



ENERGY WARFARE IN THE ONGOING IRAN–ISRAEL WAR: EFFECTS ON REGIONAL SECURITY AND GLOBAL OIL MARKETS

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ABSTRACT

Weaponization of the energy resources has become one of the characteristic elements of the ongoing conflict between Iran and Israel, which has essentially transformed the dynamics of regional security and the markets of hydrocarbons in the world. This qualitative research paper has analyzed the use of energy-related instruments by Iran and Israel such as threats to maritime chokepoints, proxy-driven energy infrastructure attacks, sanctions regimes and strategic disruption of oil transit passages as coercive instruments of statecraft. Secondary sources were selected based on energy publications, geopolitical reports, policy reports, and official international news published in 2005-24. A purposive sampling was used to select literature that directly relates to oil-route vulnerabilities, energy infrastructure targeting, sanctions dynamics and disruptions in the market due to conflicts. Thematic analysis revealed that there are five main themes, including energy disruption as an asymmetric instrument, the strategic centrality of maritime chokepoints, oil price volatility as a geopolitical tool, the decline of regional energy security, and the insufficiency of the existing international governance regimes. The paper concluded that Iran has been able to build the potential to threaten about twenty percent of the world's traded seaborne oil by credibly threatening to close the Strait of Hormuz and that proxy networks have increased the geographic area of infrastructure vulnerability. On the other hand, the Iranian export capacities have been limited by U.S.-led and Israel-aligned sanctions regimes, and has increased the pace of Iranian efforts to seek sanctions-resistant energy suppliers in Russia and China. All these interplaying processes have created a state of chronic price volatility, high risk premiums in energy markets and fault lines in the regional security architecture of the Middle East. The paper ends by giving recommendations of diversified energy routing, enhanced multilateral governance and integrated diplomatic-economic engagement structures.

Keywords: *energy warfare, Iran–Israel conflict, oil markets, regional security, Strait of Hormuz, sanctions, energy infrastructure, geopolitics, asymmetric strategy*

INTRODUCTION

The intersection of energy and armed conflict in the Middle East is not a new phenomenon, but the current confrontation between Iran and Israel has brought this relationship to a new level of strategic status. This no longer exists on traditional battlefields, and the Iran-Israel war, which is fought in the dimensions of cyberspace, proxy networks, covert operations, and diplomatic competition has left the intentional targeting and exploitation of energy infrastructure, supply lines, and even market mechanisms as a tool of geopolitical coercion (Cordesman, 2022). The effects of this energy warfare are much wider than the direct participants: the Middle East is where global hydrocarbon supply is concentrated, and any prolonged interruption to its energy flows is accompanied by the possibility of spreading



economic shocks to the importing economies in Asia, Europe, and the Americas (International Energy Agency [IEA], 2023).

The idea of energy warfare the intentional exploitation of energy sources, infrastructure and supply lines as a tool of military or strategic pressure has been in the academic and policy literature of various decades (Bahgat, 2011; Yergin, 2011). Nonetheless, there has been a lack of systematic scholarly interest in the particular application of this concept to the Iran Israel confrontation. A significant part of the available literature discusses either the geopolitical aspects of Iranian nuclear aspirations, the military aspects of Israeli strike potential, or the economics of the Middle Eastern oil markets in a vacuum, without incorporating these components in a single analytical system that would reflect the strategic rationality of energy warfare, as practiced by the two belligerents (Takeyh, 2009; Bar-Joseph, 20). This paper aimed to fill that void by offering a qualitative analysis into the full extent to which energy has been used as a weapon in the current war and what the ultimate effect has been to the security of the region and the world markets.

The energy warfare capability of Iran is based on a few structural attributes of its geographical and strategic location. With a natural ability to inflict devastating expenses on the entire world economy by making plausible threats of chokepoint shutdown, Iran, as a state with the power to control the northern coast of the Strait of Hormuz through which an estimated twenty-one million barrels of oil each day pass in 2022, or about two-fifths of all the world seaborne oil, possesses a natural means to do so (This strategic power has been complemented by Iran building a comprehensive system of ballistic missiles, anti-ship cruise missiles, naval mines, and high-speed attack vessels that are specifically used to intimidate tanker traffic and naval escorts in the Persian Gulf and Gulf of Oman (Cordesman and Toukan, 2014). Iran has further increased its energy warfare capability with the strategic armament and control of regional proxy forces, most notably the Houthi movement in Yemen, which have already shown the ability to attack energy infrastructure at hundreds of kilometers with Iranian-provided drone and missile systems.

