

# New beginnings at 30

Can the EBRD leave behind fossil gas to become a bank fit for our future?



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# New beginnings at 30: can the EBRD leave behind fossil gas to become a bank fit for our future?

The European Bank for Reconstruction and Development (EBRD), with its 30 years supporting economic transitions, as well as long-term experience with promoting investments in energy efficiency and sustainable renewables, is in an ideal position to set the benchmark for how public finance institutions should support the decarbonisation of the economy.

But so far, it has not utilised this potential. The EBRD has failed to provide a clear message to its countries of operation and their industries that the transition to a zero-carbon economy is not only inevitable, but needs to start immediately. Instead, the Bank is repeating its past mistakes – only this time, keeping the door open for fossil gas investments instead of coal. This comes at the cost of countries' preparation for the inescapable changes in the energy and other sectors that climate change will demand. It will even further increase the costs that transition countries in particular will pay to address this crisis.

According to Bankwatch's analysis of the EBRD's energy-related projects from 2014 to 2020, the EBRD has invested increasingly more in renewable energy sources in the last few years. This is in line with the Bank's Energy Sector Strategy (ESS) for 2019 to 2023, which aims to decarbonise energy systems through increased investments in renewables, energy system integration, the switch from coal to other sources and electrification in its countries of operation. This is a necessary and welcome step in the right direction.

However, more investments in renewables alone cannot lead to decarbonisation: the EBRD also needs to end support for fossil fuels, including fossil gas. This is crucial if the Bank wants to reach a complete alignment of its activities with the Paris Agreement by the beginning of 2023. It is even more crucial if the Bank wants to make a meaningful contribution to climate change mitigation and adaptation and to long-lasting economic transition in its countries of operation.

This report analyses the Bank's recent energy investments, finding that the EBRD has thus far been a bank of the past – investing in highly polluting fossil gas projects that may become stranded assets and will certainly distract countries from sufficiently investing in energy efficiency and renewables. What we need the EBRD to be is a bank for our future: one that invests fully in decarbonisation, bringing long-term economic stability and environmental health to our communities. Based on our findings, we **recommend** that the EBRD:

- stop financing new oil and gas projects or the rehabilitation of existing facilities.
- divest from companies that hold coal, oil or gas assets themselves or through entities they control.
- demand decarbonisation plans as a condition of investing in or lending to companies which themselves or through entities they control currently rely on fossil fuels for their operations.
- entirely exclude support for large-scale forest biomass.
- support the environmentally and socially responsible decommissioning of fossil fuel projects, including the development of just transition plans for affected regions.
- direct its investments towards demand-side energy efficiency projects and the fast deployment of sustainable forms of renewable energy, mainly appropriately-sited wind and solar, including support to modern and sustainable forms of heating based on renewables.
- direct its technical assistance and climate funds to be used for pilot projects in seasonal heating storage, waste heat utilisation, integrated energy efficiency and renewable district heating and electrification of municipal infrastructure and provide assistance to countries, municipalities and industry in the development of zero-carbon plans.
- ensure that projects in the renewables portfolio comply with the EBRD's Environmental and Social Policy and EU law, and avoid supporting unsustainable projects like hydropower projects with impacts on sensitive areas, or waste incineration projects.

# Background

Adopted in December 2018, the EBRD's latest Energy Sector Strategy (ESS) (2019-2023) has guided the Bank's attempts at decarbonising energy systems. In addition to positive investments in renewables, energy system integration, and electrification, the EBRD has also fully phased out support for coal and upstream oil exploration, and partially phased out support for upstream oil development projects. However, the Bank decided to continue to support the gas sector until the strategy period ends in 2023, relying on the myth that fossil gas is a transitional fuel on the path toward decarbonisation.

This position is misguided. The International Energy Agency (IEA), previously strongly in favour of fossil gas, dismissed the idea of fossil gas as a transitional fuel in its latest net-zero emissions roadmap for the energy sector.<sup>1</sup> The IEA report concludes that new investments in fossil fuels extraction must end and a radical reduction in fossil fuels, including gas, is needed in the next decade if we are to reach the Paris Agreement aim of limiting global warming to below 1.5 degrees Celsius. This is especially important for the EBRD, as the Bank previously relied on the IEA's projections (among others, the IEA Sustainable Development Scenario was mentioned in the previous ESS) when aligning its activities with climate goals.

This report analyses the EBRD's energy-related operations<sup>2</sup> across the first two years of the new ESS (2019-2020). This initial period of the ESS's implementation is also compared to the previous ESS implementation period (2014-2018) to assess whether the Bank has been successful thus far in investing in the

<sup>&</sup>lt;sup>1</sup> International Energy Agency, <u>Net zero by 2050: a roadmap for the global energy sector</u>, May 2021.

<sup>&</sup>lt;sup>2</sup> 'Energy-related operations' refers to the EBRD sectors 'power and energy utilities' and 'natural resources', plus transport sector projects with obvious links to fossil fuels. No transport projects with this profile were identified in 2018, 2019 or 2020, but there were some identified in previous years and they are thus included in the data presented in this report. We have also included some projects from the EBRD sectors 'Depository Credit (banks)', 'Non-depository Credit (non-bank)' and 'Equity funds' that were signed in 2020 and are related to energy operations. We found 26 of these projects. They total approximately EUR 130 million, and among them there are no projects that we categorised as 'fossil fuels' according to Bankwatch's categorisation process, but only projects that were categorised as 'renewable energy sources', 'energy efficiency', or 'unclear'.

decarbonisation of the energy systems in its countries of operation. (See Annex 1: Methodology for a detailed explanation of this analysis).<sup>3</sup> We find that despite an average increase in renewables investments as a percentage of energy-related spending, the share of support for fossil fuels across both the previous ESS period and the current one has remained constant.

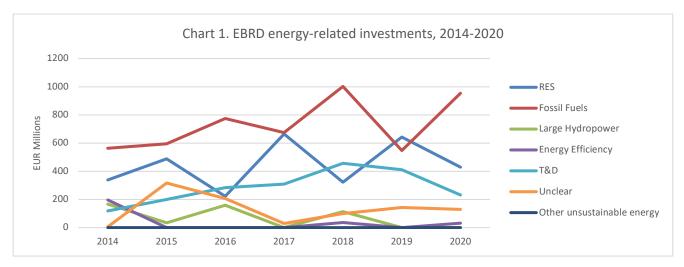
This analysis of the EBRD's data is supplemented by case studies on three key countries where the EBRD has continued to invest in fossil gas and one sector that is key to decarbonisation. From power plants in Uzbekistan, to extensive new storage and transmission infrastructure in Cyprus, to Romania's stranded pipeline, to upgrading and constructing new heating systems, we show that the EBRD's plans for fossil gas are set to lead to fossil fuel lock-in and stifle climate action. We have also provided recommendations (above) on how the EBRD can end support for fossil gas in order to lead its countries of operation into an economic transition for the future.

### **Findings**

The EBRD's list of signed projects shows that it lent EUR 3.51 billion for energy-related projects in 2019 and 2020<sup>4</sup>. Of those investments, 43 per cent were dedicated to **fossil fuels** (EUR 1.5 billion).

This is consistent with the previous ESS period (2014-2018), where fossil fuels also made up 43 per cent of the EBRD's energy-related funding (EUR 3.6 billion).

