

National Action Renewable Energy Plan

prof. Krzysztof Źmijewski
Sekretarz Generalny

Spółecznej Rady
Narodowego Programu
Redukcji Emisji

24 February 2011 r.

Warszawa

Climate package Poland



POLSKA

- limit for emission of GG in 2020 comparing with low emission in 2005 r non-ETS sector**
 - =+14%**
- decrease of energy consumption of 20% in 2020 r.**
 - = ???**
- RES share in final energy consumption in 2020 r.**
 - = 15 %**

Polish electroenergy system

Old technologies :

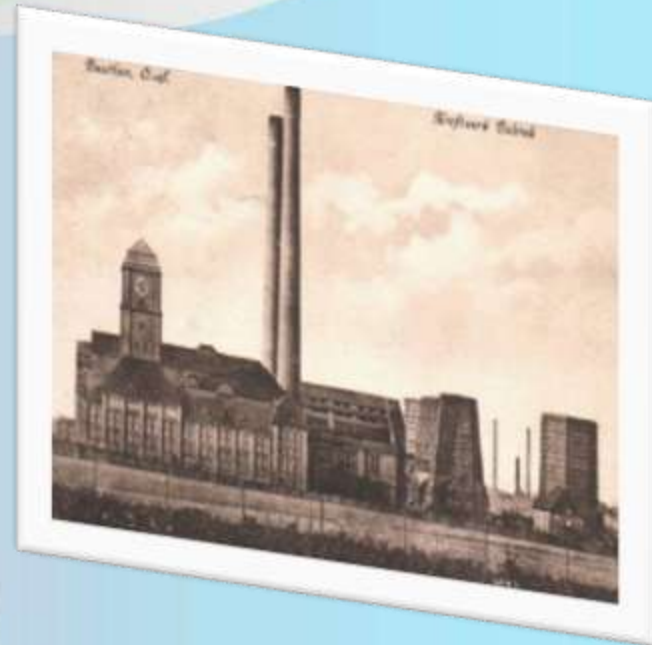
Energy safety

Production capacity

GG reduction capacity

Monitoring of energy demand or changes of energy sources

Construction and connection of new energy sources, including low emission sources



Problems of energy sector



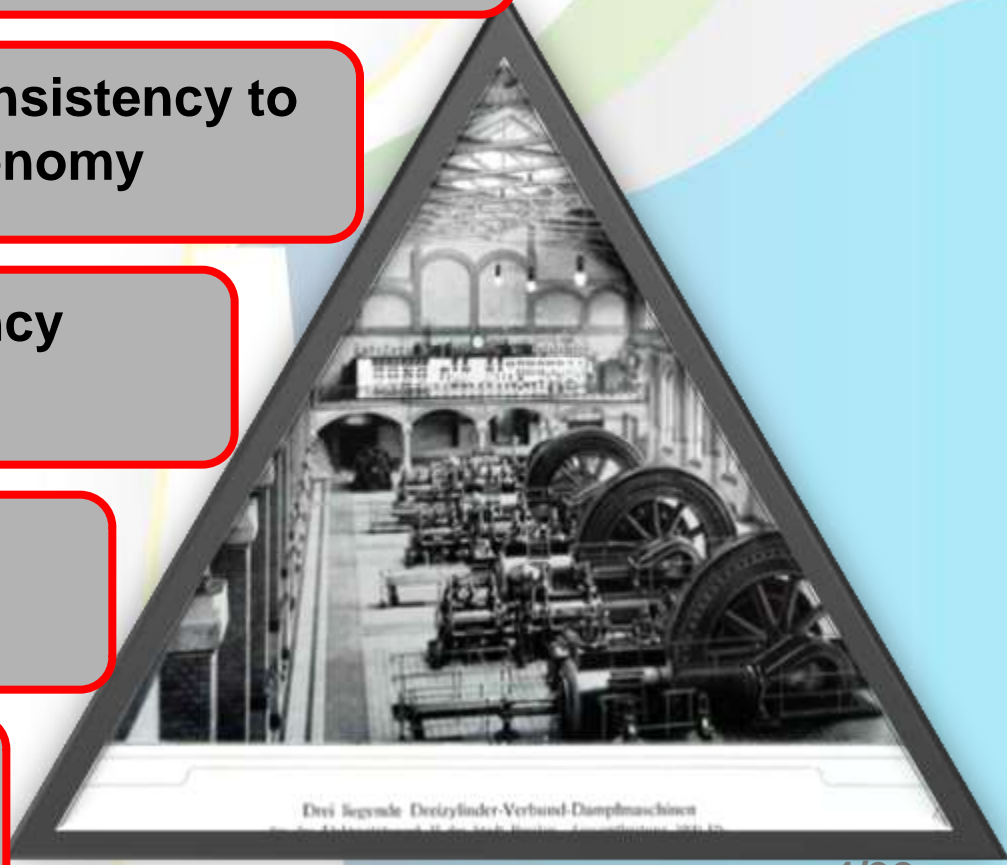
**Outdated technologies
(high emission)**

