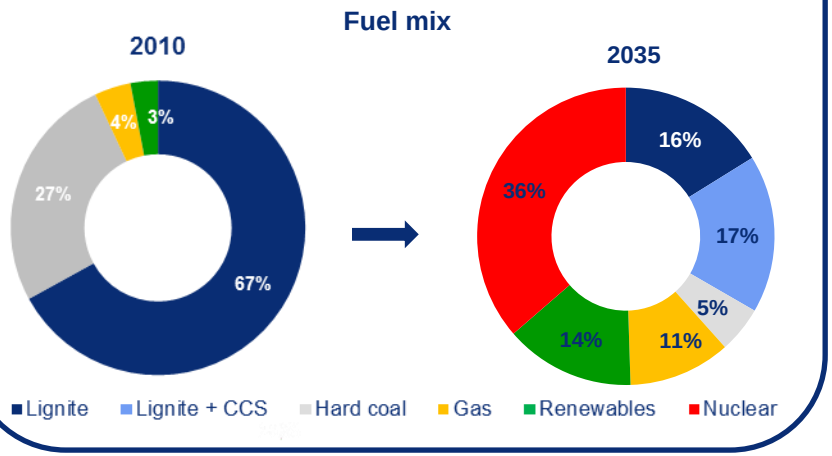
- Installed capacity in baseload thermal power plants roughly flat – new investments in long term are only covering gaps resulting from decommissionings.
- Increase of installed capacity achieved mostly in CHPs and renewable sources.

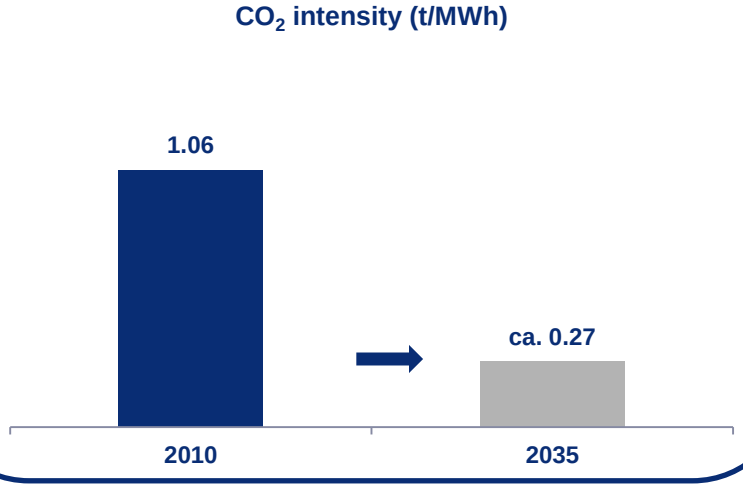
Demand for electricity

- We expect that demand for electricity in Poland will be growing on average between 1.0% (low growth) and 1.7% (high growth) p.a.

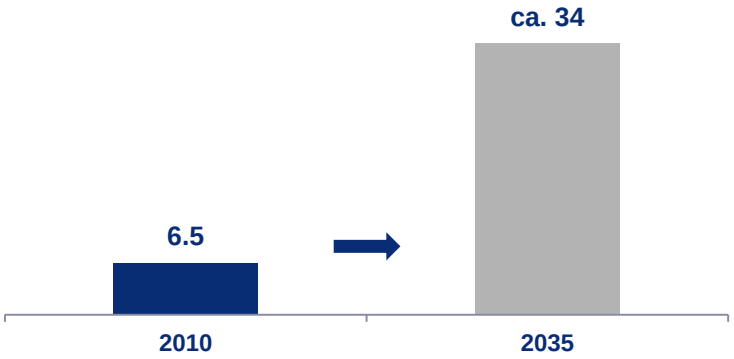
PGE – Leader in a dynamic growth (I)

Modern and diversified generation portfolio





Strong financial position



* Ex LTC

EBITDA margin (adjusted *)

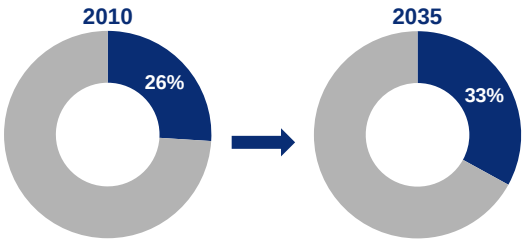
35% in 2010 → **over 50%** in 2035

* Adjusted for power exchange trading effect on revenues

PGE – Leader in a dynamic growth (II)

