Summary of the conference

Clean industrial heat. Electrification scenarios for selected sectors

Agenda

10:30 – 10:40	**Start of the conference** Aleksander Śniegocki, *Reform Institute*
10:40 – 11:00	**Presentation of the main conclusions of the report "Clean industrial heat. Electrification scenarios for selected sectors"** *Bernard Swoczyna, Reform Institute*
11:00 – 11:10	**Comments** Adam Jarubas, *Member of the European Parliament* Paweł Wróbel, *Polish Electricity Association (PKEE)*
11:15 – 12:15	Panel discussion I – **Electrification of industry, the Polish approach** Marcin Dusiło, *Forum Energii* Paweł Lachman, *PORT PC* Klaudia Janik, *Reform Institute* Moderator: Aleksander Śniegocki
12:15 – 12:30	**Coffee break**
12:30 – 13:30	Discussion panel II – **How companies can obtain financing for electrification** Joanna Smolik, *National Development Bank* Michał Popiołek, *Member of the Board of the Responsible Business Forum* Moderator: Marta Anczewska
13.30 – 14:30	**Lunch and networking**

Presentation

Presentation of the main conclusions of the report **"Clean industrial heat. Electrification scenarios for selected sectors".**

Summary of the event

The aim of the conference was to discuss the barriers and prospects related to investments in the electrification of process heat in Polish industry. During the meeting, we presented the conclusions from two publications by the Reform Institute on the electrification of industrial heat – "Clean industrial heat: Electrification scenarios for selected sectors" and "Energising industry #2: Financial aspects of industrial heat electrification in Poland". The publication of the reports provided the backdrop for a discussion on the prospects for electrification, particularly in industries where it is most economically viable due to the high share of medium- and low-temperature heat, as well as on the challenges associated with building business models that enable electrification.

Opening remarks:

The conference began with speeches by special guests: **Adam Jarubas, Member of the European Parliament** (recording) and **Paweł Wróbel, Director of the Polish Electricity Association** (in person).

They emphasised that:

- Decarbonisation of industry in Poland is necessary not only to meet climate targets at EU and national level, but also to maintain its competitiveness.
- Due to the long investment cycle and the imminent arrival of ETS2, action must be taken now to avoid higher costs in the future. However, recent years, including the energy crisis, have significantly increased uncertainty. This does not serve the planning and implementation of long-term strategies in the industry, but they are nevertheless necessary.
- Among the various industrial sectors, the food, paper and parts of the chemical industries have rightly been identified as priorities for electrification. It is important that the Institute has addressed this issue in a comprehensive manner, including a discussion of financial resources. Pathways that these industries can follow can already be identified today.
- Continuing production based on fossil fuels will become increasingly difficult due to rising costs, dependence on imports and risk of losing competitiveness.
- Electrification is necessary, and the use of high-temperature heat pumps should also become a competitive solution within 10-15 years.
- Energy producers face a great opportunity, but also a challenge – to provide up to twice the volume of electricity in a competitive manner. Stability and predictability are necessary to achieve this goal.
- For electricity producers, the European Union's decarbonisation policy is, on the one hand, a huge challenge and, on the other, an opportunity to increase their role. Electrification means an increase in sales and the role of electricity in the economy. According to EURELECTRIC, for the EU to achieve its climate goals, **it is necessary to increase the role of electricity in the economy from 23% of final energy consumption today to 35% in 2030 and 61% in 2050.** This means that electrification needs to be significantly accelerated, but it also poses the challenge of increasing the volume and ensuring the stability of supply of such a large amount of decarbonized electricity.

- Electrification requires a stable regulatory framework that will facilitate companies' access to both commercial and public financing, as well as ensure the predictability of energy prices.
- Without these elements, the transition will be more difficult and slower, which may weaken the position of Polish companies on the global market.

Summary of the panel: "Electrification of industry, the Polish approach"

- **Selected sectors.** Marcin Dusiło from Forum Energii noted that the data clearly indicate the great potential to electrify the food industry, similarly to the steel industry (through electric arc furnaces). Steel is sensitive to carbon leakage outside the EU because it is a durable, high-density product and therefore easy to transport. Recycled steel, remelted in electric furnaces, is a reliable alternative in terms of price, but it is not suitable for every application, as even small admixtures of other metals, such as copper, disqualify it from certain high-quality applications. In addition, electrified syngas plants are already being tested in Germany and the Netherlands for use in 'big chemistry'.
- **A change in mindset.** The panel participants agreed that the barrier to the electrification of industry in Poland and the widespread use of heat pumps for process heat production is the lack of information about ETS2 and belief that this mechanism will not come into force, which delays investment decisions. Entrepreneurs are convinced that gas-based heat sources will remain competitive and do not see the predicted increase in fossil fuel prices. A change in mindset and the development of energy management skills in companies is needed. Similar qualifications should be sought among consultants and analysts who advise companies on cost optimisation. At the same time, participants in the debate admit that installing a heat pump is a challenge, as it often requires the reconstruction of a significant part of the plant.
- **Regulatory assistance**. Industrial investments should be facilitated by removing obstacles. For example, the support mechanisms available to energy-intensive enterprises currently exclude public aid for investments undertaken by a special purpose vehicle established by an energy-intensive enterprise, as this SPV is not considered an enterprise eligible for aid. It is also necessary to prepare support programmes from various sources and to ensure that aid mechanisms are complementary rather than mutually exclusive.
- **Permitting**. Lengthy formal procedures for the installation of own generation RES sources further hinder Polish companies from taking active steps towards electrification.
- **Cost-effectiveness**. According to the price paths presented in the presentation, the cost-effectiveness of electrification increases after 2040. Today's high share of network charges and other additional charges in electricity bills means that heat pumps are only cost-effective in applications with a COP of 3-4 and above. The most important factor affecting the cost-effectiveness of electrification is how the total electricity charge is calculated. At the same time, industry can benefit from the revolution in photovoltaics and battery energy storage. These are becoming cheaper, and their combination can give a plant independence for a certain period of time, and thus energy security.