**Geographical inconsistency to
needs of economy**

Low energy efficiency

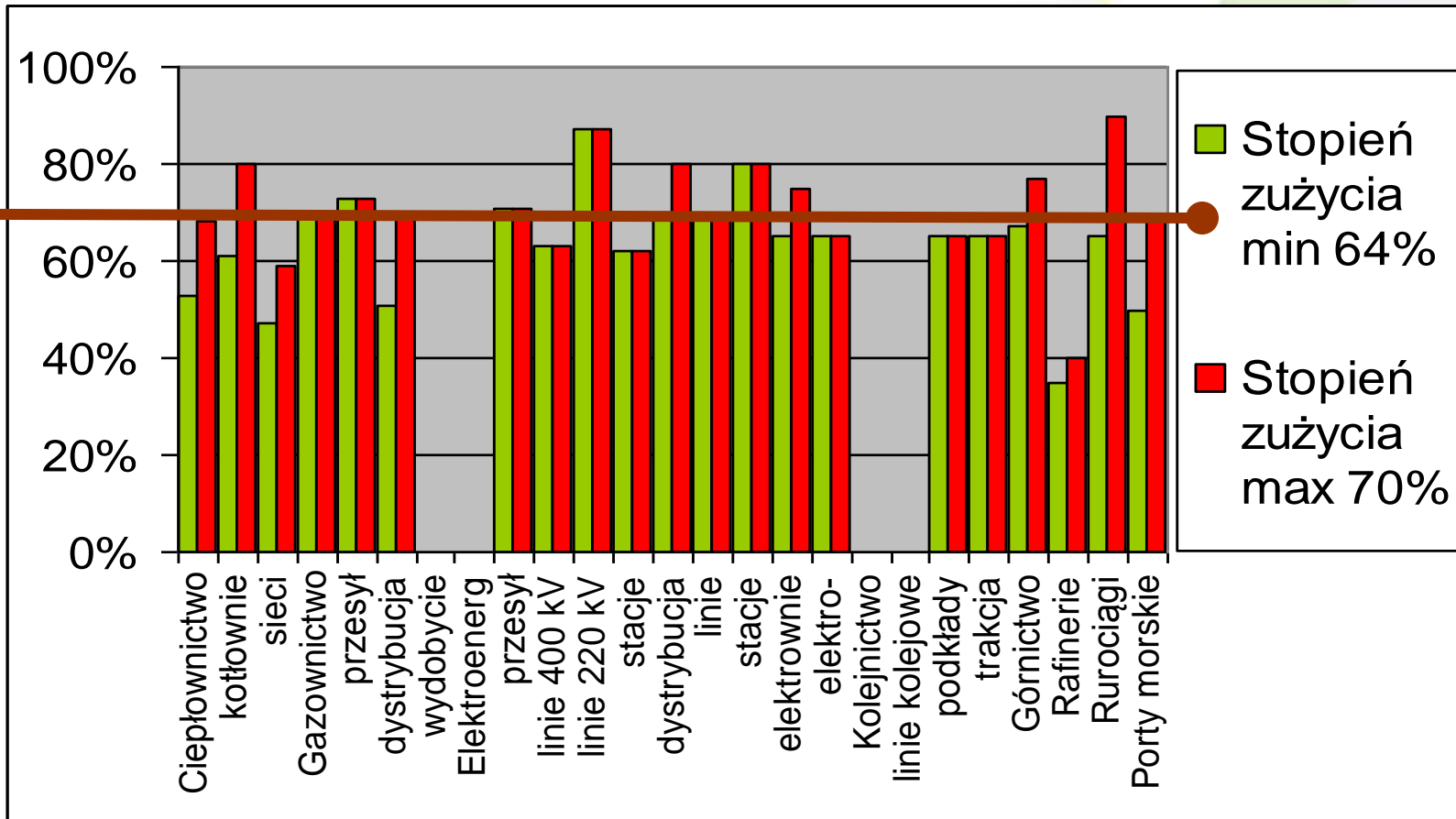
High coal monopoly

Low flexibility



Amortization of infrastructure

INFRASTRUCUTRE



Construction of new energy sources

Construction of new power plants is a long time process :

❑ construction of Pątnów II - 6 years,

❑ construction of Łagiszy II 5 years

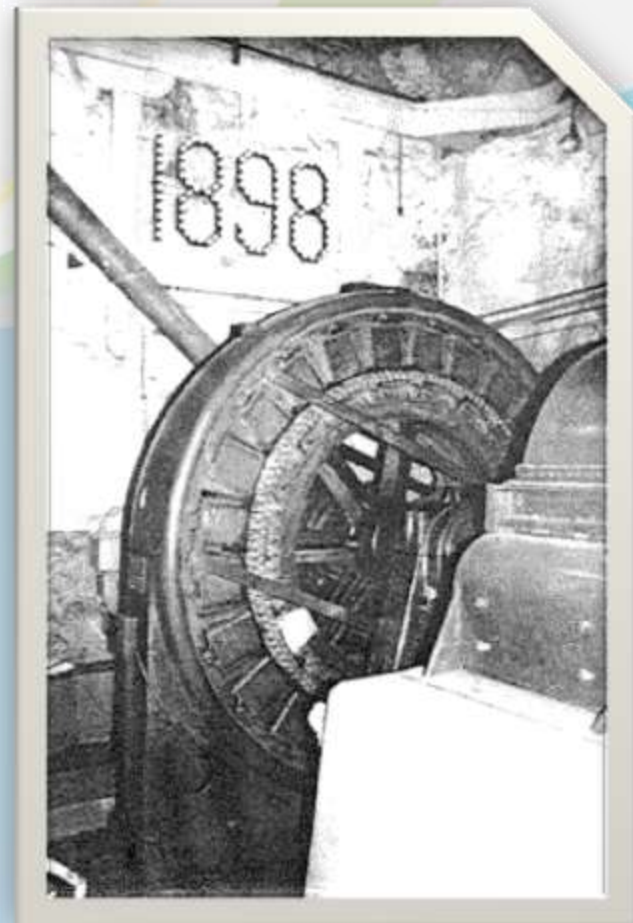
❑ 856 MW in Bełchatowie is under construction since 4 years.



„Ancient” power plants

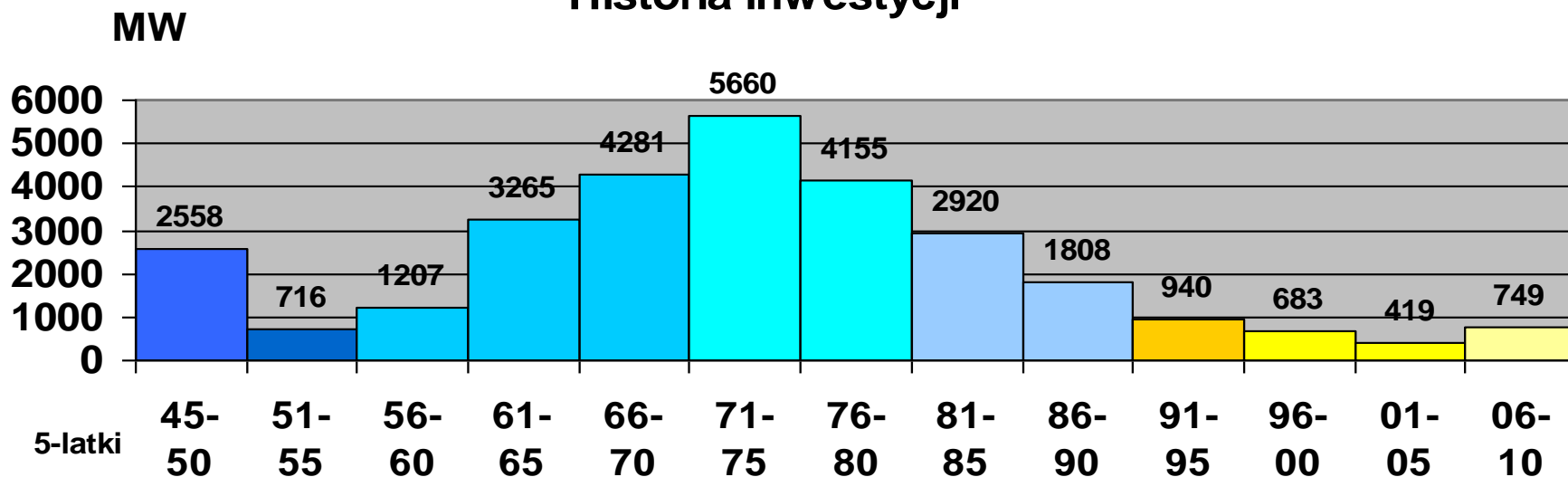
40% power plants is more than 40 years old, including ca.15% of more than 50 years, so they should be stopped and disconnected from the grid.

Power plants of more 30 years old and more - 70%.