The historic September 2019 attacks on the Saudi Aramco Abqaiq processing plant and the Khurais oil field, which the United States government designated as Iran-linked, showed in the most graphic way the possible strategic consequences of energy infrastructure targeting. The attack caused the temporary loss of about 5.7 million barrels per day of Saudi production capacity, or about five to six percent of the world supply, leaving the market without this capacity, the largest percentage change in oil prices per day since the 1991 Gulf War (Smith, 2019; Vatansever, 2020). The episode was an operational demonstration of concept of precision strike and it has been applied in the emerging doctrines of energy warfare by various actors across the region.

On the Israeli side, energy warfare has been chiefly manifested in the form of assisting and maintaining extensive international sanctions regimes aimed at limiting the capacity of Iranian oil exports, as well as denying Tehran the resources to finance its military programs and proxy networks. The sanctions architecture led by the United States, which has been oriented to Israeli strategic goals over the years of different administrations, has at different times cut Iranian crude oil exports by more than two million barrels per day compared to pre-sanctions levels, causing Iranian macroeconomic pressure and limiting its defense budget (Nephew, 2018; Katzman, 2022). Clandestine sabotage of infrastructure and assassination of Iranian military and nuclear installations by Israel has also been widely reported, including operations that have impacted Iranian assets of the energy sector.



Regional and global implications of this dynamic of energy warfare are far-reaching and multidimensional. To regional states, the ever-present risk of infrastructure attack has increased insurance and security rates of energy production and transport, discouraged foreign investment in Gulf energy industries, and widened the geopolitical rift between Iranian-oriented and U.S. orientated. .aligned states in the region (Aarts & Nonneman, 2012). The Iran-Israel conflict has been one of the most important and sustained sources of geopolitical risk premium in oil markets, which has been a major contributor to price volatility making it difficult to plan investments by energy companies and macroeconomic management by importing states (Hamilton, 2009; Baumeister and Kilian, 2016). The dynamics of this energy warfare, its mechanisms, scale, and impact are thus of immediate interest to scholars, policy makers and market players alike.

LITERATURE REVIEW

Theoretical Frameworks: Energy as a Statecraft.

The theoretical literature on energy security helps in setting the foundation of understanding energy warfare as a strategic phenomenon. Yergin (2006, 2011) has developed the conceptual core of energy to the modern statecraft, believing that the control of energy sources and transit pathways is a central aspect of national power and a constant cause of interstate rivalry. Following this basis, Bahgat (2011) built a framework to analyze energy as a tool of geopolitical coercion, and makes a distinction between the supply-side of exploiting control over transit corridors and chokepoints). The two dimensions are directly applicable to the Iranian energy warfare approach, which integrates the threat of disruption of production by proxy attacks on infrastructures in the Gulf with the threat of disruption of transit by Strait of Hormuz interdiction.

A valuable theoretical curing was made by Colgan (2013) who showed that there was a correlation between petrostates, military aggression, and energy revenues whereby states with high reliance on oil exports tend to launch and maintain military aggression due to the fact that resource wealth protects the leaders of these states against the economic cost of war in their respective countries and that the resources could be used to finance military adventurism. This paradigm provides a clue into Iranian strategic action: the continuity and breadth of Iranian regional military action, such as its widespread aid to proxy troops in the Middle East, has been greatly facilitated by oil income at times of diminished sanction stress. On the other hand, the diminishing oil revenues under increased sanctions have been linked to more or less Iranian restraint and diplomatic activity, which are documented in the negotiations that resulted in the 2015 Joint Comprehensive Plan of Action (JCPOA) (Nephew, 2018).

Another valuable theoretical framework is the explicit literature on the strategy of chokepoints and the maritime energy security. Ratner et al. (2013) discussed the strategic importance of maritime chokepoints, finding that the Strait of Hormuz is the most consequential energy system bottleneck of all due to the volume and diversity of oil flows reliant on it. Gholz and Press (2010) presented a rather contrarian study claiming the real disruption costs of closing Hormuz would be less than generally believed because of market adjustment mechanisms and strategic petroleum reserves, although their analysis has been generally criticized as understating the price impact of uncertainty in supply, and the economic ripple effects of even a temporary closing (Hamilton, 2009).