The second highest amount of fossil fuel lending in absolute terms from 2014 to 2020 occurred in 2020 (EUR 954 million), only exceeded by lending in 2018 (EUR 1 billion).



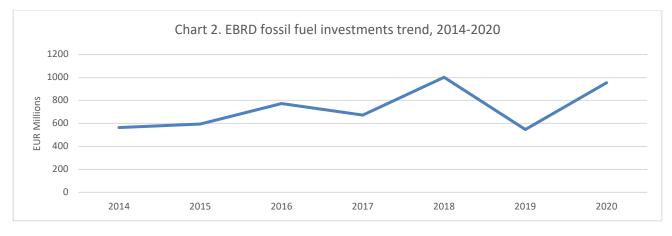
The graph below gives an overview of energy-related EBRD lending since 2014.

On average, EBRD investments in fossil fuels have increased since 2014.

<sup>4</sup> In 2019 the EBRD's investments in energy-related projects totalled EUR 1.74 billion; in 2020, EUR 1.77 billion.

<sup>&</sup>lt;sup>3</sup> This is the fifth such analysis Bankwatch has conducted. For our previous analyses of the EBRD's lending for energy-related operations, please see the following publications: CEE Bankwatch Network, <u>Tug of War: Fossil fuels versus green energy at the EBRD</u>, May 2012; CEE Bankwatch Network, <u>The weakest link - Progress in greening EBRD energy portfolio (2010-16) still undermined by lending for fossil fuels</u>, November 2017; CEE Bankwatch Network, <u>EBRD renewable investments finally matched its fossil fuel investments in 2017 – So why is the bank's draft Energy Strategy still fixated with gas2</u>, 18 October 2018; CEE Bankwatch Network, <u>EBRD Fossil Fuel Investments Undermine Progress on the Green Economy Transition</u>, June 2020.

After 2019, in which renewables investments (EUR 642 million) for the first time exceeded fossil fuels investments (EUR 547 million) in the EBRD's portfolio, there was a reverse trend in 2020: fossil fuel lending (EUR 953 million) amounted to more than double the Bank's lending for renewables (EUR 428 million).



In 2020, more than 70 per cent of fossil fuel financing went to major national coal and gas companies and electric utilities for liquidity and refinancing purposes. However, these operations lack transparency: in some cases it is not clear how the companies will spend the money given. Operations that received the most fossil fuel financing in 2020 are presented in the table below.

Table 1. EBRD operations related to fossil fuels<sup>5</sup> with the highest amounts of financing (2020)

Operation Name	Country of Operation	EBRD Finance (EUR)	BWN Sub-category
GOGC: Essential Infrastructure Support	GEORGIA	217,000,000	Gas
STEG Liquidity and Restructuring Facility	TUNISIA	200,000,000	Gas
Public Power Corporation liquidity response Greece 2	GREECE	135,680,000	Mixed
KazTransGas Liquidity Support	KAZAKHSTAN	89,998,099	Gas
VISP: Electricity Support Facility	UZBEKISTAN	81,600,000	Gas

For example, the EBRD awarded the Greek Public Power Corporation (PPC) a loan of EUR 160 million in 2020. As the Bank's project summary document did not clearly state how the money would be spent,<sup>6</sup> we split it according to PPC's energy mix, assuming that EUR 135.68 million (the amount presented in the table above) supported fossil fuels and the remainder hydropower plants.<sup>7</sup>

Concerning lending for new construction of fossil gas infrastructure, the highest amount in 2020 went to the Liquefied Natural Gas (LNG) Floating Storage and Regasification Unit (FSRU) in Cyprus (EUR 80 million). (See the case study on Cyprus on page 11.)

In 2019, two fossil gas operations made up almost 50 per cent of all fossil fuels investments (EUR 213 million for the construction of the 900 MW Combined Cycle Gas Turbine - CCGT at the Talimarjan power plant in Uzbekistan and EUR 50 million for the development of the Midia Gas Development Project in Romania). (For more information on Uzbekistan, see our case study on page 9.) Corporate financing was

<sup>&</sup>lt;sup>5</sup> This is according to Bankwatch's own classification and not the EBRD's. Please see Annex 1: Methodology for more information about how these projects were classified.

<sup>&</sup>lt;sup>6</sup> European Bank for Reconstruction and Development, Public Power Corporation liquidity response Greece, 24 April 2020.

<sup>&</sup>lt;sup>7</sup> PPC relies on fossil fuels and hydropower for its electricity production. Therefore, we have separated the amount PPC received from the EBRD according to the PPC's energy production per primary energy source (fossil fuels and hydropower) that was obtained from the PPC company yearly report for 2020. We applied the same methodology for the EBRD <u>Montenegro EPCG</u> loan (total investment of EUR 50 million).

primarily focused on bond investments (EUR 93 million for the Polish KGHM Group, EUR 120 million to the Naftogaz of Ukraine PJSC).

In comparison, during the previous ESS, most of the Bank's fossil fuel investments supported oil and gas upstream and midstream segments. In 2017, almost two-thirds of fossil fuel investments were in just one project – the TANAP section of the Southern Gas Corridor, which received no less than EUR 417 million out of the total EUR 674 million in financing for fossil fuels. In 2018, the EBRD followed with EUR 250 million for the TAP section of the Corridor. (One section of the Southern Gas Corridor, the BRUA pipeline in Romania, is discussed in our case on page 14).

Previously, the Bank financed some transportation projects that primarily served the oil and gas industry but labelled them as 'transport'. There were no transportation projects of this type from 2018 to 2020.

Financing for **renewables** made up 26 per cent of all energy-related financing from 2014 to 2020. When compared with the previous ESS period (2014-2018), renewables financing has experienced a positive trend under the new strategy (2014-2018: 24 per cent, 2019-2020: 30 per cent). The Bank's average annual investments in renewables in the period from 2014 to 2018 were EUR 407 million, while the average for the period from 2019 to 2020 is EUR 535 million.

However, 2020 saw a decrease in the total value of renewables financing in comparison to 2019 (2020: EUR 428 million; 2019: EUR 642 million). The peak year for renewables was under the previous ESS, in 2017 (EUR 664 million) when the Bank concentrated on solar projects in Egypt.

In 2020, the individual renewables projects that received the most money were solar plants in Greece (EUR 75 million) and Uzbekistan (EUR 50 million).

As was noted in our 2020 analysis of EBRD investments,<sup>8</sup> 2019 was the first (and so far only) year in which renewables investments exceeded fossil fuel investments. Over 60 per cent of this went to solar projects in Kazakhstan and another 26 per cent to solar projects in Ukraine.

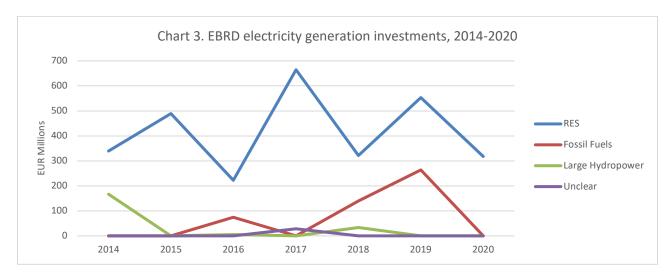
### **Electricity generation capacity**

Under the current ESS (2019 and 2020), most of the energy-related investments that generated new electricity came from renewable sources – renewables made up 77 per cent of these investments in 2019 and 2020.