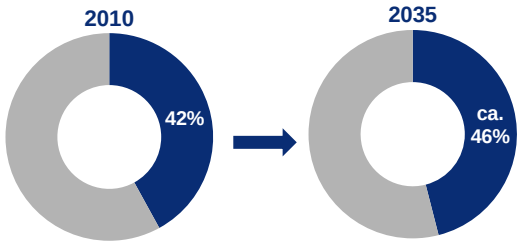
Higher retail market share

Domestic retail market share



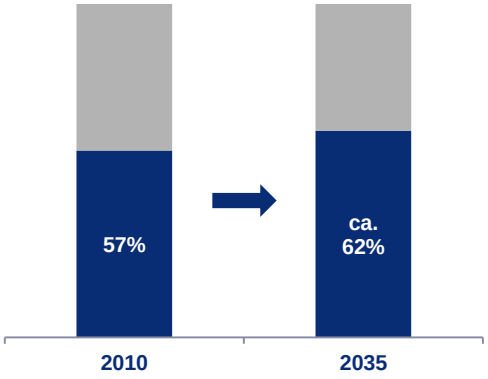
Leader in domestic generation

Domestic generation market share



Balancing retail and generation

Generation vs. retail position



Utilizing foreign markets potential

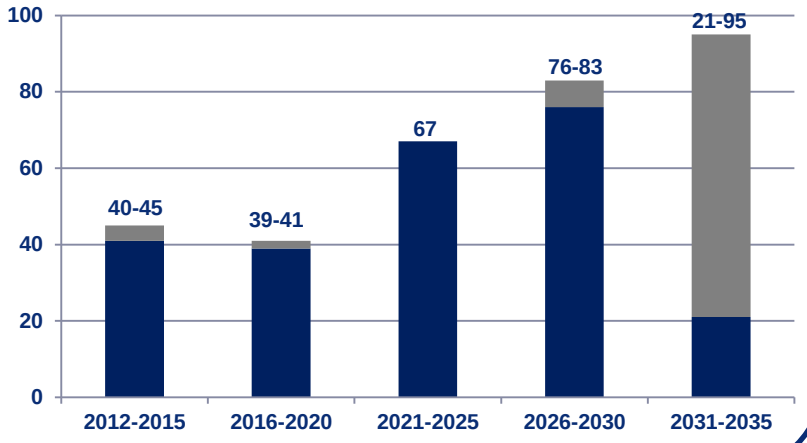
- Foreign acquisitions will be pursued only if identified opportunities guarantee sound return on invested capital as compared to the risk involved.

Investment programme

Identified investment projects

- 2x900MW hard-coal units in Opole power plant (2017/2018)
  - planned sale of ca. 50% of Opole power plant
- 460MW lignite unit in Turow (2018)
- Gas co-generation units: Gorzow, Bydgoszcz, Lublin, Pomorzany, Pulawy (1.3 – 1.7 GW)
- 1,000MW on-shore windfarms in Poland (2015)
- 2,000MW off-shore windfarms in Poland (1,000MW till 2020)
- Two nuclear power plants (6,000MW)
  - PGE share of up to ca. 4,500MW
- Construction of an additional lignite mine and power plant in Gubin area (1,800-2,700 MW, COD of 1st unit ca. 2030)

Capex expected [PLNbn]



