

Tracing Reflexive Control Application in the Anti-Shale Gas Movements in Eastern Europe

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Abstract— Energy security and energy diversification have become key components of the European Union's response to the Russo-Ukraine war. While leveraging Green Deal instruments to boost renewable energy investment and replace coal and to some extent nuclear power generation, the Union has not been fully successful in its goals to secure energy independence from Russian energy supplies. The dependency on natural gas persists and has proven many of its critics wrong as the EU is currently importing gas from USA, Algeria, Norway and even Russia through various intermediaries. With domestic natural gas production decreasing, looking back to historic obstructions to developing new sources is justified from a national and regional security perspective. This article studies the anti-shale gas movements in the early and mid-2000s in Eastern Europe, which culminated in almost blanket bans on developing shale gas fields. Looking back at these events through the lens of a type of information warfare called reflexive control finds plausible evidence that such may have been applied in order for Russia to block or delay Eastern European efforts for energy security and energy diversification. Tracking the political behaviour and stances of the anti-shale movement leaders in the early and mid-2000s points to them holding a diverse array of opinions and contemporary positions concerning the Russo-Ukraine war and dealing with Russia in the area of energy today. This suggests that foreign information warfare and information interference could have targeted very basic elements and assumptions in the decision-making processes of civil society and state actors, which do not necessarily depend on their political perceptions of Russia. It is therefore possible to lay out and at least partially confirm a hypothesis that a reflexive control operation that substitutes and modifies such processes with new information concerning exaggerated and manipulated shale gas development risks might have been carried out by foreign state or non-state interested parties.

Keywords— reflexive control, shale gas, energy, information warfare

I. INTRODUCTION

The 21st century has witnessed a significant evolution of information warfare as first the distribution and now creation of information have undergone processes of monumental transformation with the advent of social network services and artificial intelligence. However, theoretical concepts of information warfare strategy remain remarkably robust due to its dependency on human psychological characteristics such as the use of heuristics, biases, stereotypes, processing and perception of information, etc. One good example in lieu of this is the reflexive control type of information warfare – a Soviet-era concept which is now deeply embedded in Russian military and intelligence strategy. Reflexive control involves manipulating an adversary's decision-making process through carefully curated information, leading them to act in a manner advantageous to the manipulator. Even though Russian information warfare has developed throughout the last half a century, this theory has remained remarkably robust and effective, successfully integrating new information technology and information systems warfare without losing its central logoi.

Taking into account the profound negative impact that restraining domestic natural gas production has had on European energy security and energy diversification during the Russo-Ukrainian war, it is thus prudent to hypothesize that external state or non-state actors might have levied reflexive control principles in information warfare against the failed shale gas production in the early and mid-2010s.

Shale gas, heralded as a game-changer in energy politics due to its abundance and the technological breakthroughs in hydraulic fracturing or "fracking," posed both opportunities and challenges for Eastern European countries. Countries like Poland, Bulgaria, Romania, and others were seen as potential new frontiers for shale gas exploration, promising a reduction in dependence on Russian gas imports. However, these plans were met with

Online ISSN 2256-070X

<https://doi.org/10.17770/etr2025vol5.8473>

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fierce resistance from local communities, environmental activists, and political groups, leading to widespread anti-fracking movements across the region.

The late 2000s and early 2010s were a time when the U.S. had demonstrated the viability of shale gas extraction, sparking global interest and investment in this resource. Eastern Europe, with its substantial potential shale reserves, became a focal point for energy companies looking to replicate this success, most notably the leader in shale gas development Chevron. However, the region's political, cultural, and environmental landscapes provided fertile ground for opposition and possible external intervention through information warfare.

II. MATERIALS AND METHODS

A. Hypothesis

The hypothesis in this study is that state or non-state actors have implemented a reflexive control campaign against Bulgaria, Romania and Poland in the early 2010s when these countries attempted to explore and develop shale gas deposits.

In order for this hypothesis to be tested, the authors look into the ideological and political attitude of the leading anti-shale opinion makers in the four countries towards the Russian Federation and Russian energy supplies. Reflexive control campaigns by definition transmit information that is ingrained in the decision-making model of the adversary. On the basis of NATO's former chief Rasmussen's reasoning and declarations, the authors assume that state or non-state actors would have transmitted information that shale gas is environmentally harmful, which might have been integrated in the decision-making process of European opinion leaders of all political and ideological spectrums.

