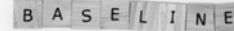


Possible scenarios for the IED reform in Ukraine



BUSINESS
as USUAL



B A S E L I N E



1 CONSERVATIVE

- Legislation **adoption and partial implementation** of the Directive 2010/75/EU
- Transition period, real actions to reduce industrial pollution are **suspended/not implemented**

2 BASIC

- **Real implementation** of the reform according to the Directive 2010/75/EU
- Full implementation of the legislation (in force and planned to be adopted as of 2022) as well as adopted strategies and undertaken intentional commitments, yet with **delays**

3 OPTIMISTIC

- **Real implementation** of the Directive 2010/75/EU (including BATs) in the announced (shortest) terms
- Coordination of the processes of eco-modernization and coal-phase out in power generation in 2035-2040
- Coke production reduction by 2050, transition to renewables

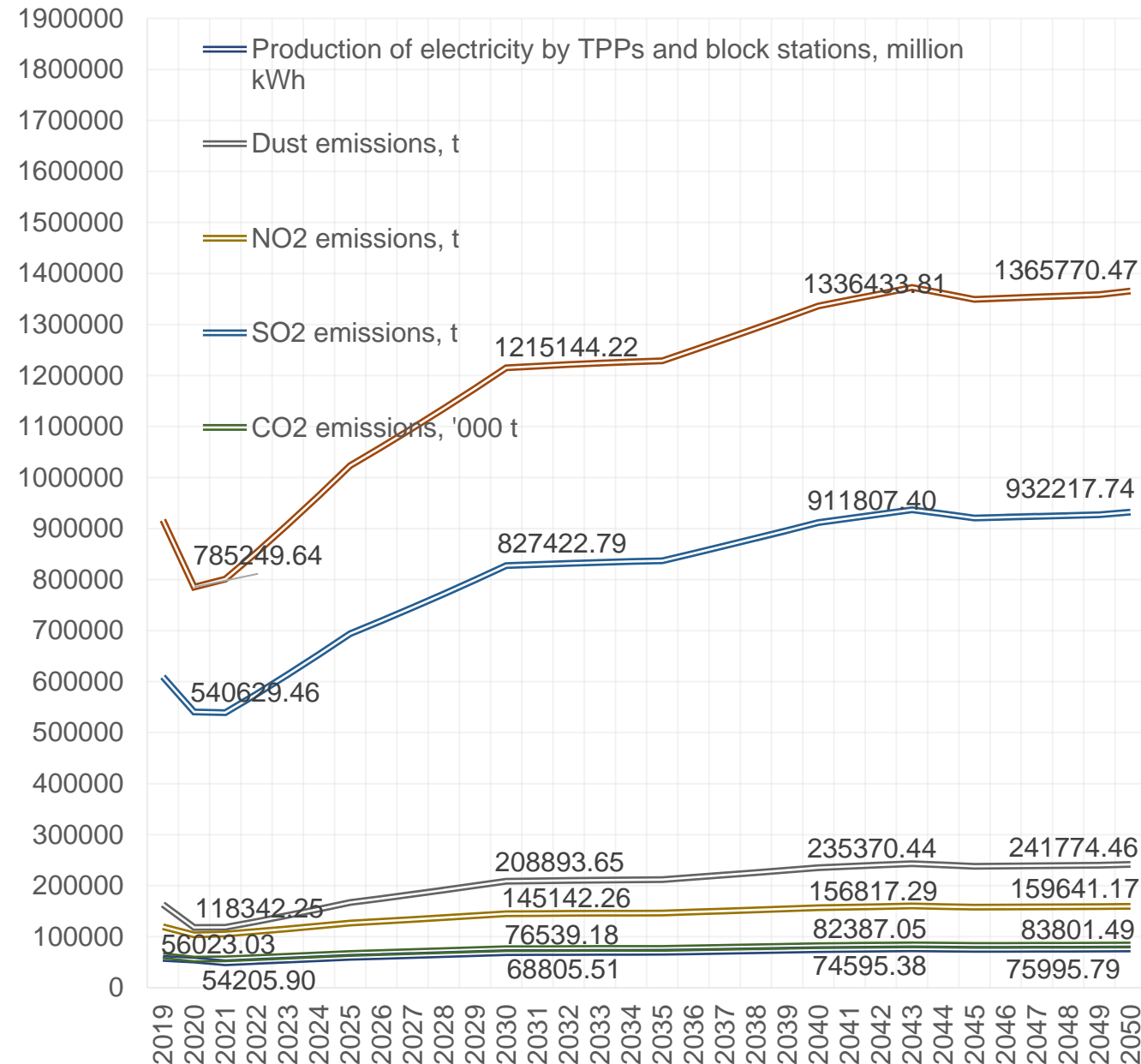
- IED Law adopted in 1-2 years after the war, secondary legislation postponed indefinitely
- NERP remains not implemented due to a lack of financing
- Coal sector still supports TPPs, and the coke production supports metallurgy
- RES share will probably increase to 25% in 2035 and to 32.5% in 2050
- As the economy after the war will probably grow, the emissions in the energy sector will increase as well

