Priorities in the Polish District Heating Industry

Chamber of Commerce
Polish District Heating

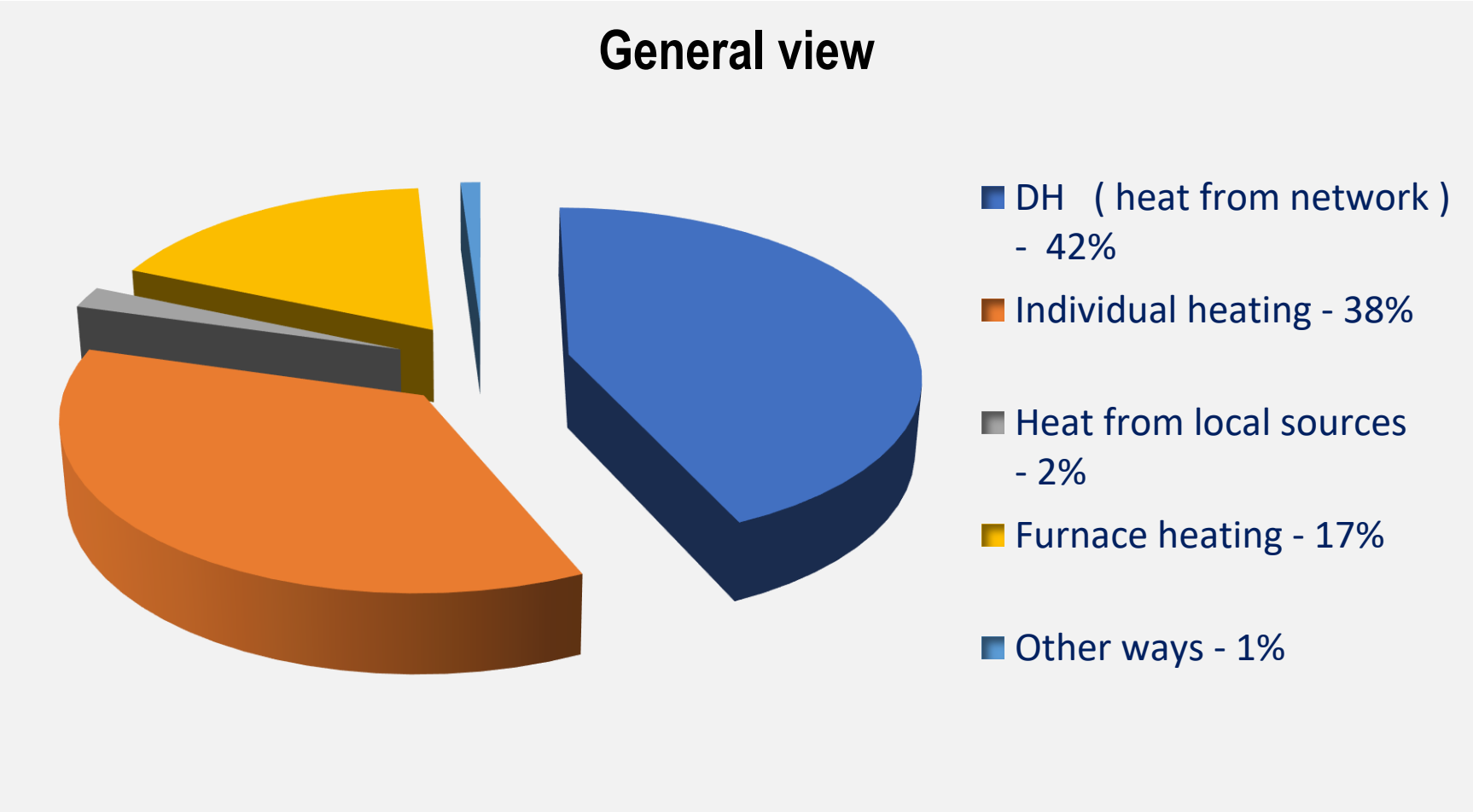
IGCP as a representative of the sector

Chamber of Commerce Polish District Heating

- Is an organization founded in 1994 that brings together enterprises, whose activities are related to the production, processing, storage, transmission, distribution and marketing of heat. The Chamber operates in the country as well as abroad. We are also a member of Euroheat & Power. The Chamber unites 244 members of different ownership structure and diversified sales volume of heat from below 100 thousand GJ to 40 million GJ per year.
- The core activities of the Chamber are focused on the evaluations of projects and substantive amendments to existing legislation, enabling cooperation between the Chamber in determining the development programs and the modernization of district heating and caring for creating conditions conducive to the development of district heating. The Chamber insists on integration of the environment associated with heat, an it represents the economic interests of members to the state authorities, local governments, societies, as well as scientific and economic institutions.
- As part of the activities, the Chamber initiates and participates in the restructuring processes of the entire sector. One of the objectives of the processes is to meet current and future emission standards, which allows effective reduction of high emissions as well as effective reduction of the so-called low emission.
- IGCP conducts also a very broad educational and training activities (including the pioneer nationwide system heat promotion programme).