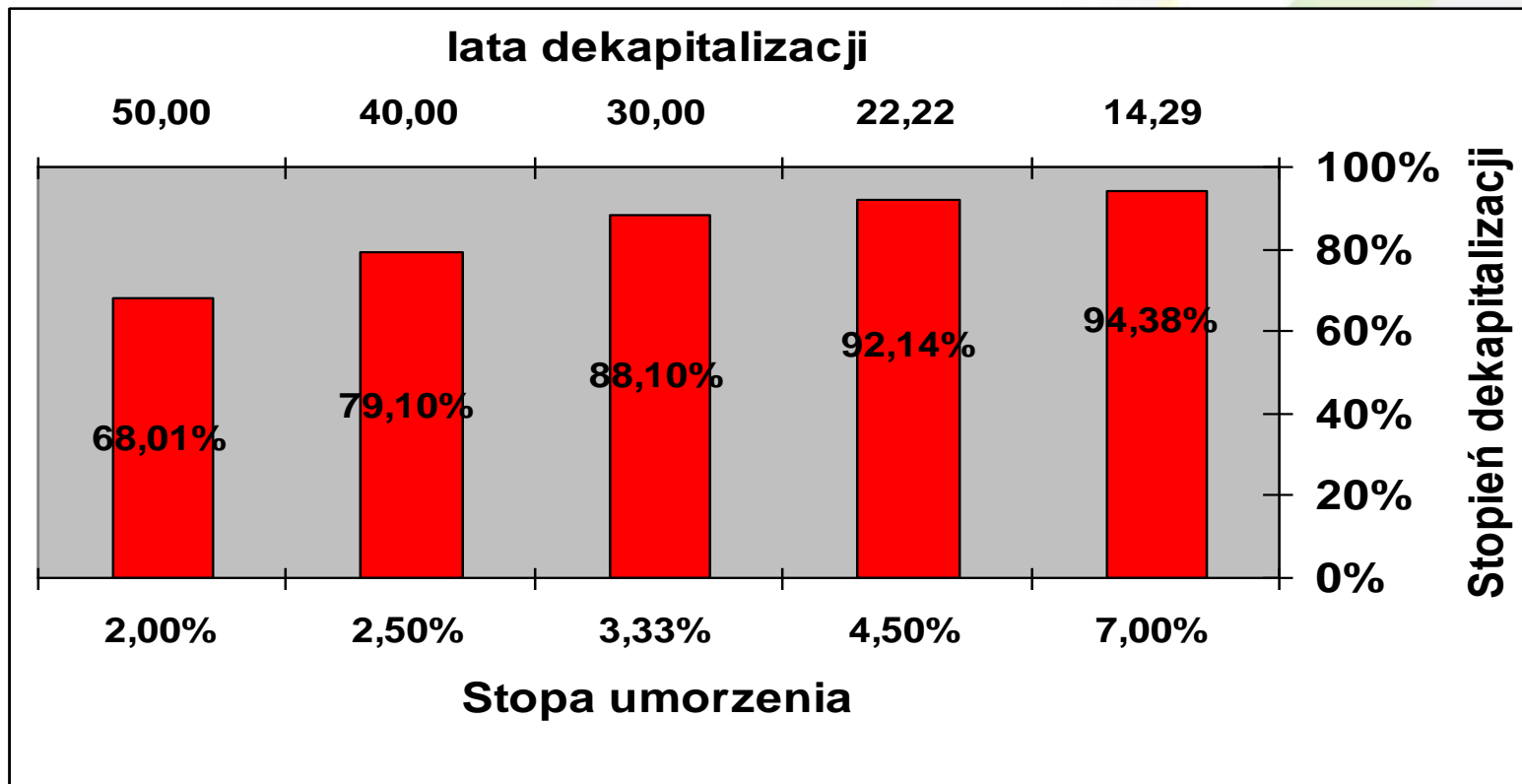
History of investments in energy sector

Historia inwestycji



Amortization of infrastructure

POWER PLANTS



Lack of infrastructure

- ❑ Lack of connection infrastructure needed for development of dispersed power production,
- ❑ Weak grid infrastructure in the regions of the highest RES potentials – Northern Poland,
- ❑ Problems with connection of wind farms to the grid



Lack of concept

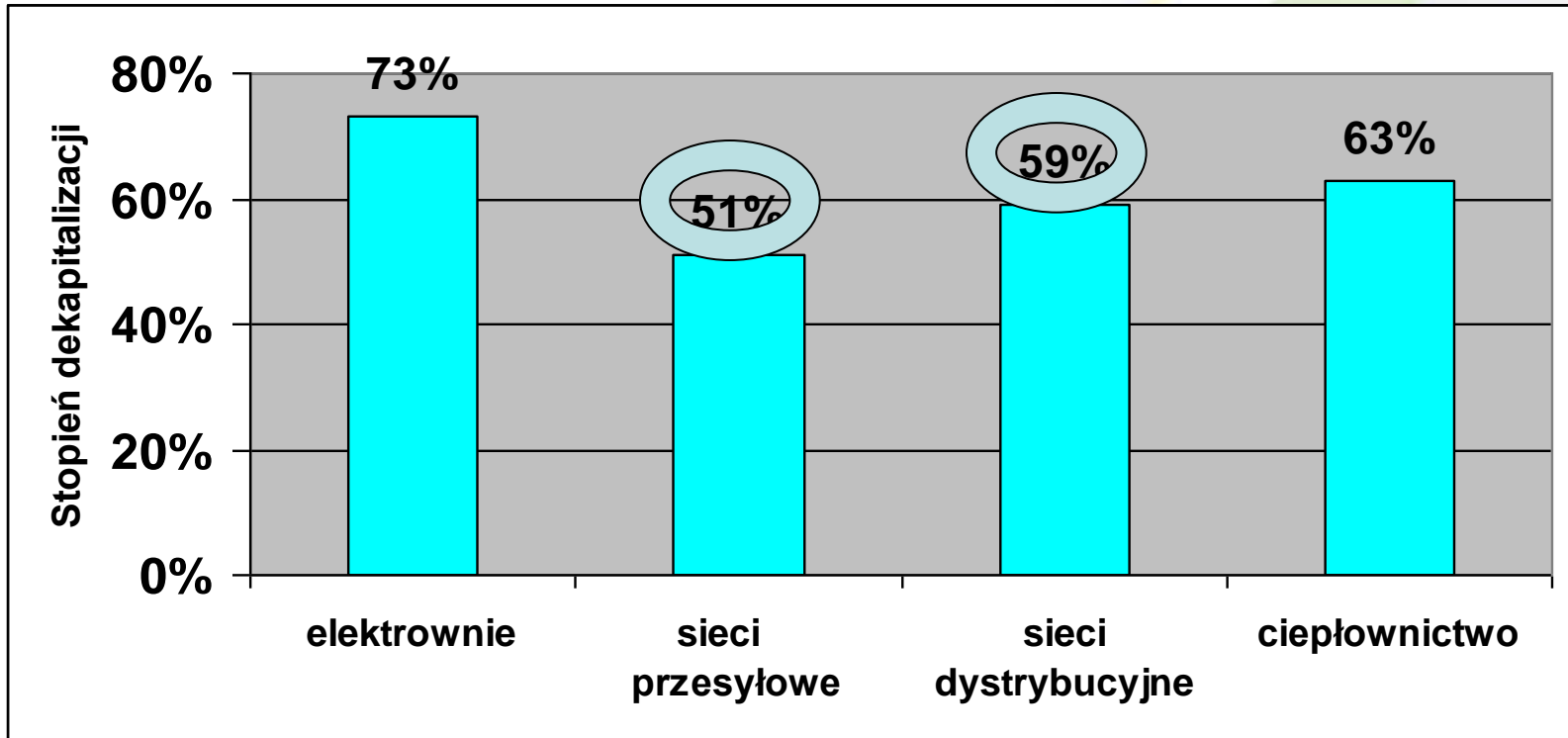
Lack of concept:

- for financial support for construction of new energy source and grids,
- for legal aspects
- for coordination of investments.