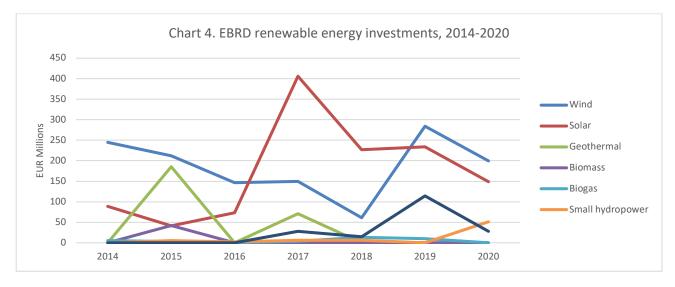
2020 was a landmark year, with 100 per cent of the EBRD's electricity generation operations signed coming from renewables. However, in 2019 the Bank provided generous amounts of funding for fossil fuel-based electricity generation, and as a result, fossil fuels comprise 23 per cent of all investments in new electricity generation capacity during the current ESS period.

In the previous period (2014 to 2018), investments in renewables made up 82 per cent of new electricity generation, while fossil fuels and large hydropower made up 9 per cent and 8 per cent, respectively.

<sup>&</sup>lt;sup>8</sup> CEE Bankwatch Network, <u>EBRD Fossil Fuel Investments Undermine Progress on the Green Economy Transition</u>.



Overall, from 2014 to 2020, 80 per cent of the EBRD's electricity generation financing went towards renewables and 13 per cent towards fossil fuels.

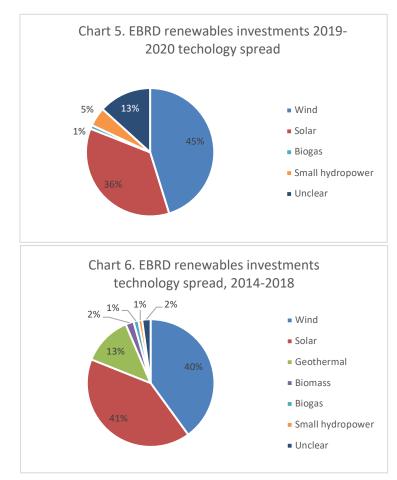


### **Renewable energy investments**

Wind and solar have emerged as the two primary renewable technologies funded by the EBRD. Since 2014, the overall amounts of financing for both of these technologies have been similar, with solar making up 43 per cent (EUR 1.29 billion) and wind 41 per cent (EUR 1.21 billion) of the Bank's renewables financing<sup>9</sup>.

<sup>9</sup> From Chart 4, we have left out the usual 'unclear' category for better readability. It is Bankwatch's own category that includes projects that could not be individually identified due to being financed through commercial bank intermediaries.

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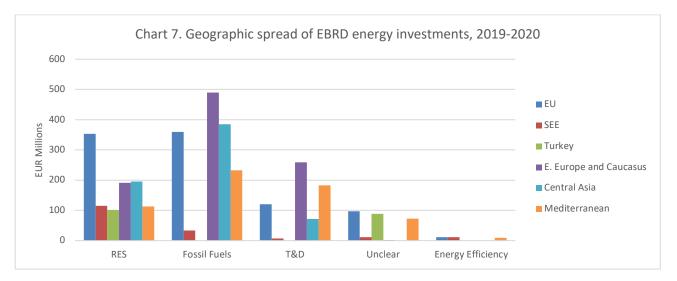


Wind alone made up almost half of all renewables financing in 2019 and 2020 combined. This is mainly due to four significant wind projects (ranging from EUR 49 million to 75 million each) in Egypt, Kosovo, Poland and Ukraine in 2019.

This is a change from 2017 and 2018, when solar was in the lead.

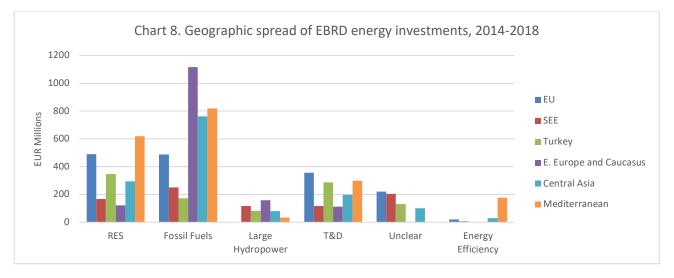
There was no direct financing for hydropower, geothermal or biomass in the EBRD's energy financing during 2019 and 2020, and financing for biogas remained low. However, this data may not represent all geothermal, biomass, or small hydropower financed by the EBRD. Instead, it may be the case that a higher proportion have been financed through commercial bank intermediaries and could therefore not necessarily be individually identified.

### **Geographic spread of investments**



Under the current ESS, EU countries have received the most support for renewables. In second and third place are Central Asia and Eastern Europe and the Caucasus. These areas have jointly received almost the same amount as the EU. When compared with the previous ESS period, Eastern Europe and the Caucasus saw a significant increase in support for renewables. In the past two years, this region received almost

double the amount of support it received from 2014 to 2018. The other three regions (South-eastern Europe (SEE), Turkey and the Mediterranean) had the lowest levels of support in the 2019-2020 period, each just over EUR 100 million.



Since 2014, the EU has been the greatest recipient of renewables funding from the Bank.

In addition, since 2014, almost all regions received more financing for fossil fuels than for any other project category. Eastern Europe and the Caucasus received the most generous support for fossil fuels in both periods. The Mediterranean and Central Asia closely followed in the period from 2014 to 2018. In the period from 2019 to 2020, the EU and Central Asia took second and third place.

### Conclusions

In its energy-related operations in the last six years, the EBRD has invested more in fossil fuels than in renewables. Of the EUR 11,894 billion lent by the EBRD for energy projects between 2014 and 2020, fossil fuel operations made up 43 per cent, followed by renewables (excluding large hydropower plants), which made up 26 per cent. Lending for fossil fuels remained high for the entire period from 2014 to 2020 and even increased in 2020.

The Bank's strategy to decarbonise the energy sector seemed off to a promising start, with a record amount of renewables investments in 2019. In fact, in 2019 lending for renewables surpassed that for fossil fuels for the first time. However, in 2020, fossil fuels again took the lead. Renewables lending furthermore reversed its previous upward trend in 2020, with a decline in total lending. In fact, funding for renewables decreased by more than EUR 200 million, while lending for fossil fuels doubled in comparison to 2019 levels. However, 2020 was the first year that renewables made up 100 per cent of the new electricity generation in the Bank's portfolio.

These findings show that the EBRD's lending in the energy sector has made strong progress towards decarbonisation in the area of energy generation. However, this has been undermined by its continued support for fossil fuels and for fossil-fuel dependent utilities. The EBRD's steps to increase renewables are commendable, but in order to become a bank for the future, investments in fossil fuels must completely end.