HEADQUARTERS – in Warsaw

Heat market in Poland



Source: National Census - Central Statistical Office 2013

Structure of forms of heat supply to households in Poland in total

The potential of District Heating in Poland

Number of licensed heating companies

393

Installed heating power in MW

54 109

Heating power ordered by receivers in MW

35 021

Length of heating networks in km

22 223

Annual heat production in TJ

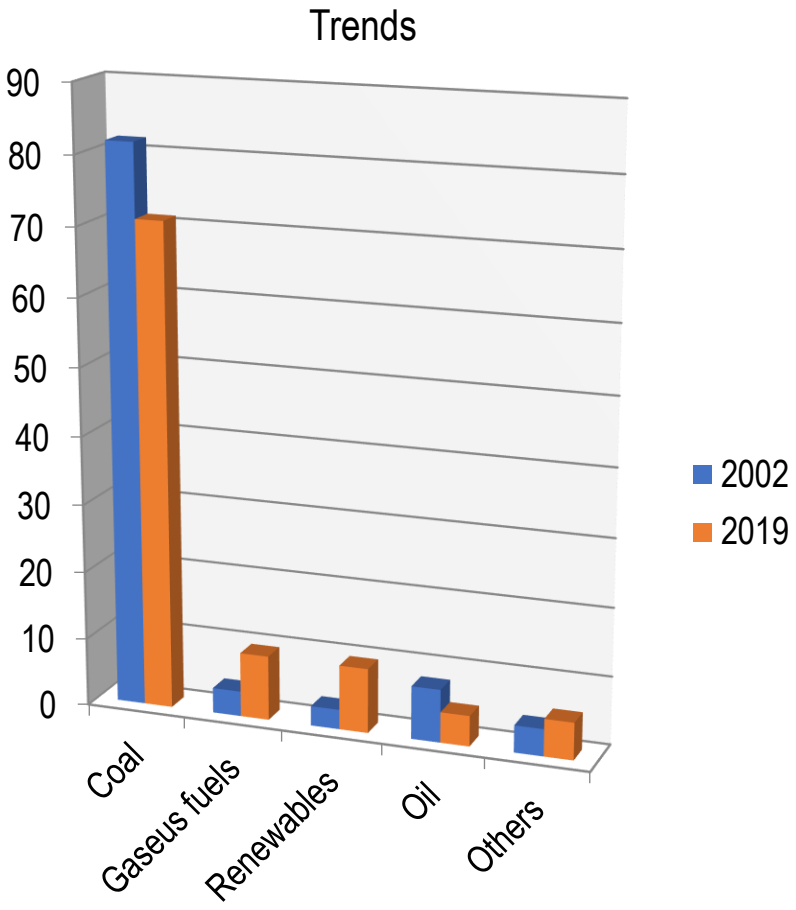
385 599

Heat share from CHP:

ok. 60%

Source: Energy Regulatory Office – Heat energy in numbers - 2021

The structure of energy carriers



The main challenge is to reduce carbon dioxide emissions!

share in %

Fuel	2002	2021
Coal	81,7	69,5
Gaseus fuels	3,7	9,9
Renewables	2,9	9,9
Oil	7,8	5,3
Others	4	5,4

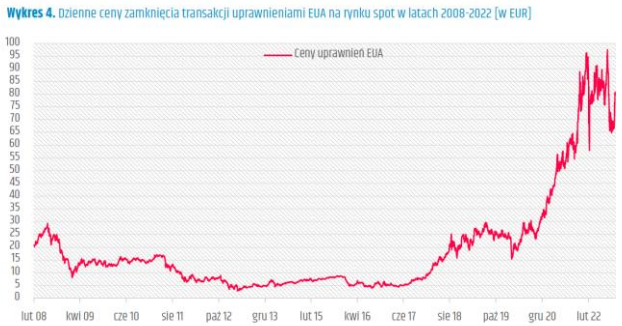
Source: Energy Regulatory Office - 2021

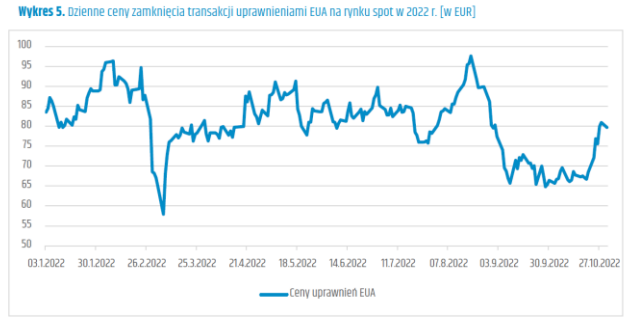
One of the possible scenarios developed by IGCP
Projected structure of energy carriers in 2030