Other projects

MERGERS AND ACQUISITIONS and JVs

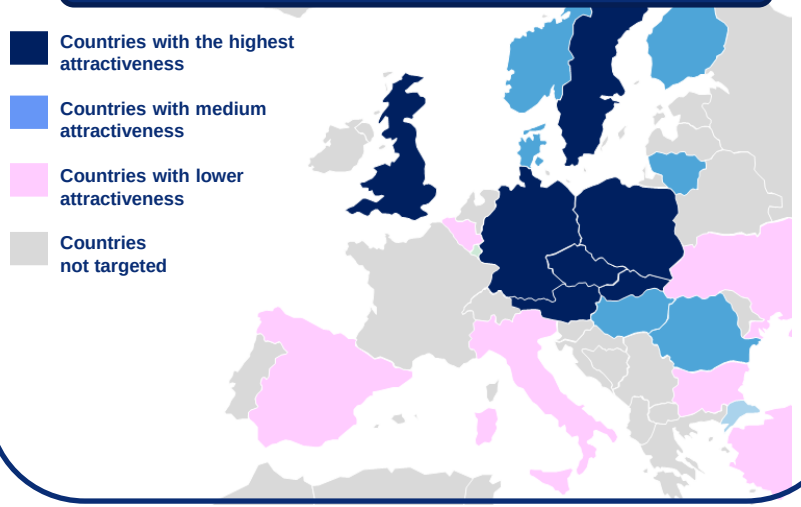
Preffered areas:

- Renewable Energy Sources (Wind, Waste-to-Energy)
- Co-generation
- Electricity, heat and gas distribution

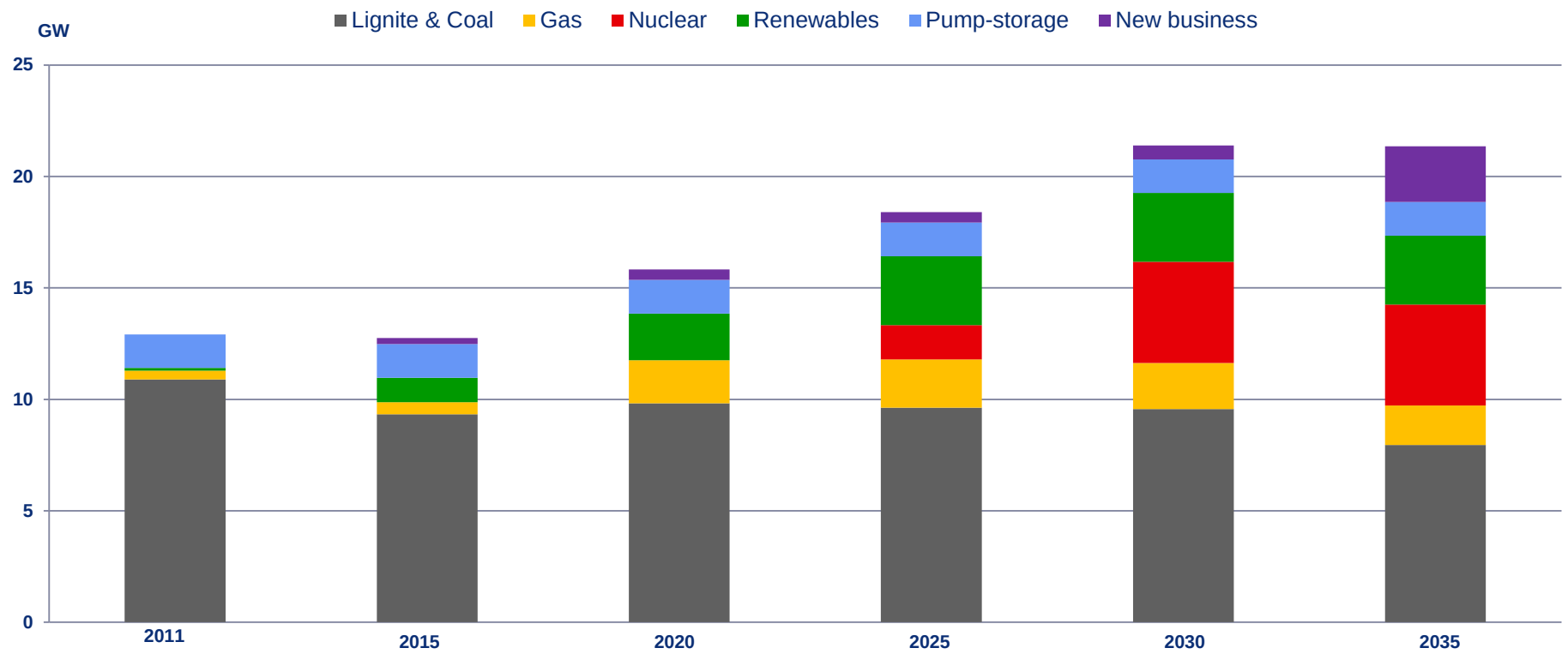
UNCONVENTIONAL GAS IN POLAND

- We plan sufficient funds to enter this market, however risk and reward profile is still uncertain

