

HOW POLISH GOVERNMENTS IMPLEMENTED EPDT I MAIN PROBLEMS

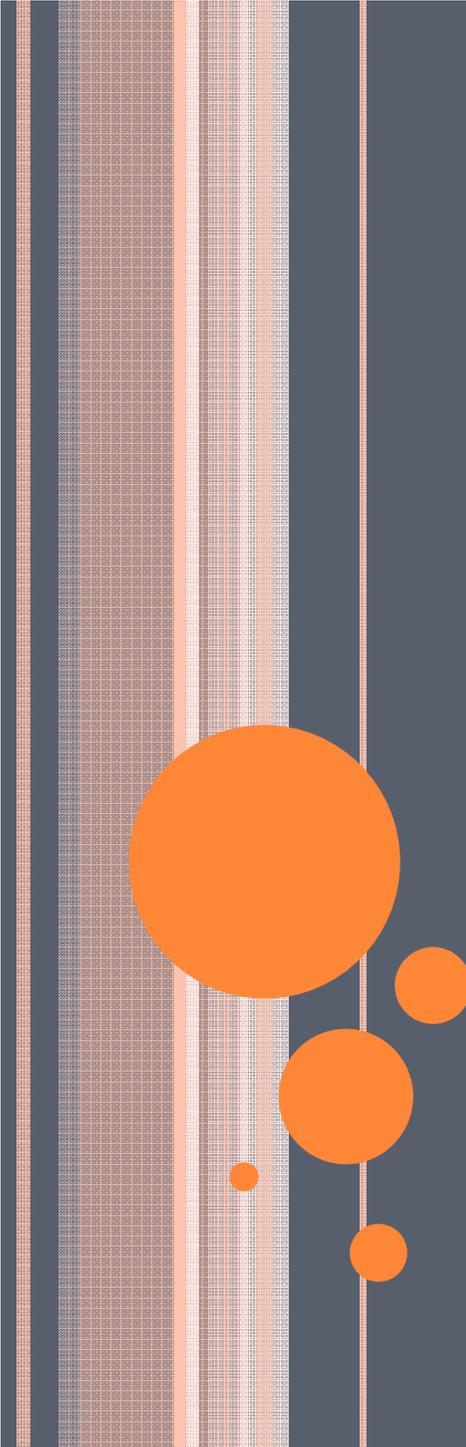
- Implementation of EU directives depends to a large extent on how they affect the influential lobby
- In the case of Polish directives EPBD I and II affect the interest of powerful state energy industry and above all massive private developer lobby. That have numerous links with the administration at all levels