Amortization of infrastructure 2/4

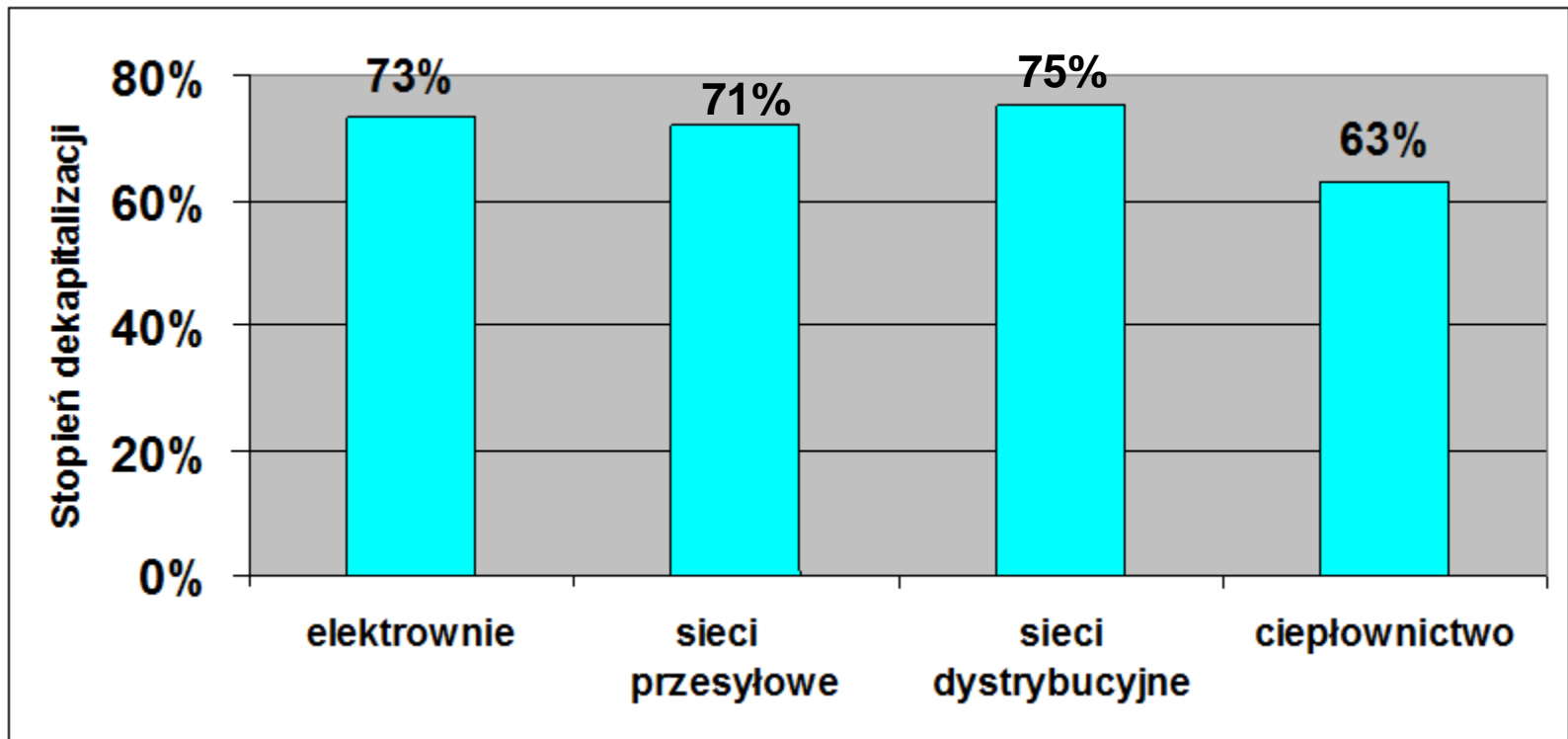
ENERGY SECTOR





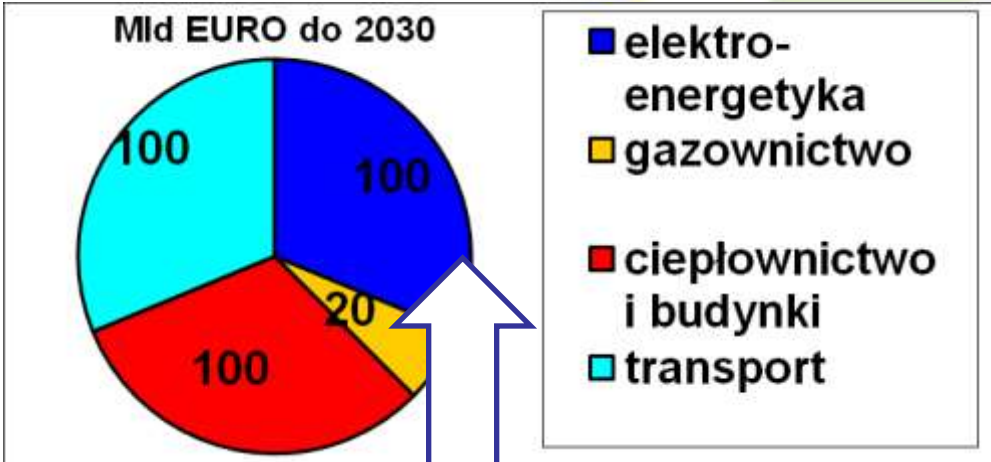
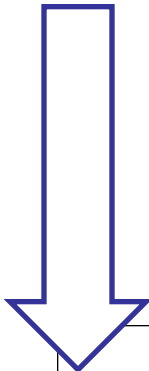
Amortization of infrastructure 3/4