Since the mid-2000s, the literature on the Iran-Israel strategic confrontation has increased significantly, in line with the escalation of the bilateral rivalry in the aftermath of the 2006 Lebanon War and the increasing pace of Iranian nuclear program. Takeyh (2009) has given an



extensive study on the Iranian grand strategy whereby the Islamic Republic has slowly but surely developed a forward defense position through the use of proxy forces and asymmetric capabilities in an attempt to conduct power beyond Iranian borders and inhibit aggressive military intervention by adversaries. This energy aspect of the strategy was present in the analysis by Takeyh, but was not emphasized by it; later scholarship has accorded this aspect much more importance.

An in-depth study of the Iranian military capabilities in relation to energy warfare has not yet been documented, but Cordesman and Toukan (2014) give the best analysis available of how Iran developed an arsenal of anti-ship missiles, naval mines and fast-attack craft in order to threaten the tanker traffic in the Persian Gulf. They analyzed that Iran has invested in capabilities targeted specifically to the energy warfare mission, such as the Noor anti-ship cruise missile (range about 200 km) and the Khalij Fars anti-ship ballistic missile, which indicated that the country made a conscious commitment to energy warfare as a strategic choice and not just an incidental capability. Later research by Ostovar (2016) has placed this military development in the context of the organizational culture of the Islamic Revolutionary Guard Corps (IRGC), which has always placed greater emphasis on asymmetric and unconventional capabilities as a buffer to conventional U.S. and Israeli military superiority. Bar-Joseph (2018) analyzed the strategic rationality of Israel according to the projection of Iranian regional power and reported the focus of the Israeli threat measurement on the centrality of the Iranian economic capacity to the oil revenues. This Israeli strategic approach of restricting Iranian oil revenues by assisting sanctions regimes is well-established in both policy analyses by Katzman (2022) and Nephew (2018), who both give an extensive rebuilding of the sanctions architecture and its economic impact on Iran.

.Geopolitical Risk Premiums and Oil Price Dynamics.

An extensive economics literature exists that studies the connection between Middle Eastern geopolitical conflict and the dynamics of oil prices in the world to offer quantitative support to qualitative evaluation of the effects of energy warfare. Hamilton (2009) empirically showed that major geopolitical shocks to supply of Middle Eastern oil have been linked to massive oil price volatility during the post-World War II era, and its ripple effects on economic growth in the world economy. Baumeister and Kilian (2016) further applied this analysis to the post-2000 era, and concluded that geopolitical risk, including uncertainty in supply due to conflict, is a persistent and quantitatively important element of oil price formation, not dependent on underlying supply-demand interactions. Caldara and Iacoviello (2022) constructed the Geopolitical Risk (GPR) index as a systematic uncertainty in the financial markets of an economy in relation to conflicts, discovering that high GPR is always linked to high prices of oil and low investment. Their analysis records high GPR levels linked to a series of instances of Iran-related tension, such as the 2012 escalation of the sanctions, the 2019 Abqaiq attack, and the assassination of the IRGC General Qasem Soleimani in January 2020. The case study of the Abqaiq attack, in particular, by Vatansever (2020) reported the market mechanisms of how the strike converted into price implications and also showed that the attack showed formerly underestimated weaknesses in Saudi energy infrastructure concentration Regional Energy Security and Infrastructure Vulnerability.

.Regional energy security literature.

The literature regional security in the Middle East suggests the vulnerabilities of the structure that render energy infrastructure a special target in the Iran-Israel confrontation. Fattouh and Sen (2015) reported that Gulf oil production and processing facilities were concentrated in a relatively few high-value facilities, most of which are within the coverage of the Iranian missile



and drone systems. This infrastructure concentration which is indicative of the economics of large scale oil processing over strategic dispersal factors has left a structural vulnerability that can be leveraged by the energy warfare strategists. An example is the Abqaiq plant which receives about seven percent of the world oil production in one location, which is a very high-value target. Lahn and Stevens (2011) observed the wider context of energy security of regional conflict, in which the environment of threat has raised the insurance and security costs of energy operations in the Persian Gulf and has in effect added a conflict premium to global oil prices even without real disruption. These dynamics were put into the context of Gulf state political economies and how both energy revenues and energy security considerations inform the strategic calculus of Gulf Cooperation Council (GCC) states against both Iran and Israel, as suggested by Woertz (2013). The GCC states are in a particularly ambivalent place in the context of Iran-Israel energy warfare: they are both key oil exporters whose infrastructure is threatened by the Iranian energy warfare capabilities and states whose oil revenues are benefiting due to the high prices which the geopolitical tensions.