Pros:

- No additional investments for eco-modernization needed, and no (or minimal) interventions in business activities by the government

Cons:

- CBAM impact on the UA industry
- Subsidies in the coal sector will continue
- Dependence on fossil fuels and their imports/extraction
- Negative environmental and health impacts
- Violation of the Energy Community Treaty and the AA
- Negative political and economic consequences, esp. for the EU accession





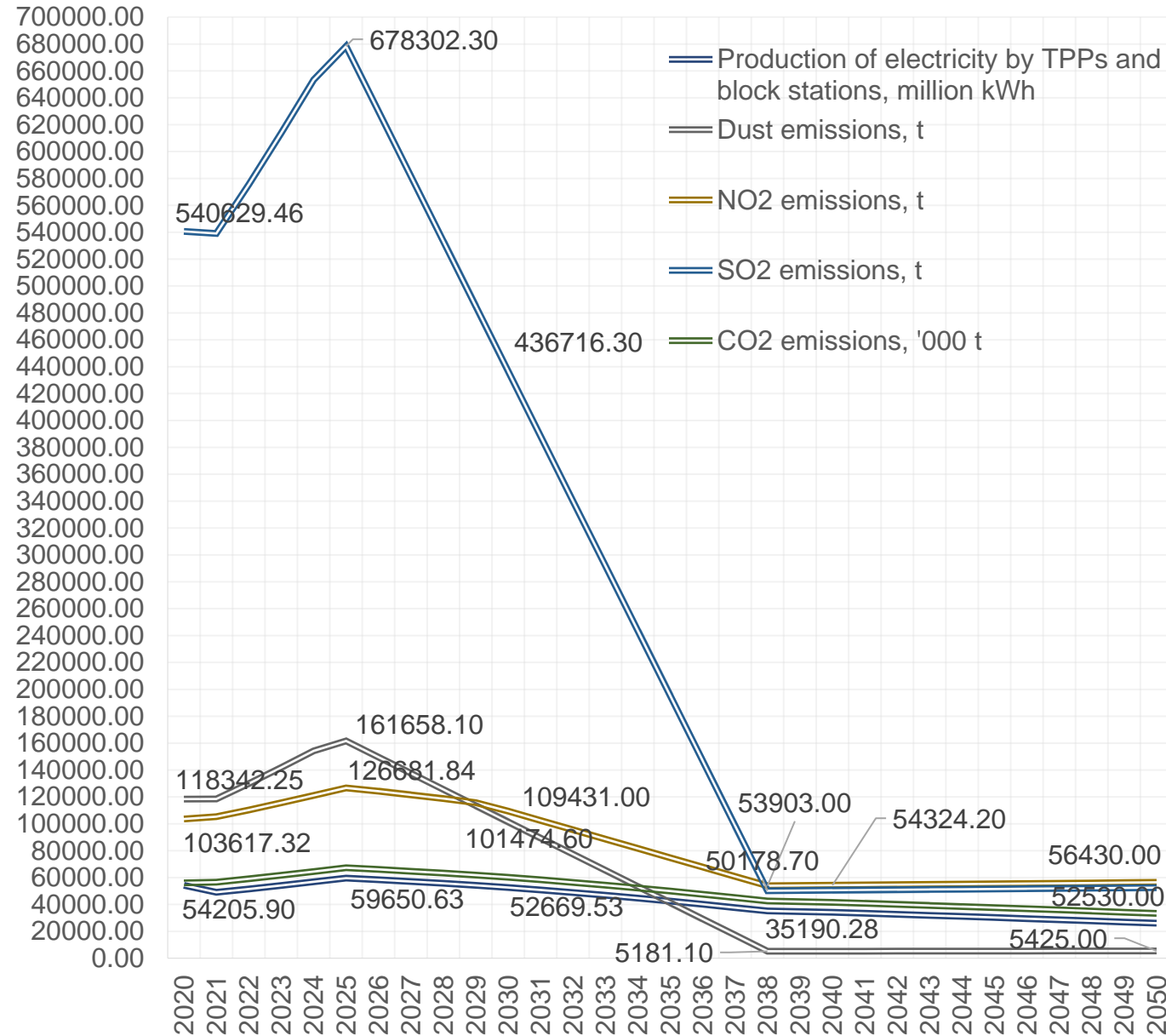
- IED Law adopted in 1-2 years after the war
- NERP postponed for 5 years, but full implementation provided
- 7-15 years of transition period for BATs
- 30-35% emissions reduction in coke industry by 2050 (due to modernization and production cuts)
- By 2025, power generation structure is close to scenario 1, and after 2025, the share of coal TPPs reduced and substituted by RES