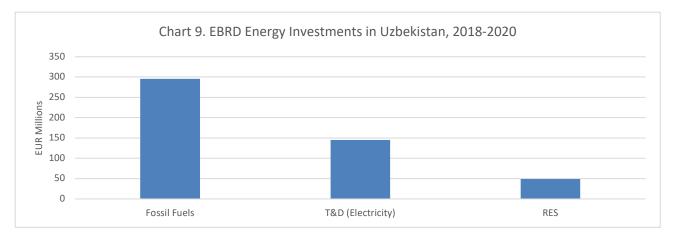
# Undermining a decarbonised future in Uzbekistan

The EBRD's activities in Uzbekistan reveal a key contradiction in its ESS: it proactively supports Uzbekistan's carbon neutrality while simultaneously investing in fossil gas-based power plants that will release large amounts of  $CO_2$  into the atmosphere, as well as methane from fugitive emissions. Although the EBRD claims these modernised plants reduce greenhouse gas emissions, this is only true if they are considered in comparison to coal, oil or older gas plants, and not if they are compared to renewable energies. Furthermore, the fossil gas investments are likely to be economically unviable if Uzbekistan follows through with EBRD-supported decarbonisation plans, and they ignore the vast potential in renewable sources. In Uzbekistan, the Bank seems to be caught between an out-of-date vision for the country's future and a forward-looking one.

Fossil fuels remain the primary source of electricity production in Uzbekistan: fossil gas accounts for 85 per cent of electricity production<sup>10</sup> with the remainder from oil, coal and large hydropower.<sup>11</sup> Uzbekistan only started incentivised renewables production in 2019,<sup>12</sup> and aims for 25 per cent of the total electricity generation to be from renewable resources by 2030.<sup>13</sup>

In 2021, the EBRD developed a roadmap<sup>14</sup> for the low-carbon transition of Uzbekistan's electricity sector. It recommends ending the construction of new fossil gas power plants by 2030 with complete decommissioning by 2050, and intensive development of renewable energy and electricity storage systems, accompanied by regulatory and market reforms with the introduction of a carbon pricing mechanism. In April 2021, the government of Uzbekistan and the EBRD signed<sup>15</sup> a memorandum of understanding on cooperation to achieve the carbon neutrality of the Uzbek energy sector by 2050.

However, the EBRD's current approach to energy investments in Uzbekistan is characterised by an extensive focus on fossil gas development. In the period from 2018 to 2020, the EBRD signed two fossil fuel loans totalling almost EUR 300 million.



<sup>10</sup> International Energy Agency, <u>Uzbekistan energy profile</u>, April 2020.

<sup>&</sup>lt;sup>11</sup> International Energy Agency, <u>Uzbekistan energy profile</u>; Ministry of Energy of the Republic of Uzbekistan, <u>Concept Note for ensuring electricity</u> supply in <u>Uzbekistan in 2020-2030</u>, 30 April 2020.

<sup>&</sup>lt;sup>12</sup> LexUz On-line, <u>'Law of the Republic of Uzbekistan on the use of renewable energy sources'</u>, 21 May 2019.

<sup>&</sup>lt;sup>13</sup> LexUz On-line, <u>'Постановление Президента Республики Узбекистан Об утверждении Стратегии по переходу Республики Узбекистан на</u> <u>«зеленую» экономику на период 2019 — 2030 годов</u>', 4 October 2019.

<sup>&</sup>lt;sup>14</sup> Ministry of Energy of the Republic of Uzbekistan, <u>A Carbon Neutral Electricity Sector in Uzbekistan - Summary for Policymakers</u>, accessed 11 June 2021.

<sup>&</sup>lt;sup>15</sup> Alisher Kalandarov, '<u>EBRD set to help Uzbekistan achieve carbon neutrality'</u>, bne INTELLINEWS, 28 April 2021.

In 2019, the EBRD signed<sup>16</sup> a EUR 213 million loan for the state-owned company JSC 'Uzbekenergo' to construct an additional 900 MW of combined-cycle gas turbines at the existing Talimarjan Power Plant, located in the Southern Kashkadarya region. The project is co-financed with the Asian Development Bank, which is investing an additional USD 450 million. According to the environmental and social impact assessment (ESIA)<sup>17</sup>, the project will result in the emission of 2,363,130 tonnes of CO<sub>2</sub> equivalent (CO<sub>2</sub>-eq) annually. The estimated carbon intensity of the new unit is less than 370 grams (g) of CO<sub>2</sub>-eq per kilowatt hour (kWh), which is significantly below the average carbon intensity of power production in Uzbekistan (673 gCO<sub>2</sub>-eq/kWh). However, these are additional, new emissions, at a time when absolute cuts are needed.

In 2020, the EBRD signed a EUR 81.6 million loan for the working capital and operational liquidity of subsidiaries of the Uzbekistan state power generation company JSC 'Thermal Power Plants' that is in charge of gas-fired power generation in Uzbekistan, and is the owner of Talimarjan and Syrdarya Power Plants.

Furthermore, the EBRD is planning new fossil gas investments in Uzbekistan. In 2021, the EBRD approved<sup>18</sup> a USD 200 million loan to the private company FE 'ACWA Power Sirdarya' LLC to construct and operate a 1,500 MW combined-cycle gas-fired power plant in the Syrdarya region of Uzbekistan. The project is co-financed with the Asian Infrastructure Investment Bank, German development finance institution DEG, the OPEC Fund for International Development and some commercial lenders.

The project should enable the closure of four out of the ten units at Syrdarya thermal power plant by 2030. Nevertheless, the project documentation states that even after replacing the old units, the total cumulative emissions will still increase by 468,000 tonnes per year. In other words, 40 per cent more electricity will be generated than currently, with 5 per cent more greenhouse gas emissions. This type of relative improvement may have been welcome in previous decades, but today, strong absolute cuts in greenhouse gas emissions are needed.

Some private investors have also taken an interest in financing fossil gas in Uzbekistan. Recently, Uzbekistan's Ministry of Energy signed a USD 1.2 billion deal<sup>19</sup> with the Dutch-registered company Stone City Energy to construct and operate a 1,560 MW gas power plant for a period of 25 years.

These power plants will result in  $CO_2$  emissions during combustion, but also in methane leaking during the production, transport and use of fossil gas. Current methane emissions in Uzbekistan are estimated<sup>20</sup> at 902 kilotonnes, which is 1.3 per cent of global emissions, mostly from the gas sector.

Not only will these new gas projects increase greenhouse gas emissions, but they will also lock Uzbekistan into fossil fuel use and crowd out investments in renewables. Sixty per cent of the EBRD's energy investments in Uzbekistan signed from 2018 to 2020 have gone towards the support of fossil gas rather than investments in the significant potential of renewable sources of energy in the country (transmission and distribution: 30 per cent, renewables: 10 per cent).

<sup>&</sup>lt;sup>16</sup> European Bank for Reconstruction and Development, <u>Talimarjan Power Project</u>, 24 August 2018.

<sup>&</sup>lt;sup>17</sup> UzbekEnergo (for the ADB), <u>Environmental Impact Assessment: Main Report - UZB: Power Generation Efficiency Improvement Project.</u> November 2017.

<sup>&</sup>lt;sup>18</sup> European Bank for Reconstruction and Development, <u>'Syrdarya Power Project'</u>, 12 November 2020.

<sup>&</sup>lt;sup>19</sup> Power Technology, '<u>Stone City Energy to build power plant in Uzbekistan'</u>, 21 April 2021.

<sup>&</sup>lt;sup>20</sup> International Energy Agency, '<u>Methane Tracker Database'</u>, 18 January 2021.