share in %

Fuel	2002	2021	2030
Coal	81,7	69,5	45
Gaseus fuels	3,7	9,9	19
Renewables	2,9	9,9	35
Oil	7,8	5,3	-
Others	4	5,4	1

real threat - ETS as a brake on investment in the transformation process





Źródło: Opracowanie własne KOBiZE na podstawie danych o cenach z giełdy Bluenext (od 26 lutego 2008 do 11 czerwca 2008 r.), rynku OTC (do dnia 10 czerwca 2009 r.) i giełdy ICE/ECX, Bluenext, EEX, Nordpool (od 11 czerwca 2009 r. do końca grudnia 2012 r.) oraz na podstawie danych giełdy ICE/ECX, EEX (poczynając od 1 stycznia 2013 r.).

heat generation - IGCP analysis by 2030

- ❑ construction of new gas cogeneration sources in small and medium-sized heating systems: approx. 1,500 to 3,000 MWe
- ❑ modernization of the existing cogeneration sources for gas fuel of approx.7,000 MWe
- ❑ construction of heat sources with the use of renewable energy – approx. 8,000 MWt
- ❑ other heat production technologies in line with the climate and energy policy (heat recovery, heat storage, waste management) approx. 1500 MWt

Sector description: economic and technical indicators

Year	Profitability of enterprises (%)		
	total	without cogeneration	in cogeneration
2010	0,35	3,41	-3,30
2011	-1,56	1,69	-5,33
2012	-1,64	2,60	-5,64
2013	1,81	4,47	-0,27
2014	3,63	2,54	4,43
2015	1,46	3,44	0,06
2016	9,68	4,7	13,09
2017	6,71	4,62	8,26
2018	1,88	1,60	2,08
2019	-2,92	1,68	-6,26
2020	-2,36	3,49	-6,25
2021	-5,78	0,08	-11,20

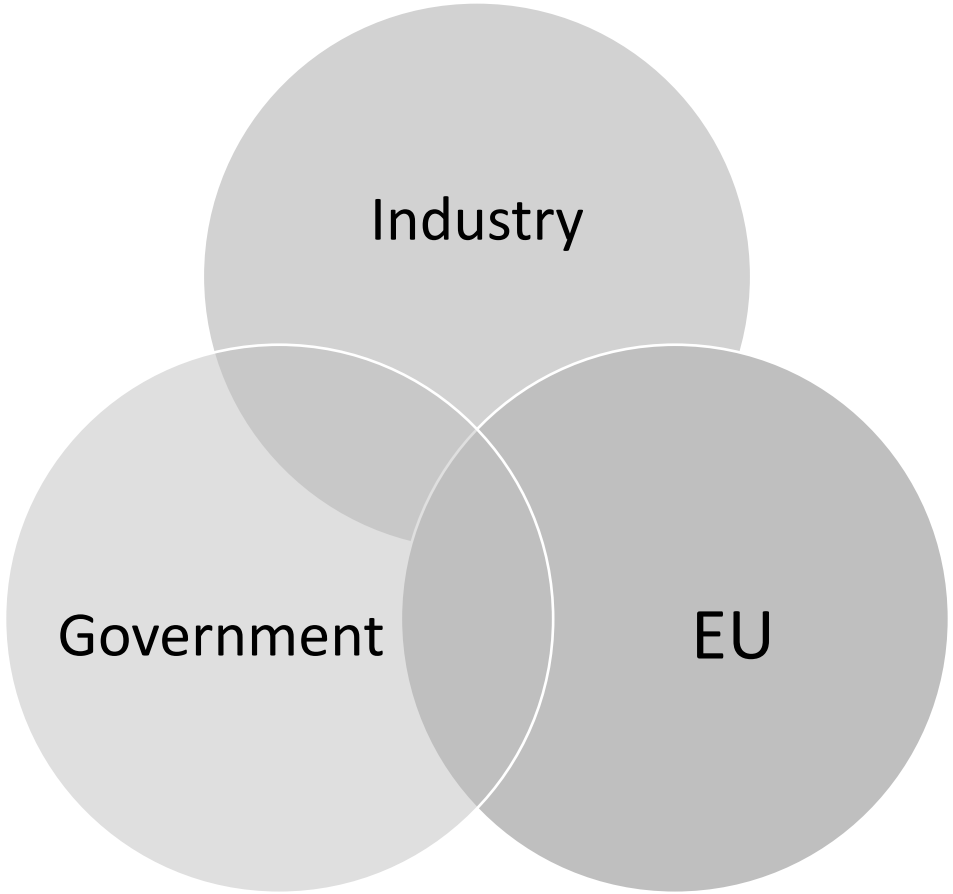
Indicators	Unit of measure	Value indicator		
Technical		2002	2020	2021
Production efficiency	%	79,70	85,10	85,34
Transmission efficiency	%	88,20	86,50	87,09
CO_2 emission intensity	Tona/TJ	120,80	98,60	102,03
SO_2 emission intensity	Tona/TJ	0,73	0,14	0,14
NOx emission intensity	Tona/TJ	0,26	0,1	0,1
Dust emission intensity	Tona/TJ	0,14	0,02	0,02