Pros:

- More friendly implementation schedule
- More time for investments, modernization and launching financial mechanism of the NERP
- Full implementation (but delayed) of the Directive 2010/75/EU

Cons:

- Delayed BATs implementation will cause negative environmental and health impacts (including climate change)
- Burden of subsidies to coal mines, as well as public health consequences due to air pollution





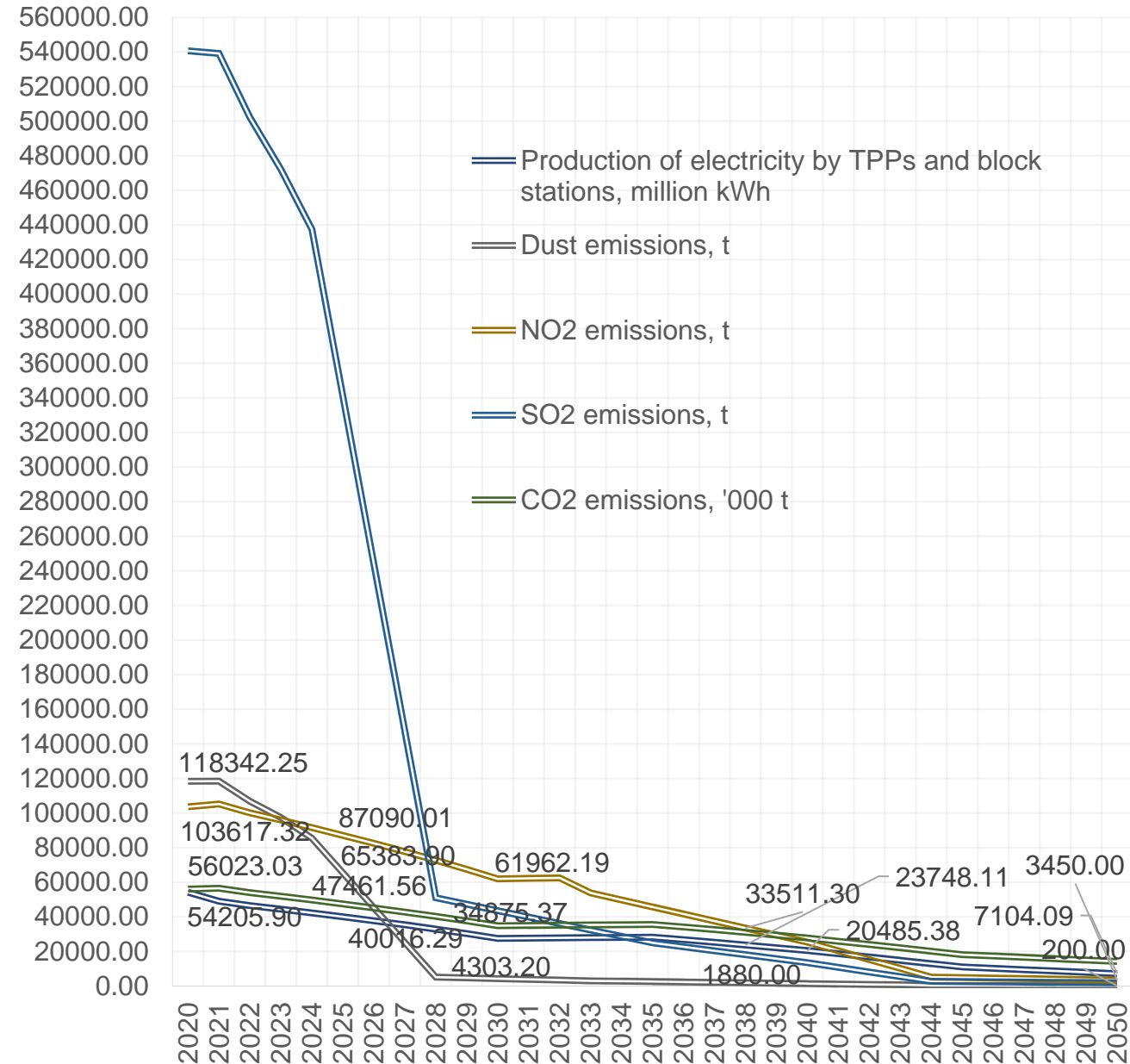
- IED Law adopted in the first half of 2023, implementation of the Directive 2010/75/EU starts after the war is over
- Part of coal-fired TPPs will install abatement equipment in the coming years, part of TPPs will be substituted by RES
- Full coal-phase out in energy sector during 2045-2050
- RES share in power generation will reach 50% in 2050
- Some of coke batteries are modernized, some are gradually decommissioned, a general reduction by 90% in 2050