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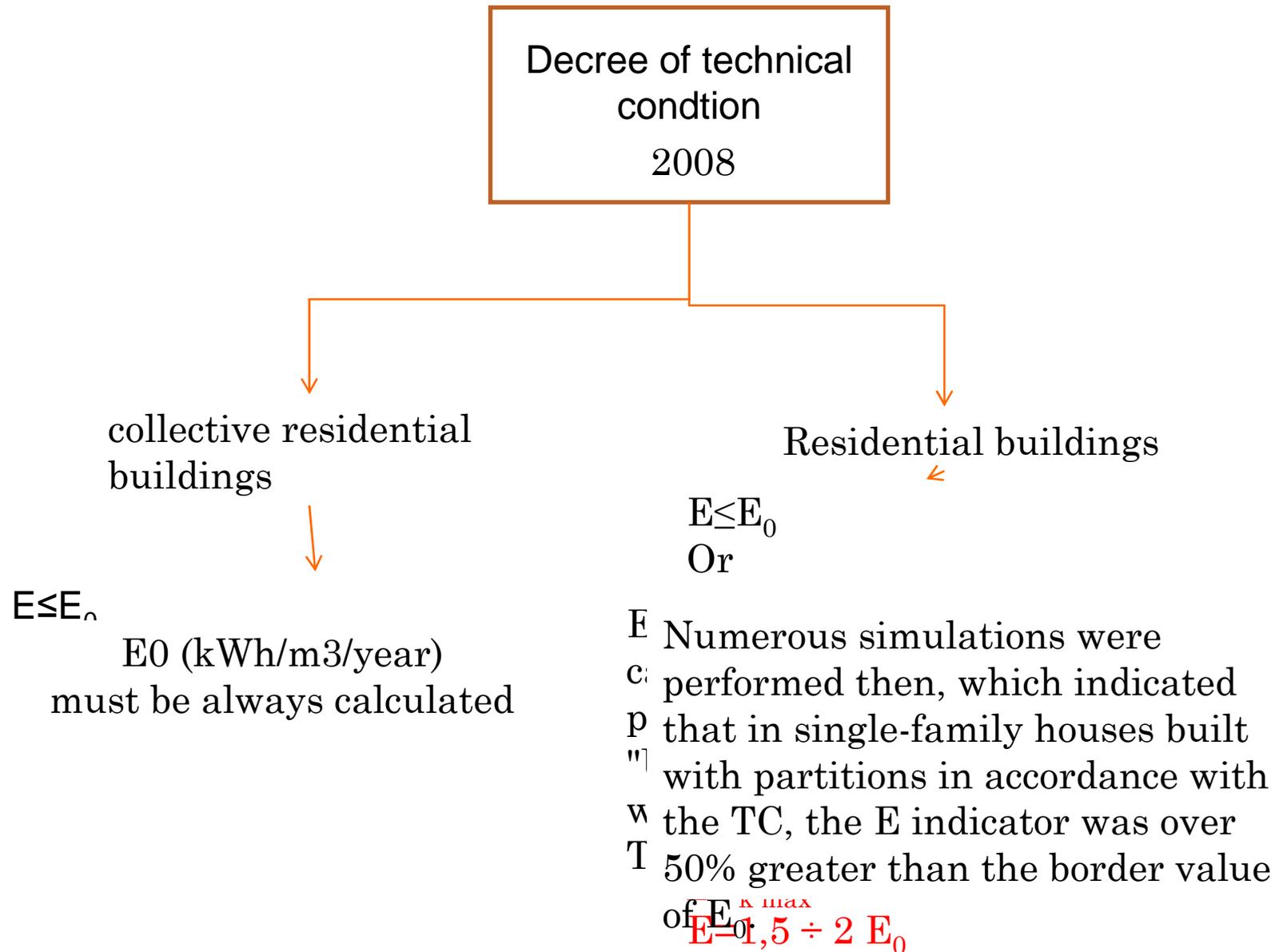
- These influences caused that it is impossible to implement this directives in Poland, because they affect the intrest of Energy and developer lobby.
- EPBD I and Efficent Energy Directives are implemented against their sense.
- Brussels has no appropriate tools to force the government to implement directives in the right way (?)





HOW POLISH GOVERNMENT IMPLEMENT DIRECTIVES

REGULATION ON TECHNICAL CONDITIONS TO BE MET BY BUILDINGS AND THEIR LOCATION



Regulation
on technical
conditions
2008



Residential building



$$EP \leq EP_{\max}$$

or

EP has only informative value

There are no border requirements related

to energy consumption in buildings.

However, there exist reference

values specified at a shockingly high level.

In accordance with §329 point 3 of the TC:

“Maximum” EP values of the annual calculation indicator of demand for unrenewable primary energy for heating, ventilation, hot tap water and cooling, depending on the A/Ve building shape coefficient, amount to:

1/(m² · rok)],

the

in demand

6.