Attractiveness of markets



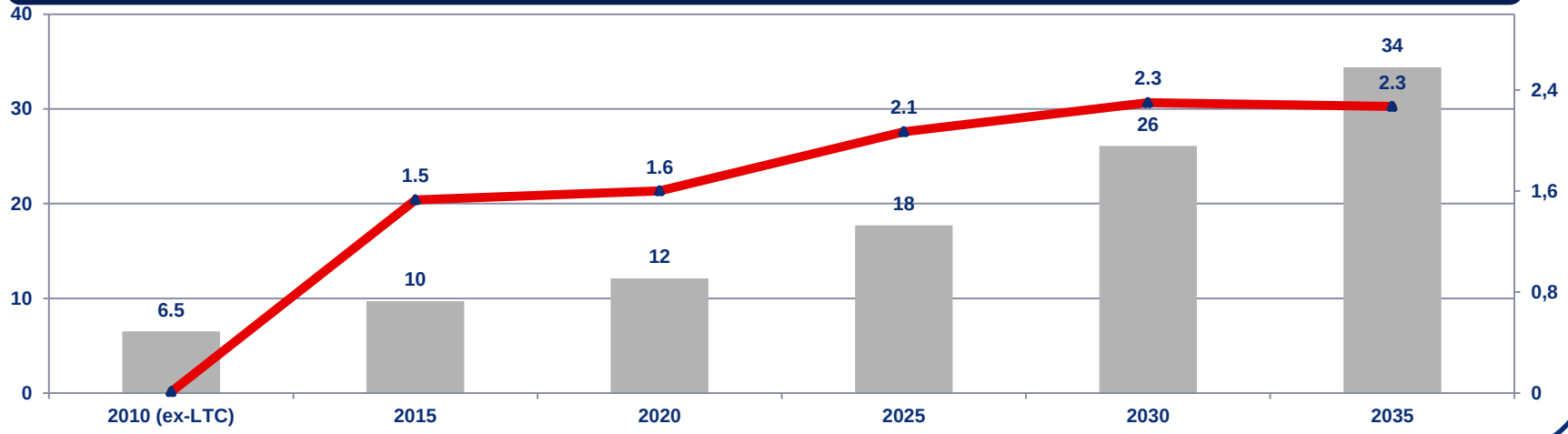
Development of the installed capacity



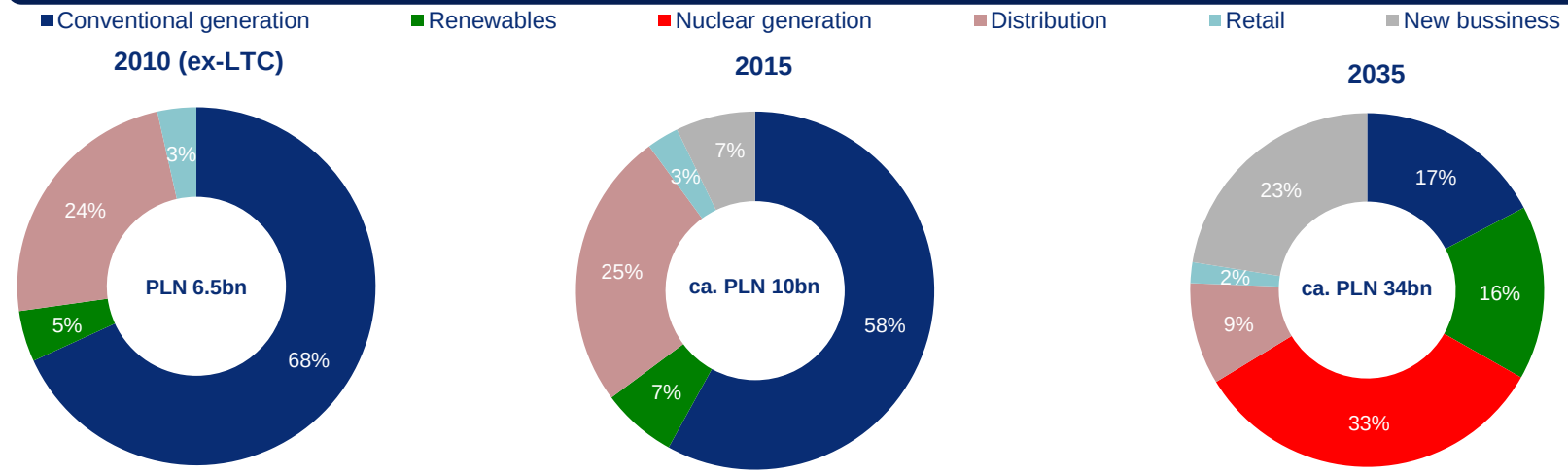
	2011	2015	2020	2025	2030	2035
Key decommissionings:		Dolna Odra (205 MW) Turów (412 MW)	Dolna Odra (454 MW) Bełchatów (370 MW)	Pomorzany (134 MW)	Dolna Odra (908 MW)	Lublin (231 MW) Opole (375 MW) Bełchatów (2,980 MW)
Key commissionings:		Onshore wind (1,000 MW)	Turów (460 MW) Bydgoszcz (240 MW) Gorzów (135 MW) Puławy (578 MW) Lublin (136 MW) Opole (900 MW) Onshore wind (300 MW) Offshore wind (1,000 MW)	Nuclear (1,530 MW) Pomorzany (240 MW) Offshore wind (1,000 MW)	Nuclear (3,000 MW) Lignite (900 MW)	Lignite (1,800 MW) Additional renewables/gas capacity in new businesses