- **Technologies**. Electric boilers consume a lot of electricity compared to heat pumps, which means that entrepreneurs who decide to use them will fall into the trap of high operating costs, just like those who use natural gas. Klaudia Janik noted that electric boilers should be treated as peak loads, activated during periods of renewable energy generation surpluses and very low electricity prices. According to Paweł Lachman, in some industries, such as food and beverage, it is better to combine cooling with heating. Heat pumps have a technological limitation to a temperature of approx. 200°C (the exact temperature depends on the application) and the availability of heat recovery, so they are not a solution for processes requiring high-temperature heat.
- **Lack of strategy**. Paweł Lachman emphasised that Poland lacks an electrification strategy showing the inevitability of investment, which means that industry, especially smaller companies, are not investing in heat pumps, for example. At the same time, he noted that the European Commission is preparing an electrification strategy (Electrification Action Plan), which is to be published in early 2026.

Summary of the panel: „How companies can obtain financing for electrification"

- **The availability of low-interest loans** for decarbonisation, especially for energy efficiency, is very high. However, the problem is the low flexibility of subsidy and loan programmes, whose terms and conditions are prepared well in advance and often fail to keep pace with the rapidly changing reality.
- **Interest in subsidy programmes** is often lower than expected due to a lack of awareness, especially in smaller companies, and their resistance to borrowing. In addition, the loan risk has increased and even preferential loans are counted towards the total debt of companies, which has a negative impact on companies' interest in this form of support.
- **The fluid boundaries between the programmes** of BGK, NFOŚiGW and WFOŚ make it difficult for potential beneficiaries to understand which programmes can help them.
- **EU funds do not support the expansion of production capacity.** With a few exceptions, it is not possible to obtain EU funding to increase the scale of production, as this would result in an increase in total emissions. EU funds are mainly committed to energy efficiency, for which funding can be obtained very easily.
- **An important source of EU funds for entrepreneurs is the Recovery and Resilience Plan (KPO).** Money from loans can be allocated to renewable energy sources, energy efficiency, energy management, and the construction of electricity or heat storage facilities in cooperation with renewable sources. If decarbonisation is achieved through the electrification of heat generation, this is definitely eligible.
- **The direction of the transition is currently determined by EU funds.** This can be seen in the heating sector. However, the inability to effectively accumulate public aid is often a barrier. Where, for example, operational support is provided, e.g. for the construction of a biogas plant, the challenge is to combine this with a guaranteed repurchase price.

- **New support instruments.** From the point of view of the financing institution, any tool that reduces the risk of the project is desirable. The Reform Institute proposes the development of new mechanisms of financial operational support (OPEX) for companies that have decided to invest in electrification, e.g. in the form of unilateral contracts for difference. It is important that the introduction of a public aid mechanism in the area of energy prices does not disrupt the functioning of the market.
- **Lessons from mature markets.** Joanna Smolik from National Development Bank (BGK) noted that, in accordance with the new EU rules on state aid for companies (CISAF), any support should be proportionate. In her opinion, Poland should follow the example of solutions that have been successfully implemented in mature markets.
- **Cogeneration still popular**. She also pointed out that there are still many entrepreneurs interested in gas cogeneration, but it is becoming increasingly difficult for these projects to meet the emission standards contained in the terms and conditions of support instruments.
- **Knowledge depends on the size of the company.** Michał Popiołek pointed out that, according to research on entrepreneurs' awareness, there is a large knowledge gap between large companies and small and medium-sized ones, which often do not understand the information provided by bankers. Small entrepreneurs are often unaware of both ETS2 and taxonomy.
- **RES works.** He noted that one of the first wind farms in Poland, built 16-17 years ago, is still operating today largely with the same components and, thanks to good maintenance, offers 96% availability. It has undergone two refinancings during this time, and the cost of electricity production from this farm is €17-20/MWh. This shows that renewable energy, with the right approach to investment, is a guarantee of low prices.
- **Deregulation is not (yet) working.** The EU's deregulation initiative has not yet yielded any concrete successes. It is important to introduce specific facilitations and solutions committed to a rapid increase in the share of RES in the energy mix.