Therefore, the hypothesis would be partially confirmed if anti-shale opinion leaders are aligning in different and opposite camps regarding Russia's involvement in the Ukraine war and EU-Russia energy relationship rather than being organized in only one political camp. While the latter wouldn't automatically refute the hypothesis that a reflexive control campaign had been implemented, it would be much more likely that state or non-state actors had used other forms of information and intelligence methods, such as HUMINT.

B. Methods

The study is based on content analysis and more specific on textual analysis. Textual analysis in academic writing, particularly when analyzing news articles to understand the behavior of opinion leaders and politicians, is a methodical approach that involves several stages and techniques to dissect written content for deeper insight. When applied to news articles about opinion leaders and politicians, the goal is to understand not just what is said, but how it's said, why it might be said in that manner, and what the implications might be for public perception, policy, or political strategy. This analysis can reveal biases, framing techniques, rhetorical strategies, and the interplay between media and political power.

As a type of textual analysis, discourse analysis looks at language use in terms of the social context in which it is produced. Here, one would analyze how discourse around politicians or opinion leaders is constructed to serve particular political or ideological ends. In this study, discourse analysis will be targeted narrowly at the opinion leaders' and politicians' attitude towards the Russian federation's involvement in the Ukraine war and the Russian supplies of energy to the European countries.

C. Limitations

Reflexive control is an especially elusive information warfare to detect as it transmits only information that is intended to be (1) public and (2) fully perceived by the adversary. This means that analysts and the opponent can work only with assumptions and suggestions in hypothesizing, analysing, detecting and counteracting this information warfare tool.

Secondly, the anti-shale protests of the early 2010s were relatively massive and with a multitude of opinions leaders ranging from high-ranking politicians to grassroots campaigners who would later return to their non-public life and fade into information obscurity. Thus it is next to impossible to track the political alignment of all opinion leaders to present day on the topic of Russian energy and wartime policy.

Third, anti-shale activists that have not risen to international prominence may have continued to publish personal opinion in their own native languages (Romanian and Poland) which are difficult to search and find on social media and information databases.

Fourth, this article doesn't take any stance on the environmental integrity of any shale gas extraction methods or any hypothetical geological implications of the extraction itself. The authors recognize that different stakeholders may have different opinion on shale gas safety and the article's aim is not to address those but to discuss whether Russian state or non-state actors may have attempted to influence the decision-making process of EU states on this matter using a specific information warfare strategy.

D. Reflexive Control Theory

Reflexive control was conceptualized during the Cold War by Soviet military thinkers as a method to gain strategic advantage over the West. It aimed at controlling the adversary's thought processes, not just their actions, by feeding them information that would lead to predictable and favorable outcomes for the Soviet Union [1]. Over the decades, the tactics have evolved from traditional espionage to more sophisticated uses in information warfare, particularly with the advent of the internet and social media. Thomas [1] gives the following definition:

...reflexive control occurs when the controlling organ conveys (to the objective system) motives and reasons that cause it to reach the desired decision, the nature of which is maintained in strict secrecy. The decision itself must be made independently. A "reflex" itself involves the specific process of imitating the enemy's reasoning

or imitating the enemy's possible behavior and causes him to make a decision unfavorable to himself.

The essence of reflexive control lies in the manipulation of information, which is carefully curated and disseminated to shape how adversaries perceive their environment. This can involve a wide range of tactics, from spreading disinformation and misinformation to amplifying existing societal divisions or exploiting psychological vulnerabilities [2]. The goal is not simply to deceive but to create a distorted version of reality that leads the target to make decisions that serve Russia's interests as noted by Vasara [2]. For example, by flooding media channels with contradictory narratives or staging incidents that provoke specific reactions, Russia can create confusion and uncertainty, forcing opponents to question their own understanding of events. This manipulation is often subtle, designed to erode trust in institutions, sow discord, and destabilize societies from within and has become more refined and powerful with the advent of social networks and artificial intelligence. For instance, another scholar, Raskin [3] reviews the application of reflexive control in social networks specifically:

Social networks have become an effective tool for managing public consciousness, directly influencing the decisions made by the leadership of countries in the context of escalating internal and international contradictions, conflicts, and crises. This facilitates the achievement of superiority in informational confrontations. [...] When it is impossible to achieve a favorable balance of forces and weapons compared to the adversary, asymmetric actions become relevant. These include various methods of influencing decision-makers and public consciousness, one of which is reflexive management through social networks. Computer network technologies increase the effectiveness of reflexive management. Social networks create a virtual world filled with diverse information that circulates through direct communication between participants or through special actions organized by professionals. While users may believe they are accessing independent and objective information, moderators often control content flows, shaping users' perceptions and influencing their decisions

The effectiveness of reflexive control lies in its ability to exploit the inherent vulnerabilities of human cognition and modern information systems. People are naturally inclined to seek patterns and make sense of complex situations, and reflexive control takes advantage of this by presenting carefully crafted narratives that seem plausible but are ultimately misleading. In an era of information overload, where individuals and organizations are bombarded with data, the strategy thrives by adding noise to the signal, making it harder to discern truth from falsehood.

Countering reflexive control is a formidable challenge, as it requires not only detecting and debunking misinformation but also understanding the deeper strategic

intent behind it. Traditional responses, such as fact-checking or public education campaigns, are important but often insufficient, as they address the symptoms rather than the root causes of the problem as discussed by Mitrakiev and Dimitrov [4], [5] and need to be supplemented by other methods for instance in the realm of democratic and social resilience as argued by Tagarev and Fluri [6].

III. RESULTS AND DISCUSSIONS

A. Poland

The US Department of Energy estimated in 2011 that Poland holds the largest potential reserves of shale gas in Europe [7]. A generally pro-US public attitude and a good regulatory framework allowed for Poland to make more shale gas exploratory drilling than any other European country as the governments have had expectations for any gas deposits to partially offset the closing of coal mines and power plants. Polish anti-shale movements have been active, however, with the Occupy Chevron series of protests being the most publicized. In June of 2013, members of this anti-fracking group occupied a field near the Polish village of Zurawlow, near the city of Zamosc.

Anti-shale campaigners in Poland had been mostly grassroots activists who haven't decided to maintain a high public profile after their successful protests against the natural gas development projects. There are a few exceptions of activists, mostly associated with international environmental NGOs, who have been active throughout the decade since the early 2010s such as Kuba Gogolewski and the ClientEarth leaders.

Kuba Gogolewski has been one of the most prominent anti-shale activists in Poland. The NGO activist has led several campaigns aimed at the government, oil companies, financial institutions [8] and others supporting shale development in the country. In 2013, Gogolewski [9] argued against the Polish government's moves to limit the influence of campaign groups who opposed fracking:

If you really believe shale gas is the way forward and would be fully accepted by society you should actually strengthen the local regions and communities. Poland is a black horse on climate issues and has been so for some time, one of the exits it is trying to portray on the European level is shale gas, and it says that moving from coal to gas is the way forward. But at the same time it is fighting EU climate legislation on every front. Poland is clearly betting on shale gas and resisting with all its capacity EU legislation and an intake of renewables

In recent years, Gogolewski [10], [11] has rallied against the European Union's insufficiently fast transition to decarbonized economy and renewable energy and that this dependency on fossil fuels directly boosts Russia's capabilities to fund its war efforts in Ukraine:

Many European banks and financial institutions are still, in one way or another, financing Russian fossil fuels and that money fuels Putin's illegal invasion of Ukraine. The connection is clear: fossil fuels (and

uranium) Europe buys from Russian companies. Those same companies not only fuel but also fund the Russian army, and thanks to some of the largest banks and investors in Europe, your money could be funding it. We need to expose and confront the European financial institutions still funding Russian fossil fuels and the war.

Beyond any doubt, Gogolewski's public positions are both anti-shale and anti-Russia in both energy deals and its military operations in Ukraine.

Another activist group that has remained vigorous since the anti-shale movements is Client Earth. This international environmental charity was targeted by Polish Treasury Minister Nikolaj Budzanowski for working against the public interests of the state with Polish conservative media going as far as to label the group as "eco terrorists" [12].

Client Earth's team has been vocal in their support for Ukraine and reducing Russia's energy dominance in Europe using fossil fuels. For example, on February 24, 2023, the group's [13] official X account published that:

Today marks the anniversary of Russia's invasion of Ukraine. Russia's war is a violation of Ukraine's sovereignty, which has devastated the lives of millions of innocent people. We stand in solidarity with the Ukrainian people.