EBITDA development under baseline scenario

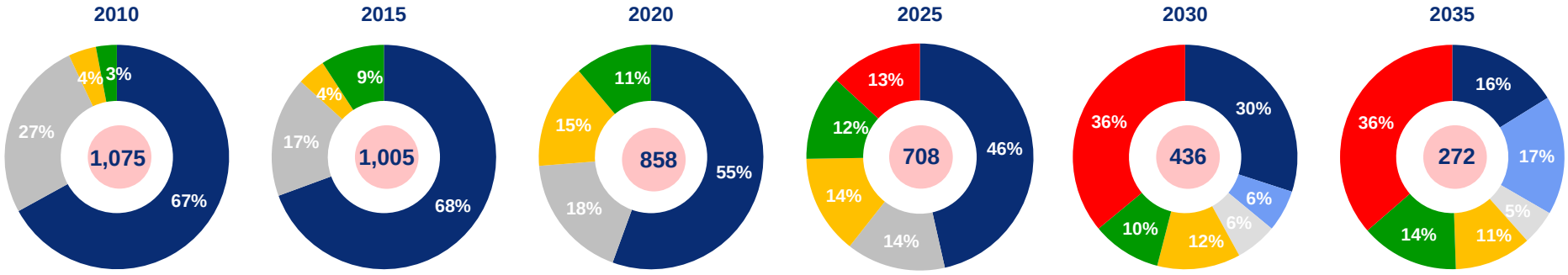
EBITDA [PLNbn – left] and Net Debt/EBITDA ratio [right]



EBITDA split by segments



Development of fuel mix/CO_2 intensity



- Almost fully fossil fuel generation
- Lignite as a dominant fuel
- Own fuel sources in 2/3 of fuel needs

- Increased share of renewables (1000MW onshore program almost finished)
- Hardcoal share decreases after disposal of 50% of Opole plant

- Gas (co-generation) visible in fuel mix
- Renewable share further increasing
- Share of hard coal sustained after Opole commissioning

- Introduction of nuclear power (first reactor – 2023)
- No significant changes in other fuels

- More nuclear reactors working
- Share of renewables sustained despite significant increase of overall capacity
- New lignite deposit utilized (probably with CCS)

- Fuel mix close to a perfect:
  - 38% coal (incl. 17% clean coal)
  - 36% nuclear
  - 25% renewables&gas

Note: Due to numbers rounding sum may not equal to 100%

Polska Grupa Energetyczna

Thank you

Investor Relations Contacts:
ir@gkpge.pl

Head of IR
Przemek Wasilewski
Tel: (+48 22) 340 19 46
Fax: (+48 22) 629 47 25
Mob: +48 723 189 235