Year	Capital expenditures (mln PLN)	Decapitalization rate (%)
2002	1 278,60	54,75
2015	4 472,00	50,86
2019	3 481,10	48,87
2020	2 943,40	50.07
2021	3 848,76	50.53

Liquidity		
2002	2020	2021
0,71	0,72	0,62

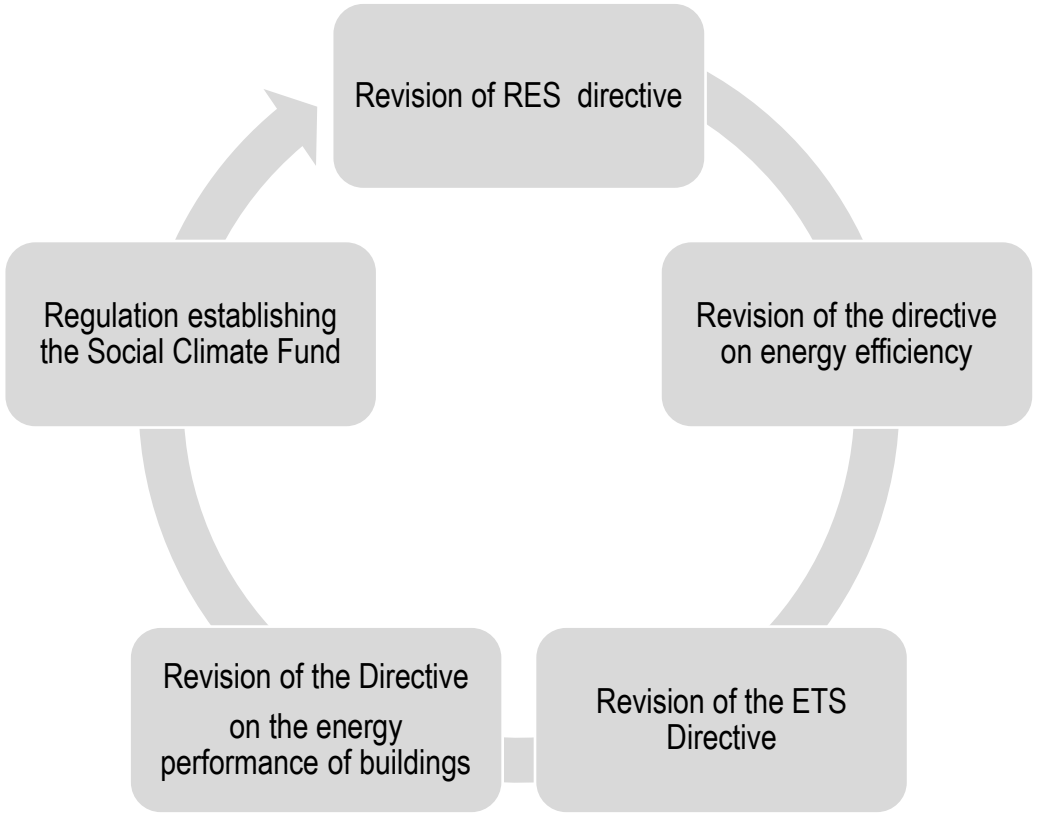
Source: Energy Regulatory Office – Heat energy in numbers - 2021