# Cyprus exchanges one energy insecurity for another with EBRD fossil gas investment

The EBRD may have ramped up investments in renewables under its new ESS, but not in Cyprus, despite the high potential for solar energy generation. Despite previously financing solar plants in the country, the EBRD's final operation in Cyprus is in fossil gas infrastructure (the Bank's mandate there ended in 2020, but it will continue to finance existing projects). Unfortunately, the EBRD is supporting a solution to the country's energy insecurity not by financing its independence through decarbonisation and a flexible, renewables-based energy system, but rather by financing its dependence on gas for years to come.

The CyprusGas2EU project consists of the construction of liquefied natural gas (LNG) import, regasification, storage and pipeline infrastructures in Limassol, Cyprus. The objective is to introduce fossil gas to the country for the first time, replacing imports of oil and petroleum products. The new gas infrastructure is also supposed to reduce energy-related costs, whilst at the same time meeting Cyprus's energy mix objectives and reducing  $CO_2$  and other air pollutant emissions. Finally, CyprusGas2EU aims at promoting new regional interconnections.<sup>21</sup> The fossil gas will be channelled on a priority basis to the Vasilikos power station complex run by the Electricity Authority of Cyprus. The thermal power stations that currently run on fuel oil will switch entirely to fossil gas, with the EIB backing the installation of a new 160 MW combined-cycle gas turbine (CCGT) plant with a EUR 76 million loan.<sup>22</sup>

The total cost of the CyprusGas2EU project ranges from EUR 312 million (EIB estimations) to EUR 354 million (EBRD estimations). The funders are the EBRD, the EIB and the European Commission. The EBRD signed an agreement with the promoter on 24 June 2020 and proposed a EUR 80 million loan<sup>23</sup>; the EIB, for its part, signed on 30 November 2020 and will provide a EUR 150 million loan.<sup>24</sup> The rest of the total cost will be covered by the EU through a EUR 101 million grant under the Connecting Europe Facility and by the Electricity Authority of Cyprus through a EUR 43 million equity contribution.<sup>25</sup>

The CyprusGas2EU is the biggest energy-related project financed by the European banks in Cyprus to date, but it is not the first. In 2017, the EBRD provided the country with EUR 10.85 million in loans for the construction of five photovoltaic plants with a total installed capacity of 11.9 MW.<sup>26</sup> The EIB has invested in four other energy projects on the island since 2015, in energy efficiency, oil storage and renewables, for a total amount of EUR 151.5 million.<sup>27</sup>

The carbon footprint of the CyprusGas2EU project was calculated by the EIB and the EBRD as part of their environmental due diligence. In addition to this, an environmental impact assessment (EIA) was carried out by Cynergy, the company responsible for the project. Emissions will be released from the CCGT power plant at Vasilikos Power Station as well as from the energy generation operations of the floating storage and regasification unit (FSRU).

<sup>&</sup>lt;sup>21</sup> European Bank for Reconstruction and Development, 'Cyprus FSRU', 9 August 2019.

<sup>&</sup>lt;sup>22</sup> European Investment Bank, 'EAC VASILIKOS CCGT UNIT 6', 7 February 2020.

<sup>23</sup> Ibid.

<sup>&</sup>lt;sup>24</sup> European Investment Bank (EIB), '<u>Cyprus Gas Import Facility (CYPRUSGAS2EU</u>)', 7 August 2019.

<sup>&</sup>lt;sup>25</sup> Olga Aristeidou, '<u>EBRD supports decarbonisation of energy sector in Cyprus'</u>, European Bank for Reconstruction and Development, 31 July 2020.

<sup>&</sup>lt;sup>26</sup> Svitlana Pyrkalo, '<u>EBRD-financed solar plants come on-stream in Cyprus</u>', European Bank for Reconstruction and Development, 11 May 2017.

<sup>&</sup>lt;sup>27</sup> European Investment Bank, 'Financed projects - Cyprus - Energy', accessed 13 June 2021.

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The EIB estimates the absolute emissions from the CCGT plant at around 500 kt  $CO_2$ -eq per year<sup>28</sup>. Cynergy estimates the absolute emissions from the FSRU's operations to be 172 kt  $CO_2$ -eq per year<sup>29</sup>; the EIB estimates 33 kt  $CO_2$ -eq. per year and the EBRD 15 to 20 kt  $CO_2$ -eq per year<sup>30</sup>. To calculate the relative emissions, the EIB uses the total emissions from the Vasilikos Power Station that are currently created by liquid fuels (heavy fuel oil and gas oil) – 2,521 kt per year of  $CO_2$ -eq – as a baseline and subtracts the emissions that will be generated when this fuel is substituted by fossil gas – 1,762 kt per year of  $CO_2$ -eq. The overall relative annual emissions savings are therefore 726 kt  $CO_2$ -eq<sup>31</sup>.

However, calculations from the EIB and EBRD are often incomplete and in this case the EIB's calculation did not include the methane emissions from gas extraction and transportation, thus making the project look better than it is.

As funders of the project, the banks also tend to minimise the emissions in their analyses by excluding certain elements or comparing projects to untenable, highly-polluting current infrastructure, instead of sustainable alternatives. Gas might be less harmful to the climate than heavy fuel oil but it is not a long-term alternative, and should also be compared to other less polluting options. In this context, the intrinsic unsustainability of gas must be underlined, not its relative benefits.

Cyprus is a unique country from the energy perspective. The island does not produce any primary sources of energy, other than renewables. It is considered a heavily energy-receiving country, as over 90 per cent of its energy comes from imports, and its lack of interconnections with other countries makes its energy system very isolated. For these reasons, the European Commission ranks Cyprus as one of the most vulnerable countries in the EU in terms of energy dependency and security of energy supply.<sup>32</sup>

In 2017, Cyprus generated 91.6 per cent of its electricity from imported oil. Renewable energy sources accounted for 8.4 per cent of the total power generation (415.29 GWh), of which about half came from wind power, with most of the rest from photovoltaic systems and a small amount from biomass.<sup>33</sup>

Cyprus published its National Energy and Climate Plan for 2021-2030 in January 2020. The country has set out a target of a 23 per cent share of energy from renewable sources in gross final consumption of energy for 2030. In the electricity sector, the projected renewable energy share in generation is expected to reach between 15 and 25 per cent for the period from 2021 to 2030. Cyprus has set its indicative contribution to the EU 2030 energy efficiency target at a 17 per cent reduction in primary energy consumption and 13 per cent reduction in final energy consumption compared to the respective projection for Cyprus in the EU PRIMES 2007 Reference Scenario.<sup>34</sup> According to the European Commission, if Cyprus continues with its existing measures, it will miss its 2030 greenhouse gas emission reduction target by 25 percentage points.<sup>35</sup>

<sup>30</sup> European Bank for Reconstruction and Development, '<u>Cyprus FSRU</u>'.

<sup>34</sup> Republic of Cyprus, <u>Cyprus' Integrated National Energy and Climate Plan</u>, Nicosia, January 2020.

<sup>&</sup>lt;sup>28</sup> European Investment Bank, 'Public Environmental and Social Data Sheet - EAC VASILIKOS CCGT UNIT 6', Luxembourg, 16 December 2020.

<sup>&</sup>lt;sup>29</sup> Cynergy, '<u>Μελέτη Εκτίμησης Επιπτώσεων στο Περιβάλλον (ΜΕΕΠ) για την κατασκευή και λειτουργία προβλήτα για τη μόνιμη πρόσδεση πλωτής</u> <u>Μονάδας Αποθήκευσης και Επαναεριοποίησης Υ.Φ.Α. μετά της χερσαίας Υποστηρικτικής υποδομής</u>', 14 August 2017.