IR Officer
Krzysztof Dragan
Tel: (+48 22) 340 15 13
Fax: (+48 22) 629 47 25
Mob: +48 601 33 42 90

IR Officer
Agata Milewska
Tel: (+48 22) 340 10 35
Fax: (+48 22) 629 47 25
Mob: +48 723 996 513

IR Officer
Jakub Frejlich
Tel: (+48 22) 340 10 32
Fax: (+48 22) 629 47 25
Mob: +48 695 883 902

Additional information

Fuel mix considerations - lignite

Currently

7,232.5 MW installed capacity:

- Belchatow Plant (5,298 MW)
- Turow Plant (1,898.2 MW)
- Boruta CHP (36.3 MW)

Lignite share in fuel mix: 67%

Self sufficient in lignite

– own open pit mines with resources till ca. 2040

Exclusive exploration licence for Zloczew and Gubin deposits

Future

NEW CAPACITIES:

- Turów 460 MW (2018) – highly profitable project due to effective marginal cost of electricity production equal to marginal mining cost
- New lignite mine and power plant in Gubin area – 1,800-2,700MW – if climate policy allows for economic validity of the project.
- Possible extension of a new plant wih CCS

DECOMMISSIONINGS:

- Turów: 206MW (2013), 206MW (2014)
- Belchatów: 370MW (2016)
- Belchatów: 2,980MW (2030-2035)

Pros and cons

+ cheapest fossil fuel – currently 2x cheaper than hardcoal and over 4x cheaper than gas (per calorific value)

+ stable cost of fuel – economic foreseeability

+ own resources mean vertical integration – security of fuel supply

+ huge know how – PGE is one of the largest European lignite mining company

- relatively high CO2 emmission rate (0.91 t/MWh in 2011 technology)
- low calorific value per tonne – efficient transport possible up to 50km, if new deposit developed, greenfield plant need to be built

Possible adjustments to baseline scenario

LOW CO2 PRICES SCENARIO:

- Slightly quicker construction of a new lignite complex
- Lower probability of CCS (or other „clean coal technology") profitability

HIGH CO2 PRICES SCENARIO

- Possible earlier decommissioning of existing capacities
- CCS (or other „clean coal technology") probably profitable sooner

OTHER

- Open option to prolong Belchatow complex life (or to create new plant) based on Zloczew deposit

Fuel mix considerations – hard coal

Currently

3,467 MW installed capacity:

- Opole (1,492 MW)
- Dolna Odra (1,567 MW)
- Pomorzany (134 MW)
- Gorzów (32 MW)
- Kielce (10.8 MW)
- Bydgoszcz I & II (231 MW)

Hard coal share in fuel mix: 26%

Future

NEW CAPACITIES:

- Opole 450 MW (2017)
- Opole 450 MW (2018)

Note: We plan to sell ca. 50% of existing and new Opole Plant

DECOMMISSIONINGS:

- Szczecin 60 MW (2012)
- Bydgoszcz 55MW (2013), 4MW (2016), 67MW (2021-2025), 55MW (2026-2030)
- Dolna Odra 205MW (2015), 454MW (2016-2020)*, 908MW (2026-2030)
- Gorzów 32MW (2016)
- Pomorzany 134MW (2021-2025)
- Opole 749 MW (2031 - 2035)

* option to prolong lifetime

Pros and cons

+ commodity

+ Polish coal market not directly linked to international prices

+ huge coal resources in Poland

+ know how in construction, operation and maintenance

- relatively high emission rate (0.745 t/MWh in 2017 technology)

- moderately expensive technology

Possible adjustments to baseline scenario

There is a space in Polish power system to build profitable hardcoal units without falling into overcapacity, but this is limited to 2-3 class 1,000 units only.

Currently we don't expect to build additional hard-coal units under any analysed scenarios.