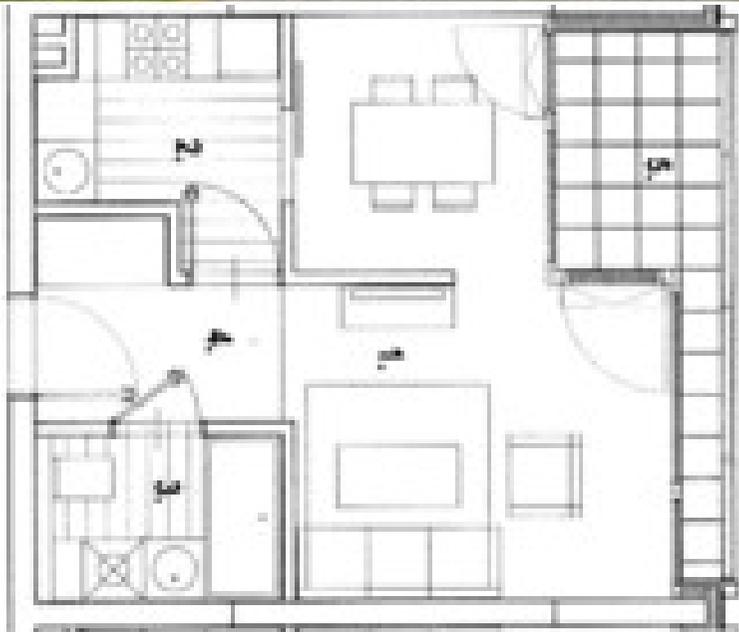
REGULATION ON THE METHODOLOGY FOR CALCULATING THE ENERGY PERFORMANCE OF BUILDINGS



OTHER DEFECTS WINDOWS

- Another disadvantage of the new TC is making the limit on window area contingent upon the heat transfer coefficient higher than $U=1.5[\text{W}/\text{m}^2\text{K}]$.
- With the lowest energy standard for windows in the market amounting to $U_w=1.4[\text{W}/\text{m}^2\text{K}]$.
- The elimination of the limit on the heat demand for heating multifamily buildings means the elimination of restrictions on the surface of glass windows in the fashionable “glass” apartment buildings.





Hausing estate in Warsaw
EP = ???

<http://www.szybko.pl/Warszawa/Wola/mieszkanie/sprzeda%C5%BC/2547787>



No.	Final energy carrier	<i>wi consumption coefficient</i>	
1	2	3	
1	Fuel/source of energy	Fuel oil	1.1
2		Natural gas	1.1
3		Liquid gas	1.1
4		Hard coal	1.1
5		Brown coal	1.1
6		Biomass	0.2
7		Solar collector	0.0
8	Heat from cogeneration ¹⁾	Hard coal, natural gas ³⁾	0.8
9		Renewable energy (biogas, biomass)	0.15
10	Local heating systems	Heat from a coal heating plant	1.3
11		Heat from a gas/oil heating plant	1.2
12		Heat from a biomass heating plant	0.2
13	Electrical energy	Mixed production ²⁾	3.0
14		Systems ^{PV4)}	0.70

1) combined production of electrical energy and heat,

2) refers to power supply from an electrical energy network in the system,

3) in the case of lack of information about energy performance parameters of network heat from the heating plant (cogeneration), the value of $H = 1.2$ is accepted,

4) photovoltaic cells (production of electrical energy from solar energy)

Note: thermal solar collector - $wH = 0.0$

ANOTHER MISLEADING

- As presented in Table 1, the accepted value of " w_j " is largely misleading as regards the environmental consequences of the use of various types of fossil fuels, particularly in terms of the volume of CO₂ emissions. Probably, this is aimed at promoting coal fuels in Poland.
- This method of promotion is effective, and more and more newly-built buildings are powered with a hard coal with a misleading name – Ekogroszek (Eco-pea), thus contributing to the devastation of the natural environment.
- However, no " w_j " values for micro wind turbines were specified.



HEATING

- In comparison with c standard, certain modifications were introduced, consisting in including twice the temperature difference between the ground temperature and outside temperature.
- For the first time as $U_{gr} = U_{equiv,bf}$, in accordance with PN-EN 12831:2006,
- for the second – as $b_{tr,i}=0,6$. One $b_{tr,i}$ value is accepted for the whole heating season, not in accordance with EN ISO 13790, where monthly $b_{tr,i}$ values are accepted.
- This causes about 35% underestimation of ground heat losses. Moreover, modifications were introduced to the formula for V_x infiltrating air in mechanical ventilation systems, which makes it impossible to calculate it



$$H_{tr} = \sum_i [b_{tr,i} \cdot (A_i \cdot U_i + \sum_i l_i \cdot \Psi_i)] \quad W/K$$

Tabela 6. Współczynnik redukcyjny obliczeniowej różnicy temperatury b_{tr}

5	Przestrzeń podpodłogowa:	
	a) podłoga nad przestrzenią nieprzechodnią	0,8
	b) podłoga na gruncie	0,6

Jako wartość U_{gr} przyjmuje się ekwiwalentną wartość określoną na podstawie wyliczonych wartości B' oraz U , $U_{gr} = U_{equiv,bf}$.