Sanctions as Energy Warfare: Mechanisms and Effects.

Sanctions-oriented literature offers a crucial background to the Israeli-sided aspect of energy warfare against Iran. The most detailed discussion of the U.S. sanction policy against Iran was by Nephew (2018) who wrote about the mechanisms by which financial sanctions, shipping restrictions, and secondary sanctions on third-country buyers were converted into a decrease in Iranian oil volumes of the export. His discussion revealed that the best sanctions episodes involved extensive financial actions and proactive diplomatic coercion upon key Iranian oil clients, such as China, India, South Korea, and Japan, to decrease their buying. In this analysis, Katzman (2022) extended the analysis up to the Biden administration, where he reports the continuity of the maximum pressure sanctions architecture despite phases of diplomatic activity and the development of Iranian sanctions-evasion policies based on the sale of products to Chinese refineries not part of the global financial system.

The unintended effects and restrictions of sanctions as a tool of energy warfare are also reported in the literature. Afrasiabi and Maleki (2008) reasoned that the sanctions have not limited the development of the Iranian investment in local refining capacity and alternative sources of energy, but hastened it, with the resultant effect of making the country less susceptible to any disruption in imports. In a broader sense, the literature on sanctions has found a developing literature on sanctions blowback: how the long-term pressure of sustained sanctions has pushed Iran towards closer economic and strategic relationships with Russia and China, and how this relationship may result in a sanctions-resistant energy trade architecture that can keep Iranian oil revenues flowing in the long run despite a lack of access to the Western financial system (Goldenberg & Dalton, 201

METHODOLOGY

The qualitative research design was applied in this research. A qualitative method was chosen as the research questions deal with the inherently complex, contextually bound and interpretively rich phenomena the strategic logic, operational mechanisms and systemic implications of energy warfare in the Iran-Israel conflict that cannot be reduced to any meaningful quantitative indicators (Creswell and Poth, 2018). Qualitative methodology allowed the unification of various streams of evidence based on energy economics, strategic studies, regional security analysis and the political economy, to support the holistic analytical viewpoint needed to answer the multi-dimensional research questions. The research was solely based on secondary data. No primary data was to be collected, due to practical considerations, and since the amount, quality, and analytical depth of secondary material available was deemed



adequate to answer the research questions in their entirety. The secondary sources were obtained using various academic and policy databases such as the JSTOR, ProQuest International, Google Scholar, the Defense Technical Information Center (DTIC), and institutional repositories of large energy and security research institutions. Qualitative analysis of market impacts was quantitatively grounded by specialized energy databases such as the IEA series of World Energy Outlook and the EIA series of Short-Term Energy Outlook. Policy documents were found via government and intergovernmental portals and publications of think tanks with a defense orientation through institutional websites such as the Carnegie Endowment of International Peace, Brookings Institution, International Institute of Strategic Studies, and the Center of Strategic and International Studies.

The purposive sampling was used to identify the sources to be used in the study. Purposive sampling is a non-probability sampling where sources are carefully chosen according to the relevance of the sources to the research questions and their potential to play a significant role in the analytical framework (Patton, 2015). Before starting the literature search, several explicit criteria were used: these sources needed to be on energy security, oil market dynamics, Iranian military strategy, regional conflict in the Middle East, or policy of sanctions and needed to be published in the period between 2005 and 2024 as peer-reviewed academic journals, institutions of established policy research, or recognized governmental and intergovernmental organizations. Sources were eliminated when found to be analytically unsound, ideologically motivated but lacked any evidential support or when they were published in outlets that lacked a known peer review or editorial review procedure. The implementation of these criteria created a corpus of about sixty sources comprising academic journals, book-length analyses, government reports, and policy papers.

Thematic analysis was utilized as the major analytical tool, according to the six-step model developed by Braun and Clarke (2006). During the familiarization stage, all the chosen sources were read in their entirety, and preliminary observation as regards the analysis was made in research notes. During the coding phase, codes that were meaningful and important to the research questions were recognized and designated using descriptive codes on the entire corpus of the source. During the theme development stage, first codes were clustered into candidate themes that were more general patterns of the data. During the theme review stage candidate themes were assessed based on internal consistency, uniqueness relative to each other, and compatibility with the data, and merged or subdivided as appropriate. During the theme definition stage, surviving themes were assigned specific names and definitions, and the content of each theme was clearly stated and explained to the overall picture of the analysis. During the last write-up stage, the thematic analysis was condensed into the analytical narrative in the findings section.