Fuel mix considerations - gas

Currently

414 MW installed capacity:

- Lublin Wrotków (246.5MW)
- Gorzów (65.5 MW)
- Rzeszów (102 MW)

Gas share in fuel mix: 4%

Future

NEW CAPACITIES:

- Bydgoszcz 240 MW (2017)
- Gorzów 135 MW (2016)
- Pomorzany 240 MW (2024)
- Puławy 600 MW – 840 MW (2016) – PGE stake: at least 50%
- Lublin 135 MW (2018)

DECOMMISSIONINGS:

- Rzeszów 102 MW (2026 – 2030)
- Gorzów 65.5 MW (2031 – 2035)
- Lublin 231 MW (2033)

Pros and cons

+ Low emission rate (0.32 t/MWh in 2016 technology)

+ Gas units much cheaper in construction (no need to build all coal operation facilities)

+ potential of shale gas supply in Poland

+ Support system for efficient gas co-generation (yellow certificates)

- High price of fuel (over 2x higher than hardcoal and over 4x higher than lignite)

- Not very favourable outlook for conventional gas prices

- Gas market still not liberalized

- Commercial availability of shale gas not proven

Possible adjustments to baseline scenario

Currently construction of CCGT plants in a condensation mode is definitely not economically justified.

Our interest in CCGT may increase if grid operator decides to pay for availability of peak power.

HIGH CO2 PRICE SCENARIO:

- more gas units may be built

AVAILABLE SHALE GAS SCENARIO

- more gas units may be built (ultimately baseload CCGT may become profitable)
- PGE may engage in shale gas upstream segment

Fuel mix considerations - renewables

Currently

417 MW installed capacity:

- Wind (30 MW)
- Hydro (387 MW) - incl. natural flow peak power pumped water plants (291 MW)
- Biomass (generation of ca. 0.7 TWh in 2011)

Renewables share in fuel mix: 3%

Future

NEW CAPACITIES

- Pelplin 48 MW (2012)
- Żuromin 60 MW (2012)
- To achieve 1,000 MW in on-shore wind till 2015
- 1,000 MW in off-shore wind till 2020
- 1,000 MW in off-shore wind till 2025

Biomass generation to increase to ca. 4 TWh till 2015.

DECOMMISSIONINGS:

We estimate lifetime of a wind farm for 15-20 years.

Pros and cons

+ emmission free
+ decent financial support (green certificates in Poland)
+ no fuel cost (wind)
+ low construction cost, quick return (biomass)

- without support not profitable at all
- high cost of construction (wind)
- limited number of potential locations (wind)
- low utilization (wind)
- production volatility (wind)
- limited supply of fuel (biomass)

Possible adjustments to baseline scenario

Profitability of renewable generation depends on support level, therefore geographic diversification helps to manage regulatory risk

We believe that support system for renewable energy will be sustained, especially in strong economies.

Fuel mix considerations - nuclear

Currently

No nuclear power in Poland

PGE mandated to build first two nuclear power plants

Three potential localizations (Choczewo, Gąski, Żarnowiec, all on the seaside) announced in Nov. 2011

Tenders for Owner's Engineer and Legal Advisor in progress

Tender for technology supplier will be announced in 2012

Future

NEW CAPACITIES:

- First nuclear plant (ca. 3,000 MW) – 2025
- Second nuclear plant (ca. 3,000 MW) – 2029

PGE wil have at least 51% and desirably 75% stake in nuclear power plants.

Pros and cons

+ emmission free

+ low cost of fuel and low sensitivity to fuel price

+ safe and reliable technology

- long construction period – schedule risk

- limited know-how

- public opinion concerns

Possible adjustments to baseline scenario

We estimate levelized cost of electricity from nuclear power plant at ca. 65-68 EUR/MWh, what justifies construction of plants under most scenarios.

Nuclear plants are important in diversification efforts, as they decrease exposure to fossil fuel (e.g. CO_2) risks.

However scope of the whole programme will depend on economic conditions.

Polska Grupa Energetyczna

Thank you

Investor Relations Contacts:
ir@gkpge.pl

Head of IR
Przemek Wasilewski
Tel: (+48 22) 340 19 46
Fax: (+48 22) 629 47 25
Mob: +48 723 189 235

IR Officer
Krzysztof Dragan
Tel: (+48 22) 340 15 13
Fax: (+48 22) 629 47 25
Mob: +48 601 334 290

IR Officer
Agata Milewska
Tel: (+48 22) 340 10 35
Fax: (+48 22) 629 47 25
Mob: +48 723 996 513

IR Officer
Jakub Frejlich
Tel: (+48 22) 340 10 32
Fax: (+48 22) 629 47 25
Mob: +48 695 883 902