ENERGY SECTOR

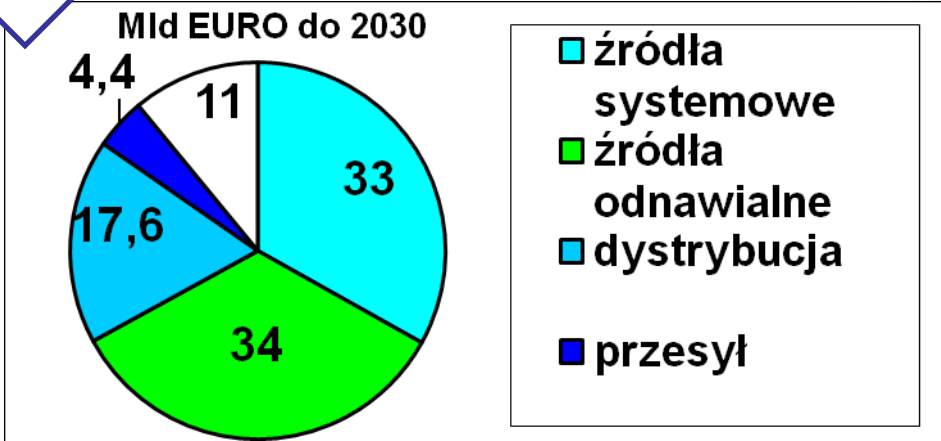


Scale of investments

Distribution
4,4 mld euro



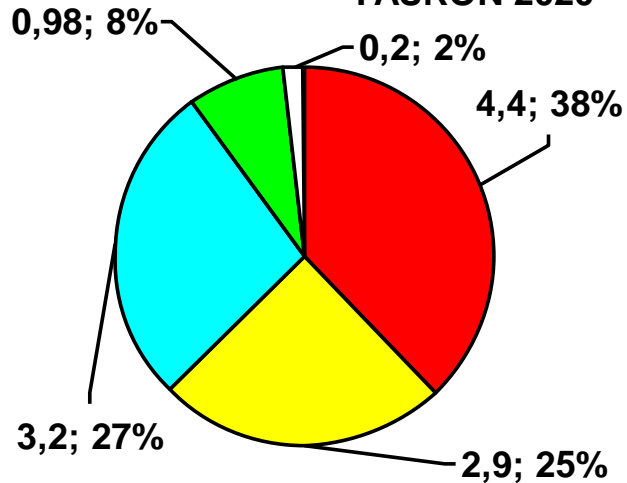
Energy sector 100 mld euro





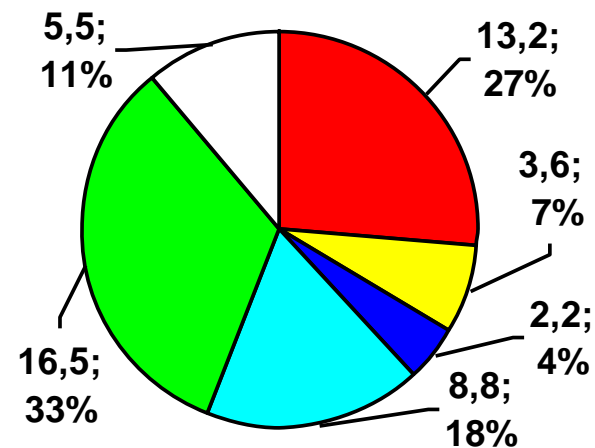
Investment profile

TAURON 2020



- GENERACJA plan
- GENERACJA opcja
- DYSTRYBUCJA
- OZE
- INNE

POLSKA 2020



- GENERACJA konwenc
- GENERACJA atom
- PRZESYŁ
- ROZDZIAŁ - DYSTR.
- OZE
- EFEKTYWNOŚĆ ENERGI



Why OZE?



- Unlimited energy sources



- Energy safety



- Technical amortization of infrastructure



- Low emission

!RES !





Unlimited potential

fossil fuels potential is depleting

policy of sustainable development

RES potential is not declining along time– sources of unlimited potential in time.

Energy safety



RES are not dependend from external supply;



Based on national sources;



Increase of energy safety



Technical amortization

National Grid may have problems to cover energy demand;

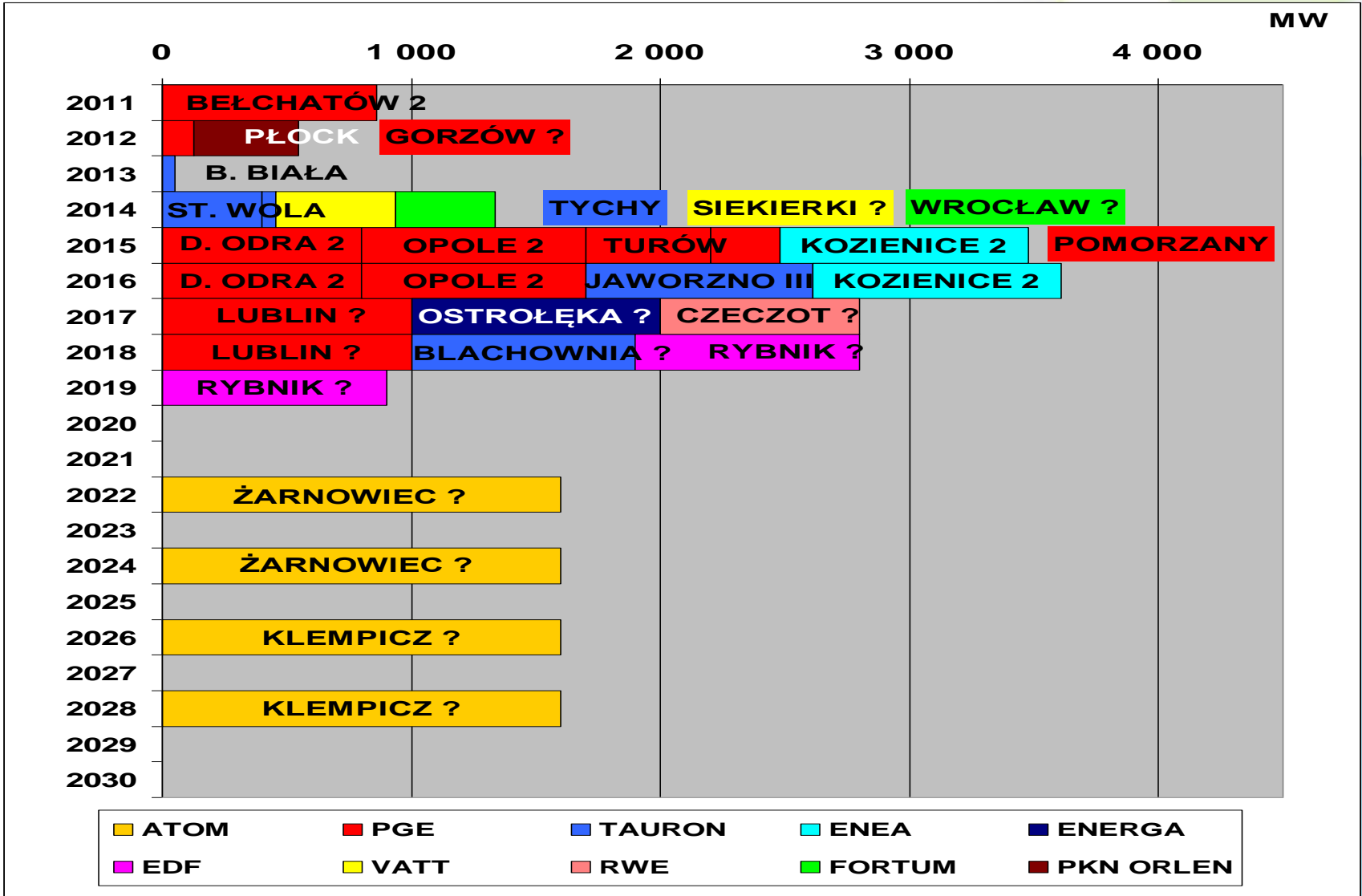
investment process is long-time one;

in the near future no new significant power plants will be started;

RES, are built in relatively short time— chance for fast supplement of system.