The NGO's CEO Laura Clarke reposted the position as well. Clarke and the NGO profile asked for donations for the NGOs in Ukraine later the same day, arguing that despite the ongoing terrible conditions, activists and social organizations are still working with great courage in Ukraine. In 2022, Clarke was personally present at a meeting between the New Zealand foreign affairs staff and the UK Defence Select Committee where they discussed a range of issues, including Russia's invasion of Ukraine. Clarke has also retweeted other UK officials arguing in favour of the international community supporting Ukraine.

Another active public figure against shale gas has been Radoslaw Gawlik who had served as a vice minister in the cabinet of Jerzy Buzek and has since turned into an environmentalist. Gawlik rallied against governmental efforts to suppress environmental NGOs who protested against shale gas development. He has also repeatedly participated in initiatives calling for the European authorities to impose a full embargo on Russian energy supplies such as the open letter to the EU Parliament from July 2024, signed by more than 100 leading international environmentalists [14]. While Gawlik's general attitude towards Russian energy supplies is undoubtedly negative, he had taken environmentalist positions that have jeopardized Polish infrastructure projects aimed at diminishing Russian dependency in transport, energy, trade, and others. One such example is the canal through Vistula Spit, which would reduce 100 kilometers from the journey that ships make towards the Polish port of Elblag and completely avoid going through the Russian-controlled Strait of Baltiysk. Gawlik criticized the project, arguing that "The billions of zloty which the government

wants to sink into the Vistula spit, and to cement riverbeds under the pretext of creating river ways, should be instead devoted to fighting the drought, restoring natural retention, feeding groundwaters, river restoration as well as protecting wetlands and peat bogs" [15].

B. Bulgaria

The Bulgarian Council of Ministers approves a contract with the US company Chevron to explore potential shale gas fields in "Block 1 Novi Pazar" on 16.06.2011. The first protests and flash mobs against the decision come one month later – on 4th of August citizens gather in three Varna region municipalities to express their disagreement with shale gas development – in Vetrino, Valtchi Dol and Suvorovo [16]. On the next day, citizens gather to protest in front of the Bulgarian National Television's headquarters, requiring the broadcaster to screen the anti-shale movie Gasland. The movie is screened publicly in Varna on the 16th of August and the first national protest follows on the 1st of September [17]. The protest features a number of controversial claims, alleging earthquakes in the United Kingdom and land and water poisoning in Ecuador to have been caused by shale gas operations [17]. These are supported by the powerful Fortnature alliance of environmentalists and green NGOs, whose leaders to a sizeable extent overlap with the Green party leaders. Another large protest follows in the capital of Sofia on the 13th of September with the prime minister Borisov, Minister of economy, energy and tourism Traikov and minister of environment Karadzova holding talks with anti-shale activists in the Council of ministers [18]. A well-publicized press conference on both topics features protest leaders Borislav Sandov, Angel Slavtchev and Mariana Hristova [18].

A number of national protests follows centred mostly in Sofia, Varna and Dobrich, which are accompanied with discussions, flash mobs and flurries of press releases, often citing allegations that had bordered conspiracy theories – such as small earthquakes at the Bulgarian seaside being caused by shale gas drilling. Mostly leftist, populist and socialist political parties such as ATAKA, the Bulgarian socialist party and RZS exploit the political cleavage and start calling for and filing legislation that bans shale gas exploration [19].

Following another flurry of protests and anti-shale events, the National Assembly [20] passed a decision that bans the full exploration and extraction of natural gas using hydraulic fracturing in Bulgaria.

Probably the most prominent organization against shale gas development in Bulgaria had been the "Citizens' initiative to ban shale gas exploration and extraction". On 24.01.2012 the Initiative gave a final press conference following a series of protests and a decision by Bulgaria's National Assembly to ban gas exploration and extraction using hydraulic fracturing. The press conference was led by the Initiative's leaders – Borislav Sandov, Angel Slavtchev, Mariana Hristova, Milen Stoyanov and Tatyana Koseva [21].

Another important opinion leader that needs to be mentioned is that of Mr. Toma Belev, who has been in the management team of Forthenature [22]. He has also sustainably taken positions against shale gas development and throughout the years has become a leading figure in Bulgarian environmentalism.