The aspect of validity and reliability was tackled using several measures in line with the recommended standards of rigor in qualitative research (Lincoln and Guba, 1985). Triangulation of sources was attained by making sure that all significant findings are backed by evidence provided by at least three independent sources of varying types of publications and institutional views. The negative case analysis was done through the active search of sources which contradicted or qualified new themes so that the analysis was not only a reflection of the widespread approach in the literature. A record of all the methodological decisions, sampling decisions and coding procedures was kept in the form of an audit trail. All these strategies aided the credibility, transferability and dependability of the findings. The researcher recognized and considered the possible analytical biases, such as the overwhelmingly Western nature of much of the extant defense and energy literature, and



actively strived to have the perspectives of a variety of scholarly traditions represented in the analysis.

FINDINGS

Theme 1: Energy Disruption as an Intended Asymmetric Policy.

The theme most frequently endorsed by theme analysis was the calculated and planned nature of the disruption of energy as an aspect of Iranian asymmetric strategy. Through a consistent set of reports, it became clear in the literature that the development of energy warfare capabilities by Iran has not been an incidental one but a logical strategic decision by a clear-eyed view of the structural leverage its geographic location and regional impact has on energy flows all over the world.

The literature has recorded the long-term allocation of capabilities to the energy warfare mission by Iran, such as anti-ship missiles, naval mines, fast-attack craft, and, most recently, precision-guided drone systems that can attack energy infrastructure at long distances (Cordesman and Toukan, 2014; Ostovar, 2016). More importantly, it has been recorded that there is a regular trend of Iranian leadership publicly expressing the threat of closing the Strait of Hormuz as a deterrence tool in times of a significant tension with the United States and Israel, a fact that demonstrates that the ability to wage energy war has been an intentional part of Iranian deterrence policy. The operational gravity of this doctrinal commitment was proven by the repeated exercises by the IRGC Navy that simulated attacks on tanker traffic in the Persian Gulf recorded in several open-source defense evaluations.

The proxy aspect of Iranian energy warfare strategy was found as an important issue in various sources due to clarity of the range and scope of the threat. This enabled Iran to project its energy warfare to the entire Arabian Peninsula by having Iranian forces in Yemen arm and direct drones and missiles to attack Saudi and Emirati energy systems without direct involvement (Watling and Reynolds, 2022; Vatansever, 2020). Examples of this proxy extension of energy warfare capacity, included the 2019 Abqaiq attacks, the ongoing Houthi campaign against Saudi oil facilities between 2017 and 2022, and the Houthi missile and drone attacks on UAE energy infrastructure in January 2022. The facts always indicated that this proxy war gives Iran an economical force multiplier whilst preserving strategic ambiguity, which makes it difficult to retaliate

Theme 2: Maritime Chokepoints Strategic Centrality.

The second key theme that emerged during the analysis was the strategic centrality of maritime chokepoints, most notably the Strait of Hormuz, but also the Bab el-Mandeb strait at the southern end of the Red Sea, to the energy warfare dynamics of the Iran-Israel conflict. The literature settled on the fact that Iran has its power over global energy markets, based on the fact of its geographic location over these chokepoints, and that the structural leverage has informed Iranian military policy, as well as the strategic calculations made by all sides to the conflict.

The narrowest point of the Strait of Hormuz between Iran and the Arabian Peninsula measured about 33 kilometers was found to be the most significant in the global energy system according to the literature (Ratner et al., 2013; EIA, 2023). The magnitude of the oil movements across the strait, not to mention the fact that most of the oil exports of Saudi Arabia, the UAE, Kuwait, Iraq, and even Iraq itself pass through it, translates to the fact that even a plausible threat of closure creates a substantial upward pressure in the world oil prices. In the literature, several instances of the effect of Iranian threats to close the strait, which were usually a reaction to an increasing pressure of sanctions or military tensions with the United States, have been recorded,

where the impact of the threat on oil prices was measurable and no actual closure occurred, showing the strategic effectiveness of the threat itself as a deterrent tool (Hamilton, 2009; Caldara and Iacoviello,

The Bab el-Mandeb strait, which dominates the southern end of the Red Sea and the route to the Suez Canal, was declared as a secondary yet gaining importance chokepoint to which the vulnerability has been operationalized by the Houthi attacks on shipping. The data recorded a prolonged Houthi campaign of drone and missile attacks on tankers and commercial vessels transiting the Red Sea in late 2023 through early 2024 that caused a re-routing of several weeks and a large amount of money to their voyages between Asia and Europe (IEA, 2024). This event illustrated the practical implications of chokepoint vulnerability in terms of energy security and how the Bab el-Mandeb threat could be monetized by Iranian proxy forces to have a cost on the global economy.