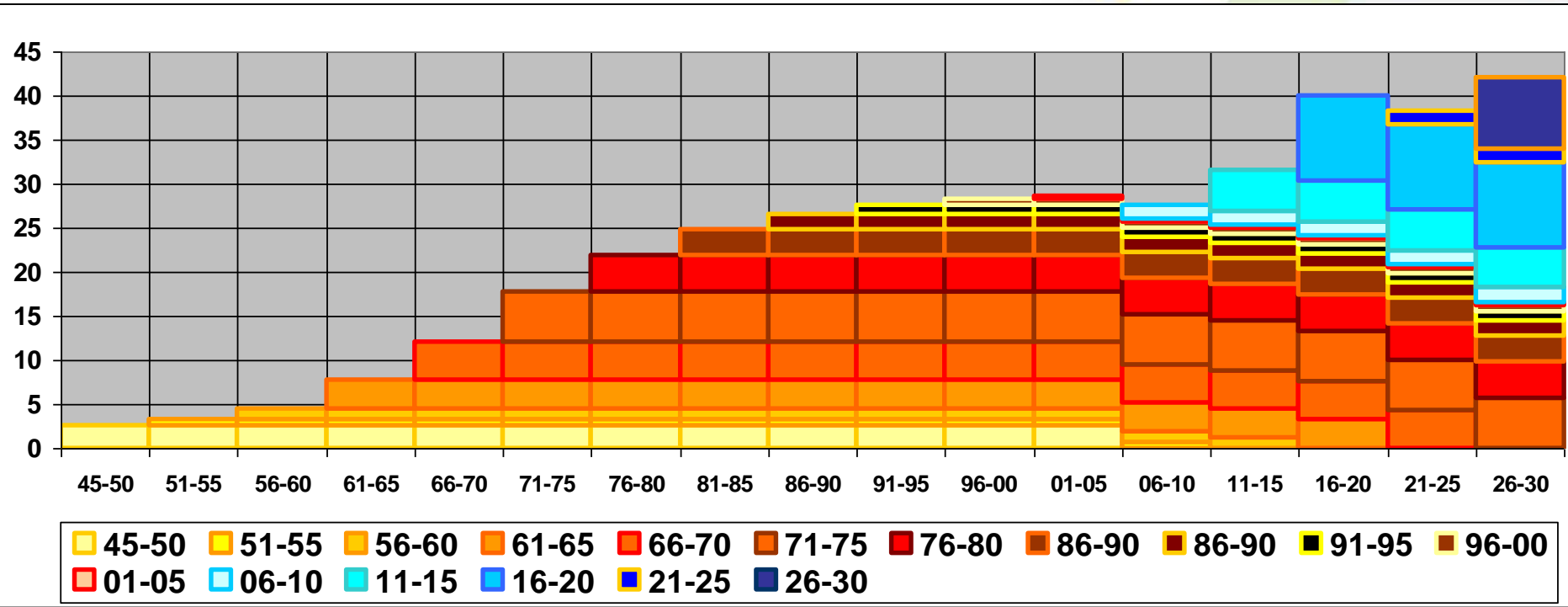


Investment programme

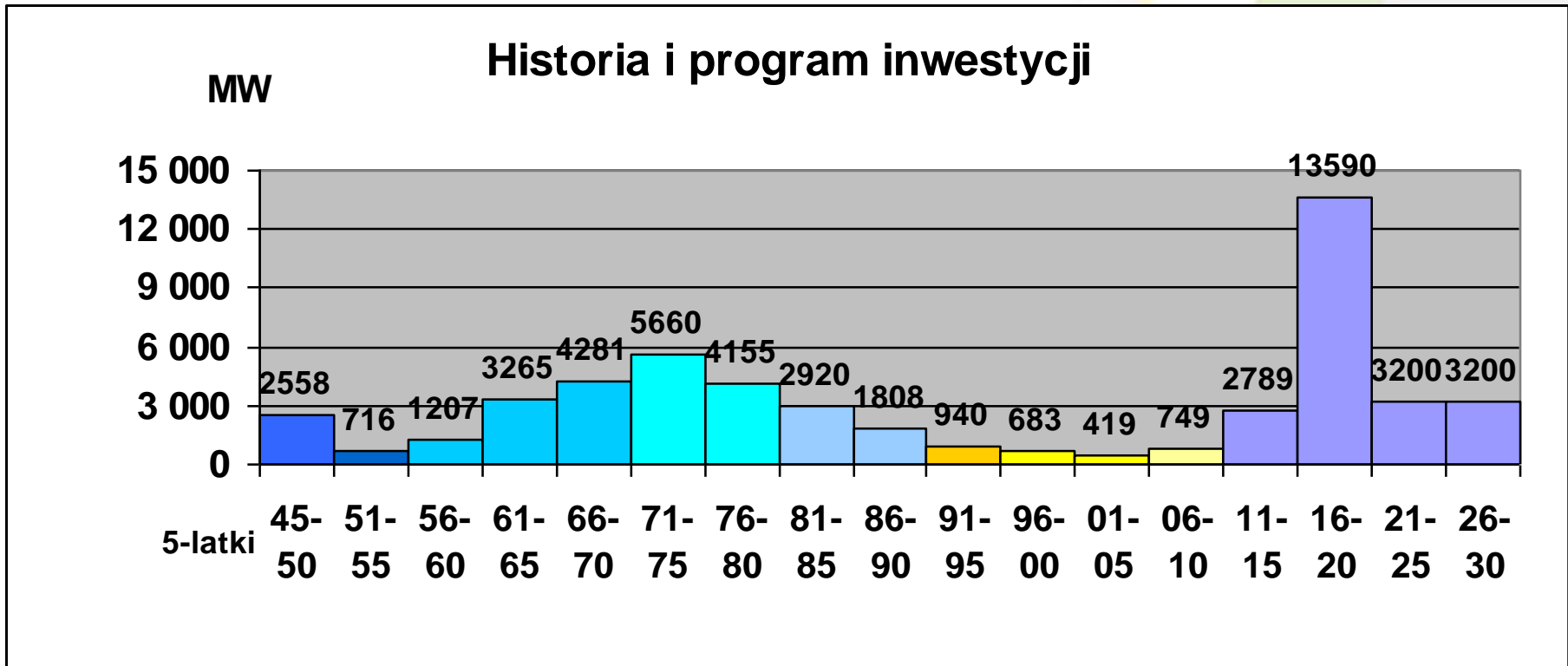


Future of investments in energy sector 1/4

55 years
life time



Future of investments in energy sector 2/4



optimistic

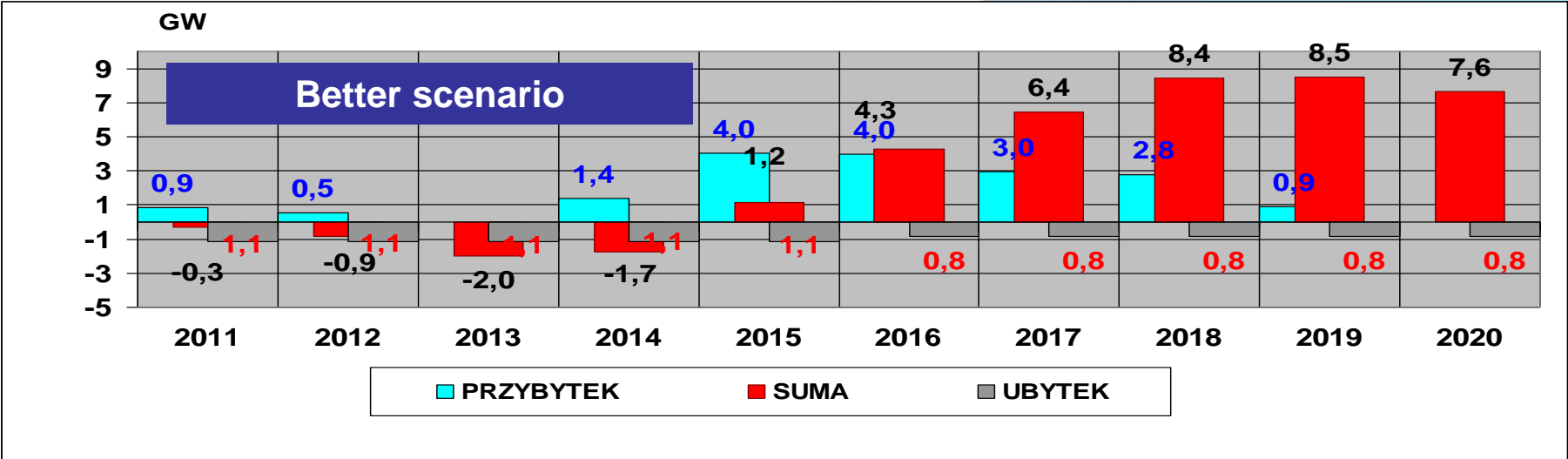
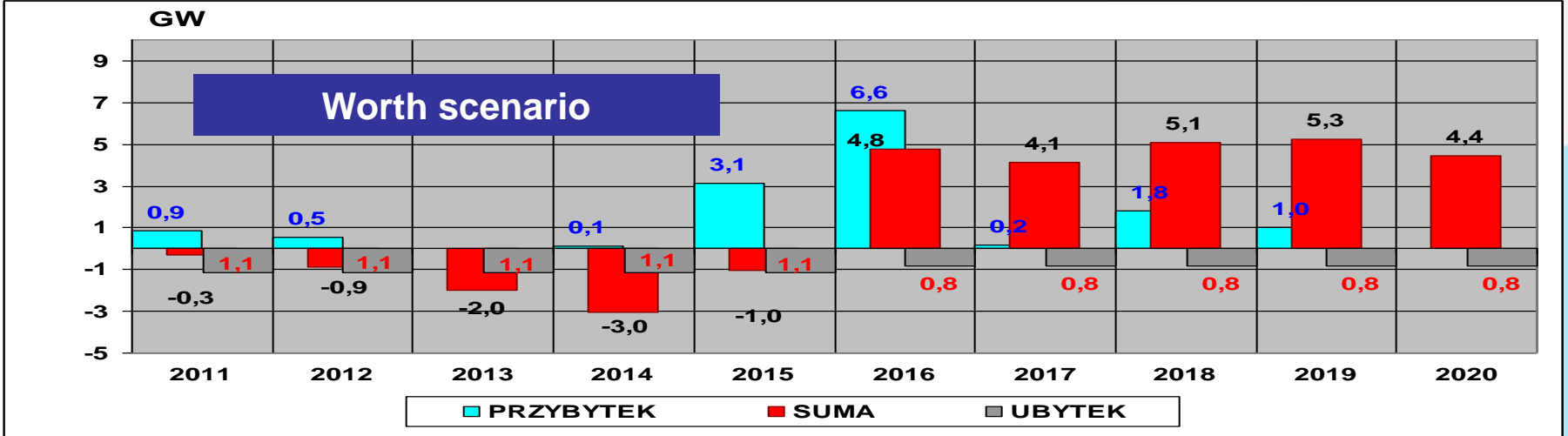
sustainable

?