Analyzing the political standing of the above-mentioned opinion leaders reveals a diverse spectrum concerning Russia's involvement in supplying energy to Bulgaria and Europe, as well as the Russo-Ukrainian war.

Mr. Angel Slavtchev has joined a number of nationalist political parties between 2011 and 2025 and as of January 2025 he is member of the National Assembly of Bulgaria from the group of the nationalist political party Vazrazhdane. Mr. Slavtchev [23] has repeatedly laid his and his current party's views on important Russia-related foreign policy topics, for instance:

We want a referendum for keeping the Bulgarian Lev, we want to stop supplying weapons to Ukraine, we want to restore economic relations with Russia and organize a referendum for exiting NATO.

In his last election campaign, Slavtchev [24] elaborates deeper on his vision for Bulgaria's involvement in the Russo-Ukrainian war:

Enough of serving Euro-Atlantic values. We must serve Bulgarian values and the Bulgarian people, and build partnerships in the East and the West. There is no need to be service personnel at some embassy, we must work for Bulgaria. What is happening in Ukraine must stop immediately. Bulgaria must not send its soldiers into a conflict that is not ours. We at Vazrazhdane categorically oppose this scenario of sending Bulgarian soldiers to Ukraine, having a few coffins return and then having us put in this film, having us rise up against Russia too. We must not allow it. This is the plot of the directors from the West, including the USA, who are actively interfering, and our cadets are trump cards. We must stop this. We must not even send nurses there, we must not send weapons there. This is a fratricidal war and we have no place in it.

Slavtchev hasn't actively commented on the Russian energy dealings with Bulgaria throughout the last year since becoming a member of parliament, but his current party Vazrazhdane has been extremely active on this topic [25]. For instance, they claimed that the Bulgarian government is lying that Gazprom had stopped gas deliveries [25], they are the only ones who can successfully negotiate with Gazprom as noted by the party leader Kostadinov [26] and worsening relations with Gazprom would also worsen relations with other European countries such as Serbia and Hungary [27].

Borislav Sandov has had a notably different approach to Russian energy deals and the war. Shortly after resigning as a minister of the environment, Sandov [28], [29] had multiple interviews criticizing Gazprom for not fulfilling its contractual obligations to supply Bulgaria with natural

gas. Sandov [28] is also highly critical of the Russian ambassador's diplomatic moves in Bulgaria at the time and the Bulgarian Socialist Party's views on rapprochement with Russia on the eve of the Russo-Ukrainian war:

There is the Vienna Convention on Diplomatic Relations, and it must be observed. There is also the so-called principle of equality in diplomatic relations, and this is the reason why Russian diplomats were expelled from Bulgaria. The diplomatic mission of Russia exists, we have diplomatic relations and should maintain them, but when the Russian Federation engages in unprovoked military aggression on the territory of a sovereign state such as Ukraine, we cannot be subservient merely because we might rely on potentially lower gas prices. This would justify claims that Bulgaria is Russia's Trojan horse in Europe, and that cannot be a compromise position.

During his tenure as minister of Environment, Sandov [30] remains highly critical of shale gas development in Bulgaria and claims that the country has no viable deposits and shale gas cannot turn a profit without state subsidies. When pressed on whether such a position and moratorium on not only extracting, but also exploring for shale gas, serves the interests of Gazprom, Sandov deflects and claims that conventional gas supplier diversification is an easier and faster way to reduce dependence on Gazprom [30]. In the campaign for the 2024 parliamentary elections, Sandov [31] argued for maximizing support for Ukraine, including military, energy and giving a clear path for joining the European Union.

Toma Belev, who had served as deputy minister for the environment to Borislav Sandov, has expressed very similar positions concerning Russia to the latter. For instance, in 2024 he insisted on the next government to focus on joining Schengen, Eurozone, implementing a constitutional reform and aiding Ukraine in the war [32]. In 2022 Belev [22] had been criticizing the caretaker government at that time for not severing relationships with Gazprom and continuing to partner with Lukoil.

Tatyana Koseva, Milen Stoyanov and Mariana Hristova have been less active in public life since their successful lobbying for a moratorium on fracking. There are several recent interviews of Hristova [33], [34] with positions against natural gas development projects and indications that she has supported initiatives against intensifying EU-US relations in the area of trade [35].