<sup>&</sup>lt;sup>31</sup> European Investment Bank, 'Public Environmental and Social Data Sheet CYPRUS GAS IMPORT FACILITY (CYPRUSGAS2EU)', Luxembourg, 11 June 2020.

<sup>&</sup>lt;sup>32</sup> Michael Damianos and Christina Aloupa, '<u>Cyprus: Energy 2019</u>', *Mondaq*, 6 March 2019.

<sup>&</sup>lt;sup>33</sup> Alexandros Aristotelous, Cyprus' Energy Systems & Pathways to 2020 and 2025, University of Strathclyde Engineering, 2018.

<sup>&</sup>lt;sup>35</sup> European Commission, <u>Country Report Cyprus 2020</u>, Brussels, 26 February 2020; European Commission, <u>'Technical information Accompanying</u> the document Report from the Commission to the European Parliament and the Council Preparing the ground for raising long-term ambition - EU <u>Climate Action Progress Report 2019</u>', Brussels, 10 October 2019.

Cyprus has a very strong potential for sustainable renewable energy, especially solar. According to the Global Solar Atlas made by the World Bank, Esmap and Solargis,<sup>36</sup> the island has the highest solar irradiation of all European Union countries, with a global tilted irradiation of 5.85 kWh/m<sup>2</sup> on average.<sup>37</sup> Cyprus had a solar total installed capacity of 113 MW in 2018,<sup>38</sup> or 130.9 W per capita. This is relatively low compared to the EU average (223.6 W per capita) and countries such as Germany (546.9 W), Italy (332.4 W), Belgium (373.2 W) or even Greece (246.9 W).<sup>39</sup> Considering the very high potential for solar power in Cyprus, too few investments have been made in this sector.

Three projects are currently on-course to break the island's energy isolation: EuroAsia, EuroAfrica and EastMed. The first two are multi-terminal high voltage direct-current (HVDC) subsea cables, each carrying a capacity of 2 GW. These projects will play an important role for Cyprus as it will strongly develop the island's electricity connection with Europe's mainland, the Middle East and Africa. EastMed is directly related to CyprusGas2EU, as it consists of a 1,900-kilometre gas pipeline connecting Israel, Cyprus and Greece, contributing massively to the gasification of the island. Since it was put on the Projects of Common Interest (PCI) list of the European Commission, EastMed has drawn a lot of attention due to its scale and potential carbon footprint. One joint NGO report even called it a 'carbon bomb'.<sup>40</sup> The construction of the FSRU combined with the EastMed pipeline and the discovery of Aphrodite in 2011, a significant gas field off the shores of Cyprus, foreshadow a massive future use of gas in the country and the region around it, which is likely to transform the energy system of the island.

The CyprusGas2EU project is promoted with the argument that gas will contribute to the decarbonisation of Cyprus' energy system. However, considering the island's strong potential for renewables' development, investments in gas represent a false solution. The carbon footprint of the project is still high despite its emissions savings, and the integration of the country in new gas routes (e.g. the EastMed pipeline) will likely lead to a wide and ever-growing use of gas in the region. Instead of assisting Cyprus in its green transition, the CyprusGas2EU project has an undermining effect and presents a substantial risk of locking the country into fossil fuel infrastructure for the next decades. In order to meet EU climate and energy targets, Cyprus should focus on developing renewable energy (especially solar) and seek to enhance its electricity connections.

<sup>&</sup>lt;sup>36</sup> World Bank, Esmap & Solargis, <u>Global Solar Atlas</u>, accessed 11 June 2021.

<sup>&</sup>lt;sup>37</sup> For comparison, the second sunniest country of the EU, Spain, has 5.34 kWh/m<sup>2</sup> on average.

<sup>&</sup>lt;sup>38</sup> World Population Review, 'Solar Power by Country 2021', accessed 11 June 2021.

<sup>&</sup>lt;sup>39</sup> EurObserv'ER, <u>'Photovoltaic barometer 2019'</u>, 2019.

<sup>&</sup>lt;sup>40</sup> CCWA, CIEL, CEED, EJES, Climate Risks Horizons, Urgewald, et al., Five Years Lost - How Finance is Blowing the Paris Carbon Budget, 2020.

In Romania, the EBRD's investment in the first phase of the BRUA pipeline already seems to have been a waste of funds. Mired in technical and economic issues, the project, which will transport fossil gas to Romania via Bulgaria and on to Hungary and Austria if completed, has come to a standstill, posing a high degree of uncertainty over its viability. Although the investment was made in 2017, prior to the Bank's current ESS, its outcome should give caution to the EBRD about the future profitability of gas in Europe.

The Romanian gas sector has a long history, as the country was the first to use fossil gas for industrial purposes and began an intensive exploitation of its gas resources after deciding to eliminate its import dependence. Despite the EU's decarbonisation commitments, Romania strives to take advantage of its abundance of fossil gas reserves to become an important player in the European gas market and to develop a new gas hub in the region. The deployment of new gas infrastructure and the exploitation of the Black Sea's gas fields are, according to Romania's National Energy and Climate Plan (NECP),<sup>41</sup> key goals for Romania to ensure the security of supply.

Romania's energy mix is diverse, including all types of resources, from renewables to fossil fuels (coal and gas) and nuclear. According to the draft National Energy Strategy for 2020-2030,<sup>42</sup> fossil gas registered a 19 per cent share in the electricity mix in 2020, but its use for energy production in 2030 is projected to decrease to almost 14 per cent. Another strategic document for the energy sector, the NECP,<sup>43</sup> shows that from 2005 to 2017 the use of fossil gas in the final energy consumption consistently decreased, and the estimates for 2035 show that, despite a small increase in 2025, the use of fossil gas will still remain at 2017 levels. Regardless of this prognosis, a series of major gas projects are planned to be implemented in the next few years, several of them benefitting from being on the EU's Projects of Common Interest (PCI) list of priority projects.

The diversification of gas supply sources is also a topic high on the European agenda, in spite of recent efforts to spur climate ambition. As such, a series of additional gas transmission pipelines are being implemented to diversify Europe's gas supply. One of these is the Southern Gas Corridor, which branches out in Romania through the BRUA pipeline. This pipeline benefits from a considerable amount of financial resources and several regulatory changes made to speed up its implementation.<sup>44</sup> The pipeline attempts to lessen the country's dependence on Russian gas and provide a new export route for future fossil gas exploitation in the Black Sea.

The BRUA pipeline project consists of three phases:

- 1. **Phase I** covers the construction of a 479 kilometre-long pipeline and three gas compressor stations.
- 2. **Phase II** consists of building an additional 50 kilometre-long pipeline and increasing the gas transmission capacities for the interconnections with Hungary and Bulgaria.

<sup>&</sup>lt;sup>41</sup> <u>Planul Național Integrat în domeniul Energiei și Schimbărilor Climatice 2021-2030</u>, January 2021.

<sup>&</sup>lt;sup>42</sup> Ministerul Economiei, Energiei și Mediului de Afaceri, <u>Strategia energetică a României 2020-2030, cu perspectiva anului 2050</u>, accessed 11 June 2021.

<sup>&</sup>lt;sup>43</sup> <u>Planul Național Integrat în domeniul Energiei și Schimbărilor Climatice 2021-2030</u>, January 2021.