Theme 3: Oil Price Volatility as a Geopolitical Tool.

The third theme was the contribution of oil price volatility as a result, and, in some ways, as a calculated tool in Iran-Israel warfare. The literature has determined that the continuing geopolitical risk premium linked to the Iran-Israel clash is a major and permanent aspect of world oil price relations and entails economic costs that spread widely beyond the parties to the conflict at hand.

The evidence reported various particular events where Iran-Israel related developments had quantifiable oil price impacts. The 2012 increase of U.S.-led sanctions against Iran, with Iranian threats to close the Strait of Hormuz, was linked to oil prices rising to an approximate of fifteen percent in the first quarter of 2012, the biggest increase since the 1991 Gulf War (Vatansever, 2020; Smith, 2019). In January 2020, the assassination of IRGC General Qasem Soleimani caused a price spike of about four percent. Over a background risk premium, which the literature has found has increased five to fifteen dollars per barrel to oil prices during high-tension periods, these episodic effects impose a large and enduring economic cost to the conflict on importing economies (Caldara and Iacoviello, 2022).

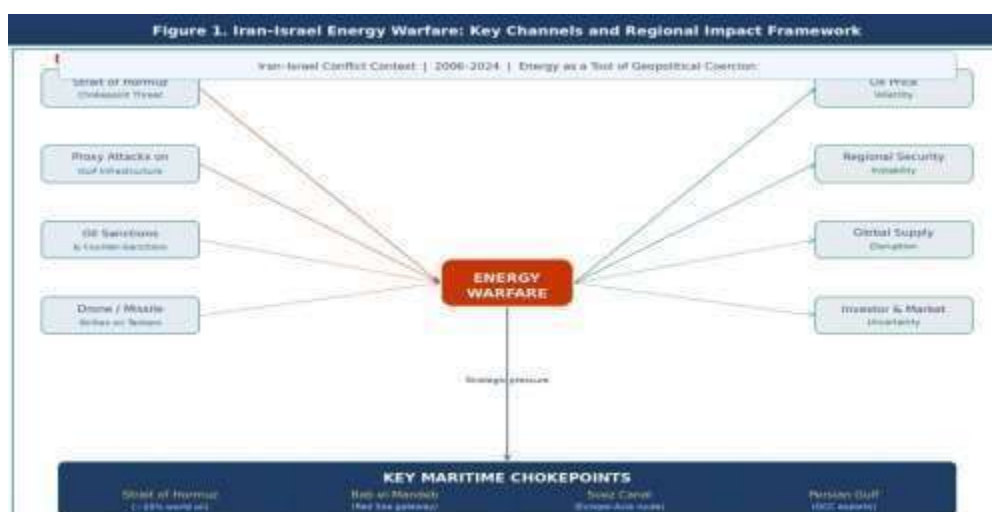


Figure 1. Iran–Israel Energy Warfare: Key Channels and Regional Impact Framework. This conceptual diagram illustrates the primary tools deployed by Iran, the major impact zones on regional security and global markets, and the critical maritime chokepoints through which



energy warfare pressure is applied. Source: Compiled by author from IEA (2023), EIA (2024), Bahgat (2011), and Cordesman (2022)

The literature has also recorded that at one time Iran has strategically sought to control the price of oil by tapping the threat of supply reduction to keep the price at a high level to benefit their own revenues but cause a cost to their enemies. Colgan (2013) believed that this advantage to its own revenues and disadvantage to opponents. This interdependent relationship between energy-exporting states, where both can threaten and gain by disrupting supply, is a perverse structure of strategic incentive, which, according to Colgan (2013), makes it difficult to manage energy warfare. Saudi Arabia and other GCC countries are even more in the middle of this game: their revenues are enjoying a high price, yet their infrastructure faces the danger of the Iranian attacks that drive these higher prices, providing an awkward overlap of interests between the opponents in the energy sector.