C. Romania

Romania discovered non-conventional gas resources in Transylvania in the 1990s and has been one of the European countries investing significant hopes in shale gas development. The initial push for shale was led by the Democratic-Liberal government in 2012 which was however brought down shortly after initiating steps to explore shale gas deposits by the Social-Democrats with a motion of no confidence in April 2012. As the Social-Democrats came to power in 2012, the party's platform featured adamant opposition to shale gas extraction.

However, Victor Ponta's government opposition gradually softened and after a streak of negotiations with the USA state and non-state actors, Ponta [36] announced in January 2013 an almost complete reversal, arguing that shale gas development "should be considered as something positive". Widespread protests against shale gas started after several gas extraction rights were sold to Chevron in early 2013.

Throughout the spring of 2012, several thousands people marched repeatedly in the city of Barlad with protestors also involving representatives of the priesthood. Protests were renewed in the spring of 2013 again in Barlad but activists from other areas such as Bucharest, Constanta, Galati and Buzau also attended. Protests spread quickly in April on the occasion of a global anti-fracking day. Protests escalated in intensity but had not turned violent until October 2013. In October, protestors and gendarmes clashed in Pungesti as Chevron moved to make first actual steps towards drilling, leading to fierce clashes and a dozen people being injured. Protests across Romania escalated in intensity with occasional violent outbursts until the end of 2014, expanding to block not only shale, but also conventional gas and oil projects.

Ultimately, the protests have been successful, initially toppling the Ungureanu government, suspending shale gas exploration in Pungesti, interrupting shale gas extraction from the Mosna-Alma Vii and forcing Chevron to withdraw from Romania.

Romania's anti-shale movement had been highly decentralized and fragmented with massive grassroots campaigns joined by powerful local leaders in both municipal authorities, religious communities, entrepreneurs, and environmentalists. At the highest political level, politicians across a wide spectrum had expressed (and then sometimes reversed) anti-shale positions. However, most of the political leaders that had campaigned at some point against shale are firm supporters of the EU, NATO and Ukraine with highly critical opinion of Russian energy supplies and Russian military activities such as Traian Basescu [37] and Victor Ponta [38].

D. Discussion

The clearest evidence for a hypothetical involvement of Russian aligned state or non-state information warfare targeting the potential of Eastern European states developing shale gas is NATO's chief Rasmussen arguing that "I have met allies who can report that Russia, as part of their sophisticated information and disinformation operations, engage actively with so-called non-government organizations — environmental organizations working against shale gas — obviously to maintain European dependence on imported Russian gas" [39]. An anonymous NATO source concurred to Foreign Policy that there is a widespread concern among NATO members that "Russia could try to obstruct possible projects on shale gas exploration in Europe in order to maintain Europe's reliance on Russian gas" [39].

Johnson [39] also notes that Europe's decision making process on shale gas development had been more

vulnerable to external information warfare "because environmental groups have more political power than in the United States and because higher population densities magnify the possible damaging effects of the drilling practice". In parallel, President Putin has repeatedly criticized the environmental impact of shale gas development, for instance by calling it "barbaric" [40] and arguing in length that it poses an insurmountable threat to the environment [41]:

We all know that when fracking is used to produce shale gas the people in nearby towns no longer have water coming out of their taps but a blackish liquid that it would be difficult to call water. This poses a huge environmental problem. People always encounter these sorts of problems in hydrocarbon production.

Non-state Russian actors such as Gazprom's Alexey Miller have mirrored this position, arguing for an EU-wide ban on fracking as Zubrin [42] reports: "the production of shale gas is associated with significant environmental risks, in particular the hazard of surface and underground water contamination with chemicals applied in the production process". Zubrin [42] also reports on numerous Russian media outlets putting forward exaggerated reports on the risks of hydraulic fracturing with titles such as "Wrecking the Earth: fracking has grave radiation risks few talk about", "US fracking wells annually produce 280bn gallons of toxic waste destroying environment" and "Fracking dilemma: fresh water or cheap gas? The latter is not likely to happen" in RT.