<sup>&</sup>lt;sup>44</sup> CEE Bankwatch Network, <u>State Capture - A case study about natural gas exploitation and transportation in Romania</u>, October 2019.

3. **Phase III** entails building an additional 280 kilometre-long pipeline, two new gas compressor stations and the rehabilitation of other existing gas pipelines.

**BRUA Phase I** was completed in November 2020. The Romanian government secured almost EUR 478 million for its implementation, out of which EUR 60 million came from a 2017 EBRD loan.<sup>45</sup> But since its completion, it is not clear if any gas will be transported through it for two main reasons: first, unfavourable legislation regarding offshore gas exploitation in Romania has been implemented, making exploitation financially disadvantageous for gas companies and delaying exploitation in the Black Sea's gas fields; and second, a series of capacity reservation procedures, mandatory processes that need to be carried out to prove the economic viability of the project, failed due to low demand for gas transmission.

Apart from these aspects, the BRUA project has been a topic of discussions between Hungarian and Austrian authorities, after the Hungarian representatives declared that they would not extend the pipeline to reach the Baumgarten gas hub in Austria, meaning that the pipeline would stop on Hungarian territory. This came after the capacity reservation procedures ended in total failure, with no supplier or trader willing to reserve any cubic meter of capacity at the auction organised by the two countries. Another factor that puts the functioning of the Romanian section of the BRUA pipeline at risk is a delay in the construction of the interconnector between Bulgaria and Greece.

**BRUA Phase II** is considered a commercial project and not one that will contribute to the security of supply. It is scheduled to be commissioned in 2023 and has a total cost of EUR 74.5 million. After three failed capacity reservation procedures organised between 2017 and 2020 by Romania's Transgaz and Hungary's transmission system operator FGSZ, a final implementation decision for this project has not been taken yet. These failed procedures show a low demand for gas transmission through BRUA Phase II, which currently makes the pipeline unprofitable for both Romanian and Hungarian transmission system operators.

The completion of Phase II depends on a successful future incremental capacity process according to the provisions set in EU Regulation no. 459/2017, which establishes a network code on capacity allocation mechanisms in gas transmission systems.

**BRUA Phase III** assumes that the transport capacities required for the exploitation of fossil gas from the Black Sea on central and western European markets will exceed the transport potential of the BRUA Phase II. The commissioning date is set for 2026 and the total cost is EUR 530 million. The final implementation decision for this project depends to a large extent on starting the exploitation of the Black Sea's gas perimeters. The offshore gas exploitation sector in Romania was subject to legislative changes in 2018 and 2019 which prompted international gas companies to indefinitely postpone offshore gas investments. Since the legal framework is still at a level considered financially disadvantageous for gas companies, the offshore gas sector remains at a standstill. This makes the investment of millions of euros in gas pipelines, which will most probably become stranded assets, unnecessary.

# Heating: an opportunity for the EBRD to invest in the future

Fossil fuels-based heating is still prevalent across the EBRD region. Coal is gradually being replaced, but a worrying trend has emerged: countries are planning to replace coal with gas, with the excuse that gas is a suitable 'transitional' fuel. Gas-fired combined heat and power (CHP) plants are often seen by governments and utilities as the preferred option to replace coal-fired CHPs across Europe. However, the EBRD has the opportunity to follow its ESS and fully decarbonise heating in its countries of operation by investing in modern, clean and comprehensive solutions.

In 2018, gas supplied 30.2 per cent of heat for residential spaces and water in the EU-27<sup>46</sup>. In the Western Balkans, fossil fuels have a 97 per cent share in district heating, out of which coal and lignite make up around 21 per cent, petroleum products around 9 per cent and natural gas around 67 per cent, with other energy sources only reaching approximately 3 per cent of total production.<sup>47</sup>

Heating infrastructure and the buildings served by gas are often outdated and inefficient, and the rate of deep renovations and other energy efficiency measures along the demand side are insufficient. This locks up the significant potential for businesses and jobs in the areas of renewables and efficient and smart systems. It also deprives people of quality heating in their homes.

The use of fossil fuels, including gas, in the heating sector makes it a significant contributor to air pollution and greenhouse gas emissions. Gas is a fossil fuel with significant carbon intensity – when counting methane leaks during extraction and transportation, gas is often no better than coal.<sup>48</sup> The polluting fuels in combination with poor energy efficiency along heating networks and in buildings affect health,<sup>49</sup> the environment, the economy and society.

In addition, there are entire regions like the Western Balkans where traditionally gas has not been used much – Albania, Kosovo and Montenegro have no access or limited access to gas at present. Individual household heating in this region is primarily reliant on coal, biomass (mostly wood and to a lesser extent pellets), and inefficient electrical resistance heaters. Pushing for gas means investing in hugely expensive infrastructure, in some cases from scratch, along the entire demand chain (transnational transmission and distribution pipelines, gas boiler installations), resulting in stranded assets that would lock these countries into another fossil fuel dependency, as well as import dependency. The lifetime expectancy of these projects is at least 30 years, and on top of that there are typically delays in planning and construction (on average five to ten years at the EU level). This would delay the transition to a zero-carbon economy, because investing in gas slows down the uptake of renewables.

 <sup>&</sup>lt;sup>46</sup> Eurostat, '<u>Share of fuels in the final energy consumption in the residential sector by type of end-use, 2018 (%)</u>', accessed 11 June 2021.
<sup>47</sup> Energy Community, <u>Secretariat's WB6 Energy Transition Tracker</u>, 16, 2021.

<sup>&</sup>lt;sup>48</sup> CEE Bankwatch Network and Observatori Del Deute En La Globalitzacio, <u>Smoke and Mirrors: Why climate promises of the Southern Gas Corridor</u> <u>don't add up</u>, 12 January 2018. 'Extraction and transmission are considered to determine the percentage corresponding to fugitive emissions produced along the gas supply chain. Studies carried out by Alvarez et al. (2012) and Howarth (2014), and the IEA World Energy Outlook of 2017 (IEA2017), establish a limiting fugitive emissions percentage, beyond which gas stops receiving a climate benefit compared to coal. These studies also evaluate extraction and transmission gas supply chain operations. Alvarez et al. (2012) finds this percentage to be 3.2 percent, whereas Howarth (2014) establishes it at 2.8 percent. In the case of the IEA2017, this threshold has been established at 3 percent. Since methane remains in the atmosphere for approximately 12 years (Howarth 2014), climate impact in these studies is determined under the 20 year GWP.' <sup>49</sup> World Health Organization, '<u>Household air pollution and Health</u>', 8 May 2018.

# CEE Bankwatch Network

There is also a growing trend of promoting hydrogen as a cleaner source. However, almost all hydrogen is currently made using fossil fuels, and even renewable hydrogen is pointless to use for heating as it is highly energy intensive compared to using renewable electricity directly. Some estimates find that the amount of green electricity needed to produce green hydrogen is 500 to 600 per cent greater than what is needed for the equivalent number of heat pumps.<sup>50</sup>

For these reasons, the EBRD should no longer support any gas heating projects. Instead, it needs to work with national and local governments, in consultation with relevant stakeholders including civil society organisations, in an open, inclusive and transparent process, to support the development of clean heating projects and ambitious energy efficiency measures. In order to align the heating sector with the commitments made in the Paris Agreement, the EBRD policy for investments in heating projects should be based on the following two pillars:

### 1. Commitment to support only modern and clean heating technologies based on renewables

Governments (central and municipal) are not progressive enough in thinking about how to transform and decarbonise their heating sectors. They tend to focus on 'transitional' fuels like gas or biomass, and technologies like CHP, all of which are 20th century solutions that result in a lock-in to another unsustainable heating source for decades.