Priorities
from three points of view

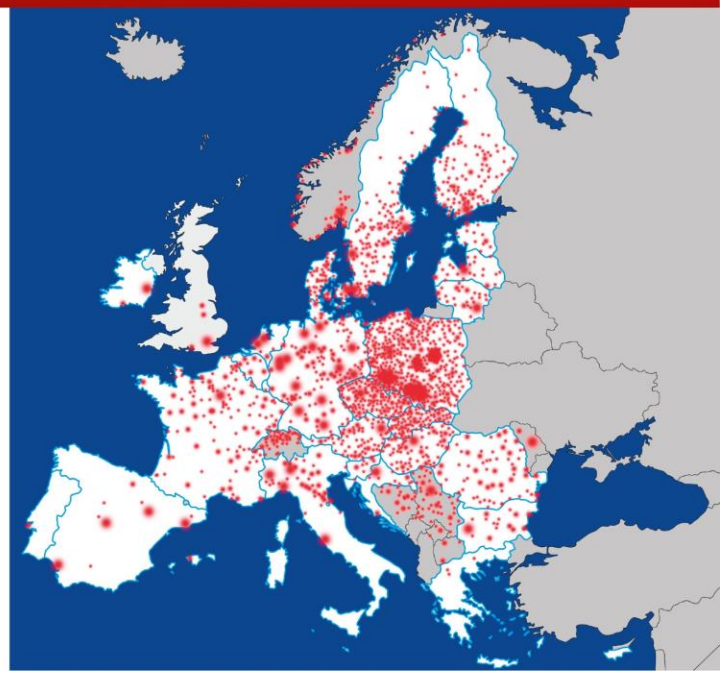


Fit for 55 - a new challenge for DHC in Poland - more powerful goals than the current ones set out in the **Green Deal**

How to carry out the energy transformation process in Poland that meets EU requirements, pro-climate, taking into account the national specificity of energy, socially acceptable



EC: "Energy consumption is responsible for 75% of emissions in the EU, therefore the transformation of the EU energy system is of key importance to climate ambitions"

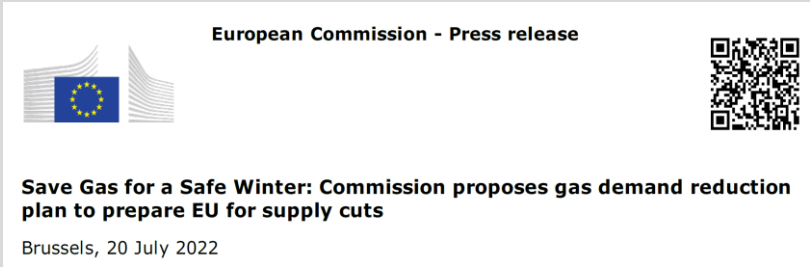


Chamber of Commerce Polish District Heating

Extraordinary situation, fuel crisis
this makes it necessary to **redefine energy policy**
Necessary actions at two levels: EU and national

- On May 19, 2022, the European Commission announced a new strategy as a response to the energy crisis
- **Measures** in the REPowerEU plan:

1. energy savings,
2. diversification of energy supply
3. the accelerated introduction of renewable energies
4. intelligently blending reform and investments (creating funds to protect citizens from energy poverty


European Commission - Press release

Save Gas for a Safe Winter: Commission proposes gas demand reduction plan to prepare EU for supply cuts

Brussels, 20 July 2022

Poland
parallel actions on three levels, in the short and long term

1

- ❑ National legislation
- ❑ Cooperation with local government

2

- ❑ Enterprise transformation

3

- ❑ Increased awareness of heat recipients
- ❑ Counteracting energy poverty, effective help for households

National legislation

Governmental priorities

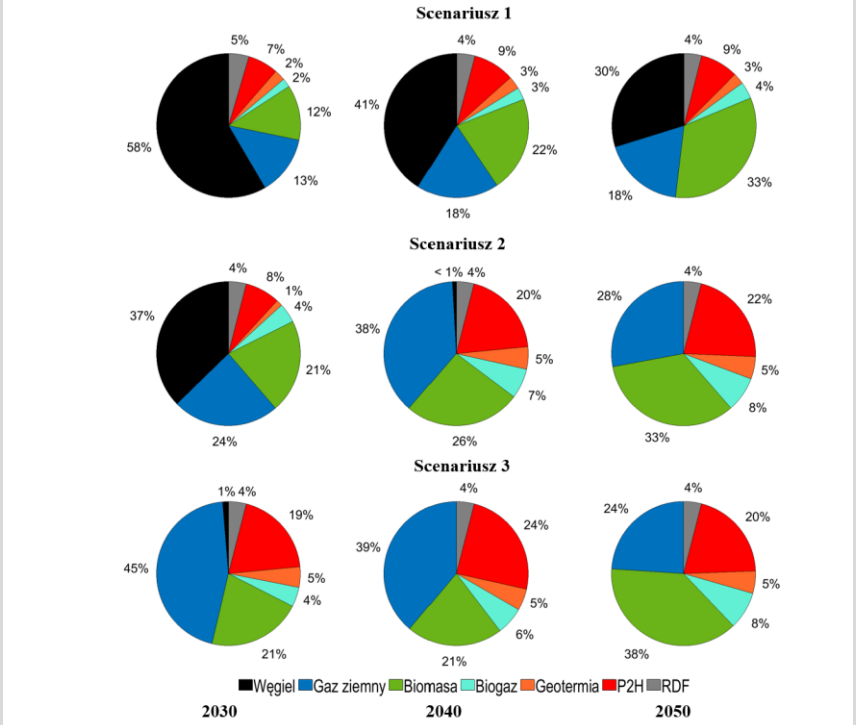
The Energy Policy of Poland until 2040 in part VII is devoted to district heating

Priorities were defined in the document

- ❑ The main goal was to cover all household heating needs in 2040 in a zero- or low-emission way
- ❑ By 2030, 1.5 million new households will be connected to the grid In 2030,
- ❑ At least 85 percent from among heating or cooling systems in which the ordered capacity exceeds 5 MW, is to meet the criteria of an energy-efficient heating system

Strategy for the heating sector until 2030 with a perspective until 2040 *(project)*

Rys. 12. Struktura nośników energii wykorzystywanych do wytwarzania ciepła systemowego w poszczególnych scenariuszach.