pesymistic

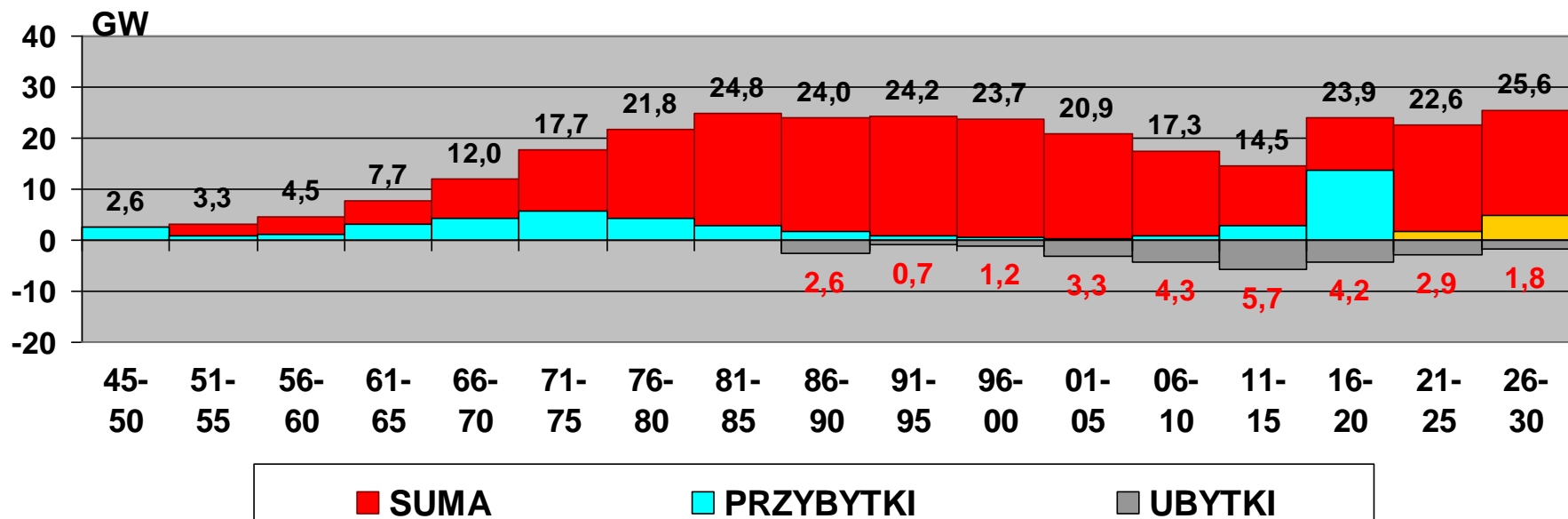


Future of investments in energy sector 3/4



Future of investments in energy sector 4/4

40 years
lifetime lat



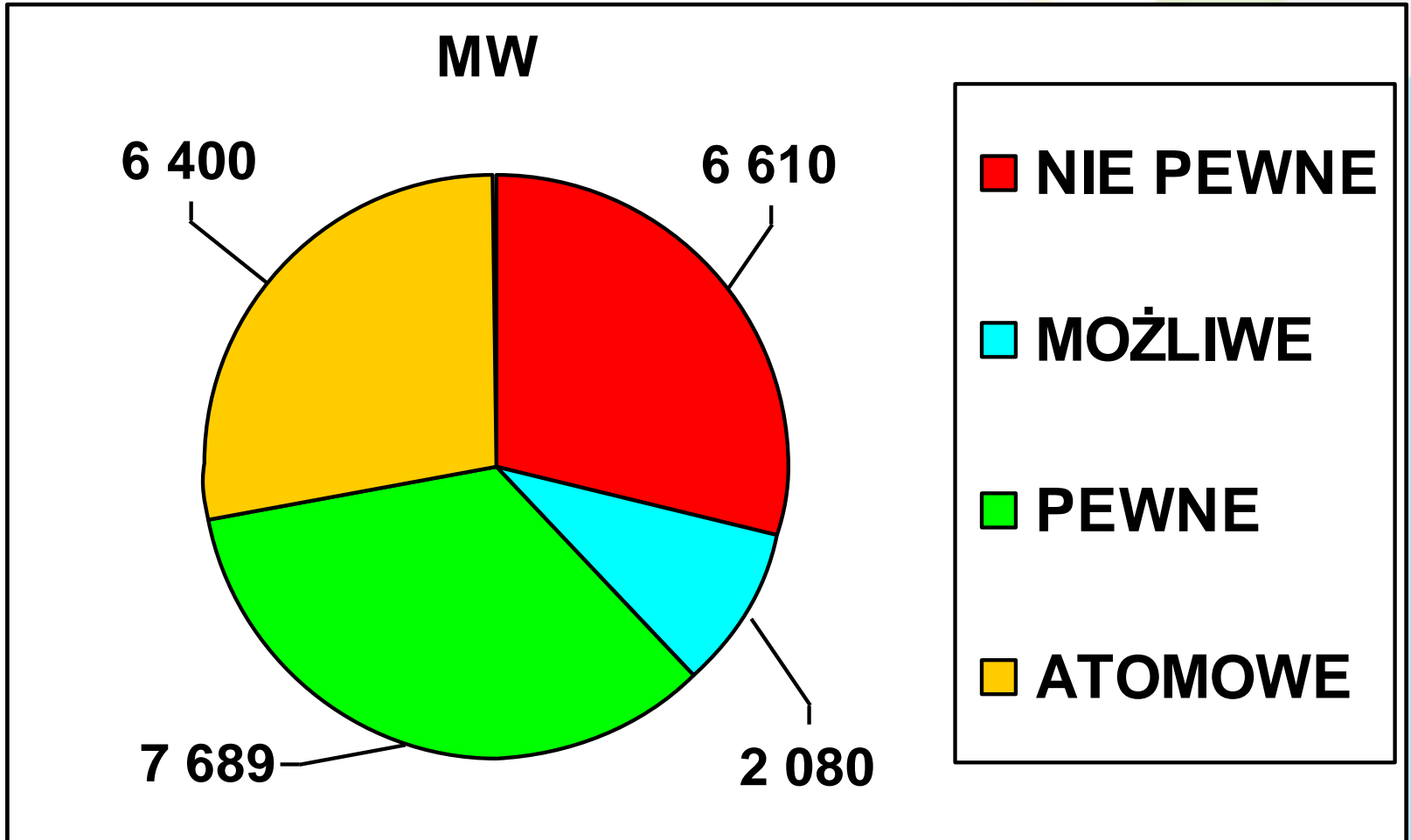
pesymistic

optymistic

sustainable ?



Investment probability



How to finance Programme ?

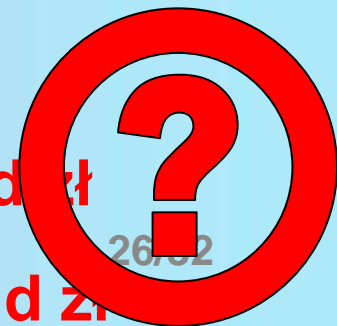
26/39+10

Investment potential

• potential of credits	52 mld zł	max	4xEBITDA
• potential of equity	65 mld zł		5xEBITDA
• total	117 mld zł		9xEBITDA

Investment needs

- M. Purta, W. Bogdan (McKinsey) 112 - 139 mld zł (without nuclear and efficiency)
- as above with nuclear and efficiency **152 - 195 mld zł**
- K. Żmijewski (SR NPRES) **180 - 200 mld zł**



26/32



Rainbow certification 1/2

Certificates

1 Green – energy from RES

2 Red – CHP

3 Blue – energy from modernized energy source

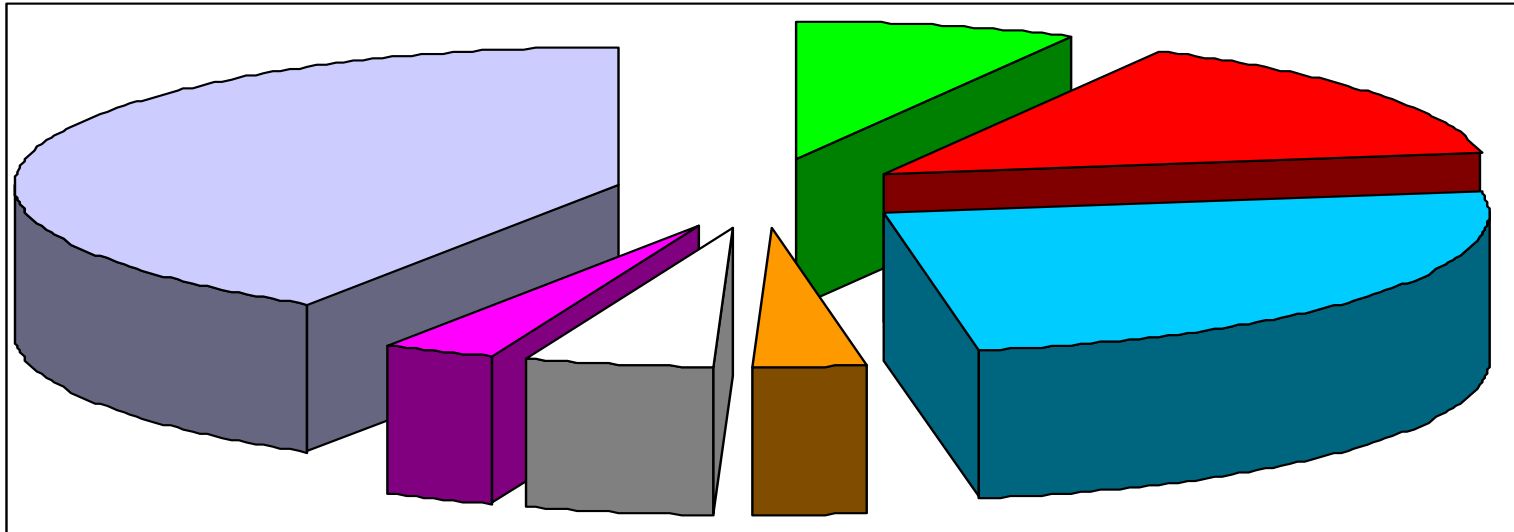
4 Orange – energy from experimental technologies eg. „clean” coal

5 White – energy from „negawatts”

6 Violet – energy from demethanization



Rainbow certification 2/2