Where district heating is appropriate, the EBRD should promote fourth generation district heating technologies<sup>51</sup> that ensure a high level of comfort and cleaner air, and help the countries achieve the climate and energy targets. Such fourth generation technologies are based on advanced low-temperature solutions of different scales, based on renewables and recycled/reused heat, which can be integrated into existing networks or be used for the design of new systems. Where feasible and economically justified, district heating systems should be favoured, as they offer numerous advantages in more densely populated places – scale, efficiency, significant reduction of air pollution. The EBRD should support solutions that are feasible depending on the local potential for renewables (solar, geothermal, electricity produced from renewables like wind), excess heat recovery from industry and services, heat pumps and seasonal heat storage.

Fourth generation heating solutions can be expensive to implement. Systems based on such solutions are decentralised and combine several sources of heat, and require high and long-term investments – it takes several years from planning to full operation. These are some of the reasons that governments do not seriously consider them in their strategic planning processes, and this is exactly where the EBRD can step in with its green finance mechanisms. Over time, these solutions are becoming less costly, and their long-term benefits, including sustainability, no import dependence, clean air, economic growth and the creation of new jobs, greatly outweigh the costs.

There are many existing fourth generation systems around Europe, primarily in Denmark and the Nordic countries, but also Germany, Italy and other countries,<sup>52</sup> that can be used as success stories to be replicated elsewhere. Bankwatch has been involved the ongoing transformation of heating system in Slovakia, supporting the development and promotion of alternative clean solutions to the Novaky coal

<sup>&</sup>lt;sup>50</sup> Fraunhofer Institute for Energy Economics and Energy System Technology, '<u>Green hydrogen or green electricity for building heating?</u>', 14 July 2020.

<sup>&</sup>lt;sup>51</sup> 4DH Research Center, '<u>4GDH definition</u>', accessed 11 June 2021.

<sup>&</sup>lt;sup>52</sup> Euroheat and Power, <u>Case Studies Archives</u>, accessed 11 June 2021.

# CEE Bankwatch Network

CHP plant. This area has a lot of potential for prioritising energy savings in buildings and in the distribution network, and combining locally available renewables including geothermal, solar energy, heat pumps and biomass, together with seasonal heat storage. Bankwatch is also working on examining the potential for clean heating solutions in two Western Balkan locations, Pljevlja (Montenegro) and Tuzla (Bosnia and Herzegovina). These are just a few of the many locations across Europe and the globe where the EBRD's technical and financial assistance could play a crucial role in encouraging and helping decision makers to plan and implement clean heating projects.

What is common for locations where fourth generation district heating already exists is that the full transformation doesn't have to happen overnight: it can be done in stages over a period of time<sup>53</sup>, which also helps to spread out the costs. Municipal authorities and local communities are the key actors that need to work together on the transformation. The EBRD should help by encouraging processes that are inclusive and transparent from the beginning and that allow locals to play an active role through 'energy communities' that pool finances, set up collective ownership of district heating networks, or engage in prosumer activities.

### 2. Assistance in energy efficiency measures that result in significant heat demand reduction

Without 'energy efficiency first', there is no modern and affordable heating, either for district or individual heating. Energy efficiency is crucial for reducing heat demand, which is needed to bring down costs for consumers.

Improving energy efficiency goes hand in hand with implementing renewables-based solutions on the supply side, and needs to be achieved in the same timeframe. Therefore, measures for energy efficiency should be more aggressively pushed, together with the plans to redesign heating solutions. In this context, the EBRD should focus its investments on comprehensive energy efficiency measures that result in a significant and long-term reduction of the heat demand.

These measures should consist of energy efficiency improvements in buildings, especially deep renovation that would lead to substantial energy savings<sup>54</sup> – comprehensive insulation of the facade, floors, roofs, windows, air sealing and improvements in the internal distribution systems, but also protection against heat in summer to reduce cooling demand. They should also cover improvements of heat networks (the pipelines and the grid), in order to allow for integrating renewables and decreasing the temperature in the networks and to lead to further energy savings.

In addition, there needs to be an overall change toward demand-driven systems where the users can actively control their heat consumption. The introduction of metering and consumption-based billing together with adequate control equipment enables consumers to control their heating expenses and motivates them to invest in energy efficiency improvements, as long as they are coupled with appropriate education measures.

<sup>&</sup>lt;sup>53</sup> Helsinki is such an example. See Jussi Uitto, '<u>World's Best City Energy Concept of City Refinery as part of future energy production in Helsinki'</u>, 3 April 2019.

<sup>&</sup>lt;sup>54</sup> For some EU level data and benefits from building refurbishment, see this Climate Action Network (CAN) infographic: CAN Europe, <u>'Decrepit</u> <u>Europe or Renovated Europe?'</u>, 23 April 2021.

# **Annex I - Methodology**

This study's methodology is based on that used in our 2012 report Tug of War<sup>55</sup>. It includes not only those investments classified as energy by the EBRD but also its energy-related natural resources projects.

Furthermore, for the 2020 data we have also included some projects from the following EBRD's sectors which are identifiable as energy-related projects: Transport; Depository Credit (banks); Non-depository Credit (non-banks); Equity Funds; Insurance, Pensions, Mutual Funds, and Leasing Finance. We found 26 of these projects. They total approximately EUR 130 million, and among them there are no projects that we categorised as 'fossil fuels' according to Bankwatch's categorisation process, but only projects that were categorised as 'renewable energy sources', 'energy efficiency', or 'unclear'.

The resulting database consists of a total of 402 operations signed by the EBRD across all countries of operation from 2010 to 2020. The project data was obtained from the EBRD's spreadsheet of signed projects, but we used our own classification of the project categories. We did not include cancelled projects.

In our 2012 study we attempted to screen out unsustainable renewable energy projects from the 'new renewables' category; however, with the growing number of projects, this is less and less feasible. Therefore, the 'renewables' category excludes large hydropower projects but includes other forms of renewable energy, whether they are likely to be sustainable or not. This means that a larger share of renewable energy investments is neither an explicitly positive or negative development in itself, but depends on the type and siting of the projects.

We have not been able to capture the EBRD's complete portfolio of energy investments, among others renewable energy and energy efficiency. For renewable energy, this is because some small projects are financed through financial intermediaries that do not disclose their portfolios, even though they are financed from public money. In addition, energy efficiency is found throughout the EBRD's portfolio, even in non-energy sectors. Therefore, we have counted only energy sector-related energy efficiency projects and do not presume to give a full picture of the EBRD's energy efficiency lending.

Another challenge was in classifying cases where the EBRD has provided financing for large electricity companies that have a mixed portfolio but rely heavily on fossil fuels for electricity generation. We separated and classified these cases according to the energy production per primary energy source that was obtained from the borrower companies' yearly reports on the net power output per primary energy source.

We also had to determine how to classify different bonds that have some kind of a 'green' label, but it is not clear what this means. These cases were primarily in the EBRD's sector Depository credit (banks). We classified these as 'unclear'.

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