Structure of energy carriers in three scenarios

Considering that both the emissivity, the achievement of energy-efficient status by heating systems and the reduction of dependence on imported energy carriers depend primarily on generating units, hence their replacement becomes a priority

Enterprise transformation

Sector coupling as a sector transformation path

Reasons for which sector coupling is and will continue to develop (intersectoral cooperation)

1. Implementation of the goals of Poland's energy policy until 2040 (the document has already been adopted by the Polish government) enforces sector coupling and cooperation between sectors

2. Green Deal, Fit for 55 and REPowerEU goals for district heating will force a change in the fuel structure in Poland. Changing the fuel structure results in sector coupling (intersectoral cooperation) and ensures the development of such cooperation

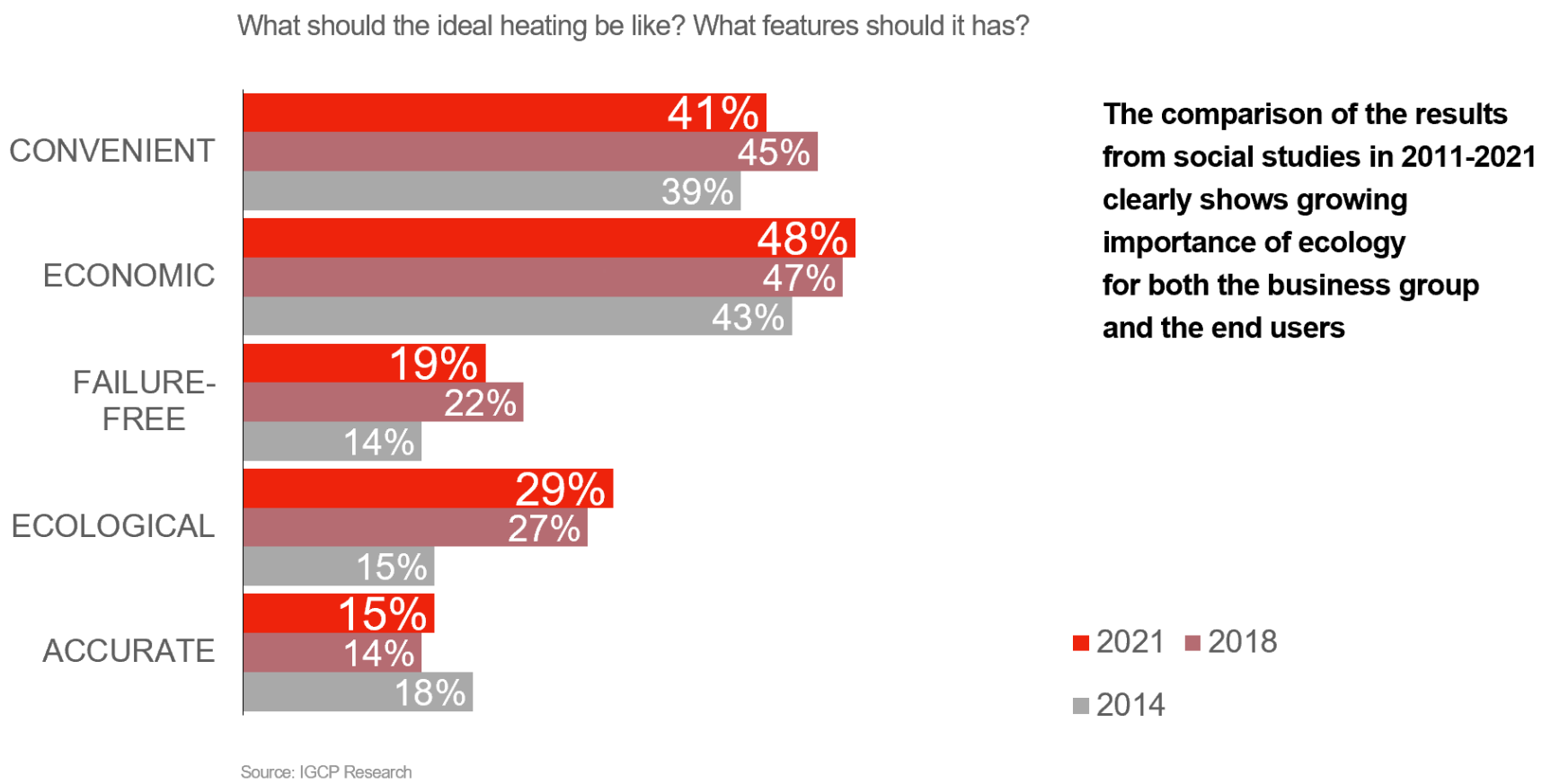
3. The development of new technologies will be conducive to connecting sectors