Ziel

Czerw

Błęk

Pomar

Białe


Fiolet

Wolny rynek



SPOŁECZNA RADA
NARODOWEGO PROGRAMU
REDUKCJI EMISJI

[Prezydium Rady](#) [Grupy Robocze](#) [Forum](#)

szukaj na stronie ... 

- » Aktualności
- » Społeczna Rada NPRE
- » Z prac Rady
- » Z prac Grup Roboczych
- » Wsp. międzynarodowa
- » Analizy / Raporty
- » Publikacje
- » Akty Prawne
- » Centrum Prasowe

[prof. Jerzy Buzek o propozycji redukcji emisji CO2](#)

piątek, 05 marca 2010

Zachęcamy do zapoznania się z wypowiedzią prof. Jerzego Buzka Przewodniczącego Rady dotyczącą propozycji ograniczenia emisji CO2 przez kraje Unii Europejskiej do roku 2020.

Więcej informacji w zakładce Centrum Prasowe.

[Spotkanie ministra Kraszewskiego z dyrektorem Delbeke](#)

wtorek, 02 marca 2010

Zachęcamy do zapoznania się z informacją dotyczącą spotkania ministra Kraszewskiego z dyrektorem Delbeke, które odbyło się w Brukseli.



Ministerstwo Gospodarki



**Thank you for your
attention**



**Krzysztof Żmijewski
prof. PW**

**Sekretarz Generalny
Społecznej Rady
Narodowego Programu
Redukcji Emisji**