Multiple Western analysts have also thrown serious doubt on the self-sufficiency of European environmental groups that sprang out of nowhere in countries such as Bulgaria and Ukraine in the early 2010s, which had until that moment shown no signs of organized and highly motivated environmentalism [39]. For instance, Brenda Shaffer [43] from Georgetown University argued that suddenly environmental movements started to target not only shale but also pipelines that would offer alternative gas transportation routes, "It's very concrete; it relates to both opposition to shale and also trying to block any alternative pipelines with environmental challenges, there is a lot of evidence here; countries like Bulgaria, Romania, Ukraine being at the vanguard of the environmental movement is enough for it to be conspicuous". Shaffer's words are echoed by those of Carstei [44] from the Atlantic Council, who points out that "all of a sudden, in societies that never did grassroots organization very well, you saw all these NGOs well-funded, popping up, and causing well-organized protests".

Although there have been some direct links between green NGOs' anti-shale campaigns and Russian state and non-state actors such as the ones described by former US ambassador to Lithuania Smith [45], their obscurity and relatively low number lead to suggestions that any external information warfare campaign would be far more elaborated and sophisticated than direct sponsorship or HUMINT. An overwhelming majority of the anti-shale activists are probably moved by genuine belief that hydraulic fracturing poses too many risks for the

environment and they are at the same time not aligning with Russia on any other topic as Johnson [39] points out:

...much of Europe's anti-fracking movement is motivated by genuine environmental concerns, just as in the United States; much of that opposition was catalyzed by the controversial 2010 anti-shale documentary *Gasland*. There are fears about fracking's effect on groundwater and the link between fracking and increased seismic activity. France, for instance, banned fracking before Bulgaria. [...] Environmental groups such as Greenpeace scoff at the NATO chief's allegations, saying that they oppose fracking for sound environmental reasons. What's more, there's little love lost between Greenpeace and Russia, because Moscow detained dozens of the group's green activists last year.

Yet, it is difficult to ignore that external state or non-state actors align too many pieces of the puzzle in a way that corresponds with a reflexive control campaign:

- the timing and coordination of the anti-shale campaigns in Bulgaria, Romania and Poland has been conspicuously similar;
- the common themes and messaging have largely ignored national contexts and concentrated on a cluster of environmental risks (water contamination, earthquakes and toxic fluids), lack of transparency (and supposed kickbacks for government officials) and foreign influence with fingers pointing towards the supposedly colonialist American capitalism;
- Russian media, political leadership and energy corporations have been active with exactly the same messaging and uniformly opposed hydraulic fracturing in Europe (while experimenting with the method in Russia)

Finally, as this article's research has proved, opponents of shale gas development do not share a uniform ideology and attitude towards Russia, which would have been evidence for a more direct external information or hybrid intervention. On the contrary, from today's point of view, most anti-shale campaigners are actually rallying behind Ukraine against Russia in the Russo-Ukrainian war while still trying to stop strategic energy projects that may reduce EU's dependency on Russian energy resources.

IV. CONCLUSIONS

More than a decade has passed since a wave of coordinated anti-shale activism has swept through Eastern Europe and terminated the initiatives of these countries to develop their own shale gas deposits and reduce dependency on fossil fuel imports. Despite the fact that many Western scholars have suspected that Russia was involved in supporting this environmental activism in order to cement its energy dominance over these states, rigorous research has uncovered too little direct links in the realm of finance, HUMINT, organization and media. This article suggests that any state or non-state Russian actors may have deployed the strategy of reflexive control in order to transmit specific information discrediting the utilization of

hydraulic fracturing to a wide range of activists on the most basic environmental-moral level without interfering in these people's and organizations' attitude towards Russia. The textual analyses of statements of prominent anti-shale figures from Bulgaria, Romania and Poland proves that for the 10-15 years since the anti-shale wave they haven't clustered towards a pro-Russian position in any area, be it military, energy, environment, or else. On the contrary, their understanding, standing and activism on public policy and/or politics has branched out in different directions and probably most of them do not support Russia on any major public policy matter. This at least partially confirms the hypothesis for reflexive control application as this strategy aims to influence the adversary's decision-making without directly controlling the opponent but by transmitting information that is integrated in the decision-process.

Further research may investigate this matter in more EU countries and also add an analysis of the influence of US state and non-state actors who may have lobbied and/or tried to influence decision-making in the EU to facilitate the development of shale deposits – either from self-interest or as counteracting the hypothetical Russian campaign.

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