4. Customer / heat recipient expectations

Sector coupling - areas of cooperation

Cooperation with the power sector
Cooperation with the gas sector
Cooperation with broadly understood industry sector (RES development, Use of waste heat, heat from waste, district cooling)
Cooperation with the housing sector (Adapting the sector to the requirements of technical and energy conditions for new and deeply modernized buildings after 2023)
Education and raising environmental awareness (in this case it is difficult to talk about a typical intersectoral cooperation or classic sector coupling, however, without systemic cooperation with the society of heat consumers, cooperation between the above-mentioned sectors will be at least significantly impeded)

Education and raising environmental awareness
social issue



The comparison of the results from social studies in 2011-2021 clearly shows growing importance of ecology for both the business group and the end users

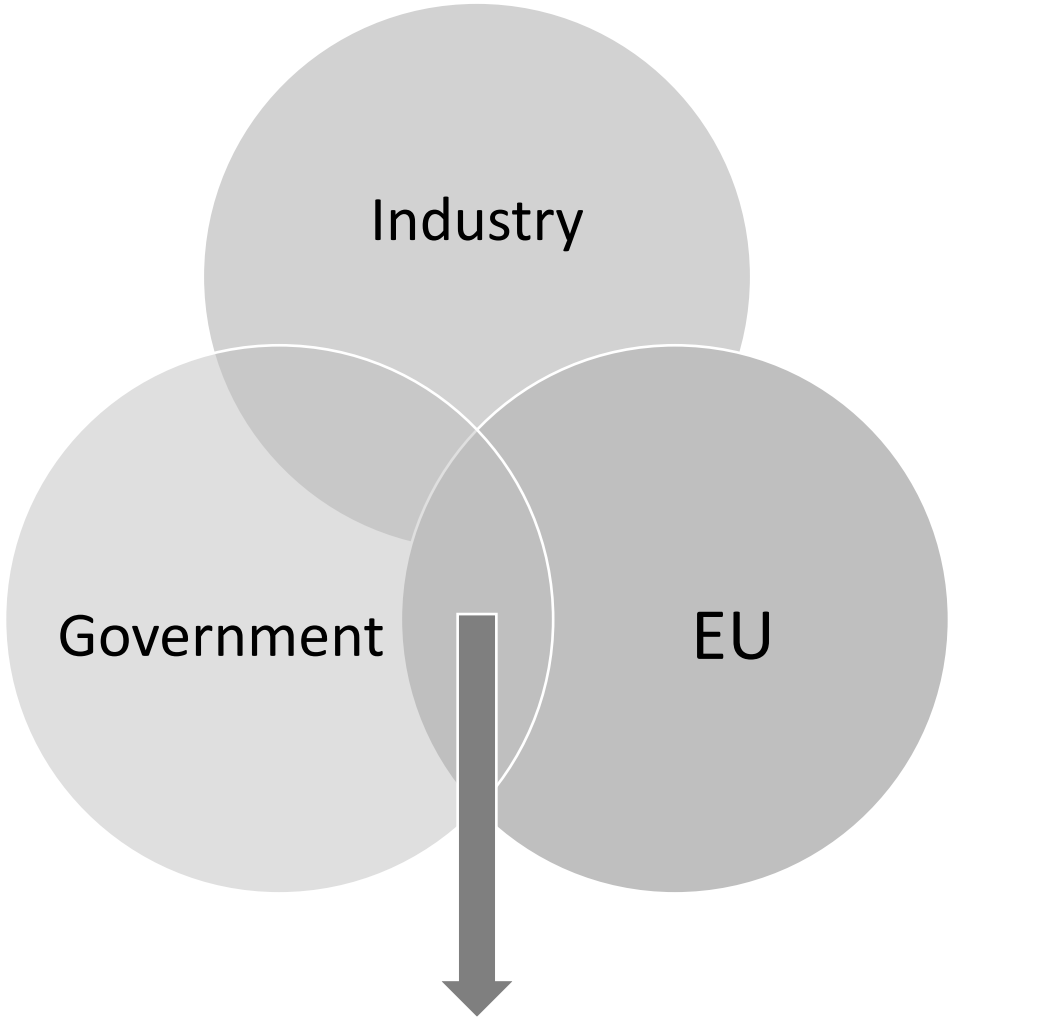
Source: IGCP Research

Roadmap for DHC in Poland

The most important priorities for the DHC road map in Poland		
Implementation of the transformation of the heating sector, i.e. primarily decarbonisation, and maintaining competitiveness with other forms of heat supply	Improvement of the economic condition of companies, because investments will not be possible without meeting this condition	Energy security - which shows that although our companies have a diverse ownership structure, everyone pays attention to overriding issues - also important from the point of view of the national interest.