Pros:

- EU accession, Energy Community and NERP commitments completed
- Minimizing negative impacts from the industrial pollution
- Energy security and resilience
- Competitiveness of the Ukrainian industry in terms of energy efficiency and carbon intensity

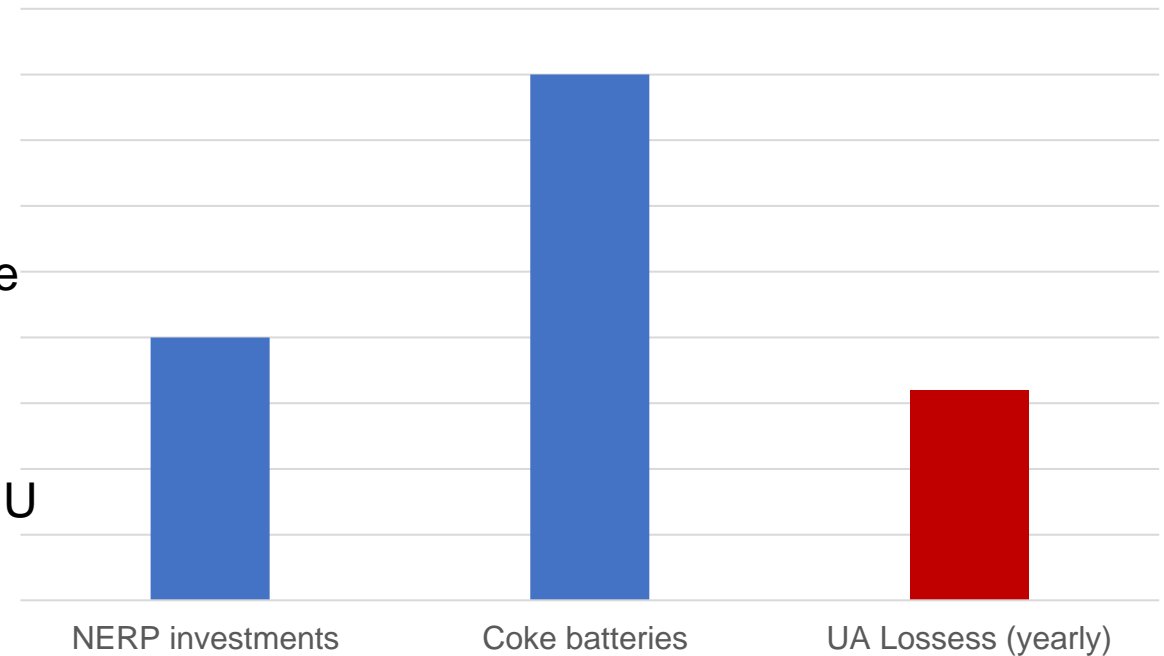
Cons:

- Much of investments needed, financial burden for businesses, people and the state budget



Investments for modernization

- CAPEX volumes under NERP estimated by the National Academy of Sciences of Ukraine at over **4 billion EUR** for the complete implementation period
- CAPEX volumes for the construction of new coke batteries under the Directive 2010/75/EU limits estimated at **2 to 3 billion EUR** or **7-8 billion EUR** according to the updated NDC



In the third scenario, the investments for eco-modernization **can be half as much**. Instead, the funds can be redirected to RES, electric steelmaking technologies etc.

NB! Losses for Ukraine related to emissions of coal-fired power plants amount to 3.2 billion EUR each year (CREA)

Social and Economical Impact

Employment and budget revenues

	Conservative	Basic	Optimistic
Coal TPPs	No change	Reduction	Significant reduction
Coal production	No change	Reduction	Full reduction
Renewables	Small increase	Increase	Significant increase
Coke industry	Increase	Small increase	Significant reduction



But! Closing unprofitable coal mines **will save about EUR 130 million annually**

Conclusions

- The choice of scenario **cannot be based only on economic benefits/loss**
 - People's life and health, safe environment and resilient energy sector must be a priority
 - EU countries implemented the Directive 2010/75/EU gradually, **Ukraine does not have that much time**
 - There was a lack of consensus and motivation in the reform even before the war. At the same time, **recovery gives a chance to make a "technological leap", and the EU candidate status leaves no space for compromise** in the implementation of European legislation
 - During the active phase of the war, it is not possible to implement the reform, but **it is possible to prepare the basis for its implementation in the post-war period**
-
- If the war ends in 2023, and the sufficient support for recovery will be provided, the **optimistic scenario**, including eco-modernization measures, can be implemented on schedule or with a slight delay of 1-3 years
 - In case if the war will continue for 1-2 years or longer, the Directive 2010/75/EU can be implemented according to the **basic scenario**, which is less desirable, but generally acceptable, since it provides the achievement of most of the goals, but in the longer term





Recommendations

- Ukraine should **continue work on the draft law** "On Integrated Prevention and Control of Industrial Pollution", choosing one of its versions (6004 or 6004-2)
- Attention should be paid to **the synchronization of goals and deadlines** provided for by various strategic documents (updated NDC, NERP, Concept of Industrial Pollution Policy Implementation, draft 2030 Energy and Climate Plan, etc.)
- Develop **effective financial instruments** to support green transition, foresee several different sources and financing mechanisms. Carry out preliminary calculations for various financial instruments and compare its results.
- **Increase awareness of wider audiences** about the need to carry out ecological modernization of enterprises, the benefits and advantages to be achieved as a result, as well as the fact that **each of the parties (government, businesses and general public) have to take part of the financial obligations**





Recommendations



- Consider **revising certain conditions of the NERP**: adjustments to the list of power units for planned installation of abatement equipment, taking into account both the destructive consequences of war and the prospects of decarbonization
- For **the coke industry**, it is necessary to conduct **an inventory of production capacities and assess their condition** after the war, determine the feasibility of restoration as compared to new steelmaking technologies without coke
- Introduce programs for **professional (re)training of personnel in the energy sector**, in particular in the coal and coke-chemical industries, where jobs reduction will occur as a result of the green transition

Thank you for your attention!