HOT WATER

- Heat demand for hot tap water was adopted on the basis of design documentation, consumption measurements or values from Table 15 of the *Decree of the Minister of Infrastructure of 6 November 2008 on methodology for calculating the energy performance of residential*
- 35 [dcm³/per 24 hours] of water at 55 ° C for single-family houses.
- **This leads to a huge diversity of demand for heat depending on the method accepted. Design standards assume a three times higher consumption of hot water (110 [dcm³/24 hours]) than the actual use and value from Table 15 of ROC.**



COOLING

- It is assumed that the building has cooling installations if two of its rooms are cooled. There is no template of an energy performance certificate for residential buildings with a cooling installation. The methodology for calculating heat demand was developed based on the monthly method, the EU ISO 13790 Standard.
- **The methodology contains many factual errors, including the change of the power in the Stefan Boltzmann Law $h_r = 4 \epsilon \sigma (q_{ss} + 273)^4$, ROC formula No. (2.28.4)). These errors usually lead to the understated heat demand for cooling in the certificates.**



CHANGES OF PHYSICS LAW

$$h_r = 4\varepsilon\sigma(\theta_{ss} + 273)^4 \quad (2.28.4)$$

gdzie:

ε	emisyjność powierzchni zewnętrznej przegrody,	-
σ	stała Stefana-Boltzmann,	W/(m ² K ⁴)
θ_{ss}	średnia arytmetyczna temperatura powierzchni przegrody i nieba.	°C
α_{se}	współczynnik emisji cieplnej powierzchni przegrody,	W/(m ² K)
U_c	współczynnik przenikania ciepła dla przegrody,	W/(m ² K)
A_c	pole powierzchni przegrody nasłonecznionej,	m ²
h_r	współczynnik zewnętrznego promieniowania cieplnego,	W/(m ² K)
$\Delta\theta_{er}$	średnia różnica temperatur powietrza zewnętrznego i nieba.	°C



ADDITIONAL LIGHTING (DIFFERENT FOR BUILDING USERS, WHAT KIND OF LIGHTING)

- The energy used for lighting is included only for built-in lighting in buildings other than residential buildings (office, commercial buildings), etc.



IMPLEMENTING EPBD II

- In contrast to the EPBD I preparation, where the initial works were performed with wide-ranging public consultations (Energy Conservation Foundation, National Energy Conservation Agency and others), and regulation drafts were published at the website of the Ministry of Infrastructure, which allowed to indicate a distinct mark of the intervention of institutions and organizations opposed to the introduction of the directive.



IMPLEMENTING EPBD II

- The current works over EPBD II are performed solely by the Department of Construction Market and Technology, and there are no published information about the effects of these works.



IMPLEMENTING EPBD II

- The only information of this Directive is:
- *In accordance with the plan of adapting the methodology to appendix No. 1 of the 2010/31/EU directive; corrections related to amending the contents of energy performance certificates; taking into account the current stage of normalization; correction of the existing provisions, taking into consideration their past functioning.*
- *The preparation of the regulation draft was divided into II stages: stage 1 – preparing the concept and assumptions for methodology, until 17 December 2010. **The results of stage 1 have not been published***
- *and stage 2 – preparing the methodology, rules and manner of calculating the energy performance until 15 November 2011.*
- The only sensible reason for latency work on the regulation is to avoid public protest.



IMPLEMENTING EPBD II

- As we not officially known, four tenders have been announced for company to prepare decree for implement directive EC 2010/32.
- Non has been resolved