The results of creating a roadmap for heat (March 2023) carried out as part of the workshop, whose participants were: representatives of the management boards of companies licensed in the heating industry from all regions of Poland, associated in IGCP, representatives of the URE regulator representing the management of regional branches, system heat business environment (suppliers of technological solutions)

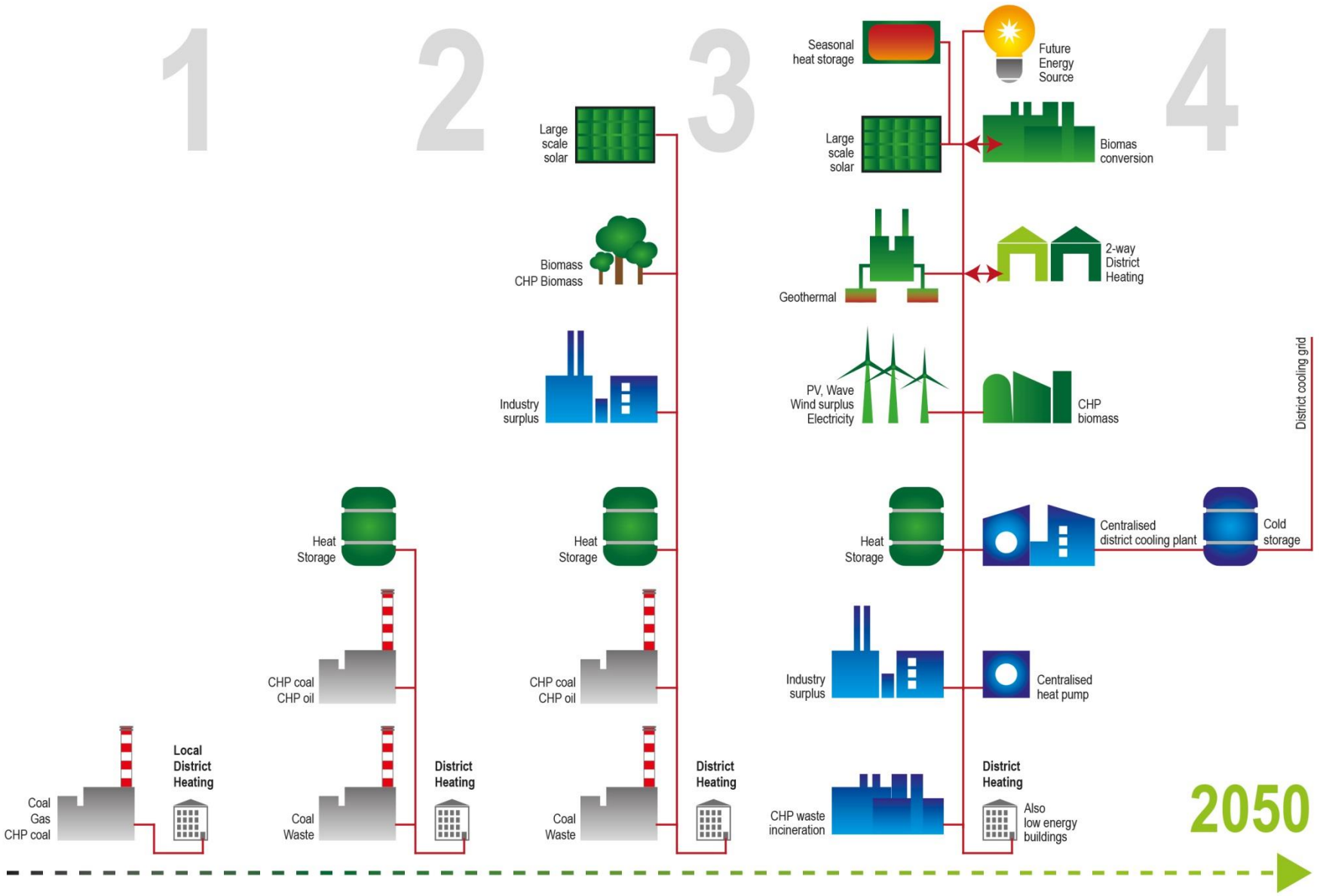
Common area priorities
from three points of view



The transformation of the heating sector is unavoidable

Development from 1G DHC to 4G …

as a way-for transformation and sector coupling and implementation of the roadmap
(through practical implementation of priorities)



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Thank you for your attention

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