Theme 4: Razing the Regional Energy Security Architecture.

The fourth theme of the analysis was a gradual undermining of the regional energy security architecture under the cumulative impact of the Iran-Israel conflict and related proxy warfare. The literature reflected the way recurrent attacks of the energy infrastructure, coupled with the existing threat environment, have fundamentally changed the risk calculus of energy investment in the Middle East and impaired the stability of the regional energy security system on which the global oil market relies.

The data recorded a sharp rise in security costs of energy activities in the Persian Gulf region, reflected in the high insurance premiums to transport tankers through the Strait of Hormuz and the Gulf waters, high security expenditures by the Gulf oil producers, and higher risk-adjusted returns requirement to foreign investment in Gulf energy projects (Lahn and Stevens, 2011; Fattouh and Sen, 2015). The threat environment also had a long-term investment-deterrence impact as documented in the literature: major international oil companies are reported to have considered the threat of conflict in their Gulf investment decisions, and to have shifted capital to less geopolitically exposed assets in North America, Africa, and offshore of Europe. This effect of deterring investment has long-term implications on the Gulf production capacity and consequently on world energy security.

The structurally most important discovery in this theme was the concentration of critical energy infrastructure and the lack of sufficient protective redundancy. The Abqaiq attack showed that a relatively small number of precision strikes could put out of commission a disproportionately large portion of the oil processing capacity in the world, showing a weakness in the energy security architecture in the region that has not been appropriately mitigated since then. The literature had reported few improvements in dispersing or hardening the critical energy infrastructure against the threat of precision strikes, and it was implied that the vulnerability exposed by Abqaiq was not yet adequately addressed (Fattouh and Sen, 2015; Vatansever, 2020).

Theme 5: Weakness of Existing International Governance Structures.

The fifth theme identified during the analysis was the ineffectiveness of the current international governance structures, in international law, energy market regulation, and conflict management, to meet the particular challenges of energy warfare in the Iran Israel conflict. This is one of the themes that were best supported by a variety of sources, as opinion leaders in law, economists, and security analysts all came to the same conclusion that current frameworks were created in a different strategic environment and are far short of what the current environment requires.



The literature reported an important legal uncertainty in applying international law to energy warfare especially on the legality of attacks on energy infrastructure as a part of an armed conflict, rights of neutral states whose energy shipments are interdicted, and the threshold of economic coercion by disruption of energy, which is regarded as an act of war (Blank, 2013; Goldenberg and Dalton, 2015). Both Iran and those who are aligned to the Israeli have used these ambiguities to achieve their energy warfare goals without being legally blamed, making it hard to respond to them internationally. These legal issues are further complicated by the proxy nature of much Iranian energy warfare activity, since it is hard to meet the conditions of attribution to hold actors legally accountable when non-state actors formally independent of Iran, but using Iranian-supplied weapons, are involved.

On the economic governance level, the literature reported the drawbacks of the strategic petroleum reserves coordination systems of the International Energy Agency as a reaction to the energy warfare, which caused the disruption of supply. The mechanism of releasing reserves introduced by the IEA was originally created to meet sudden, massive physical supply shocks, as opposed to the threat-based, persistent price premiums that define energy warfare in the Iran-Israel case (IEA, 2023). It was found that the development of an alternative energy trade system based on the Chinese and Russian markets, which are not subject to the pressure of Western sanctions, but which is organized according to the principles of a different financial system, presents a particularly serious governance challenge that weakens the effectiveness of the energy warfare sanctions instruments (Goldenberg and Dalton, 2015; Katzman, 2022).

DISCUSSION

The five themes discovered in the course of the thematic analysis, in their turn, can provide a clear and disturbing strategic image: the energy warfare has become a part of the Iran-Israel conflict, a planned and strategically important one, with an impact that is far beyond the two-country fight to the security relations of the region and the hydrocarbon markets of the world. Iran has grown and exercised energy warfare with deliberate strategic intent, leveraging structural geographic factors and an elaborate proxy network to increase systemic leverage on the global energy systems out of proportion to its traditional military forces. These results are well explained by the theoretical construct of asymmetric warfare, especially the analyses of energy coercion strategies by Bahgat, (2011) and the discussion of the petrostate strategic behavior by Colgan, (2013): Iran has already managed to operationalize its energy warfare capabilities as a deterrent tool and as a coercive tool in a manner that reveals underlying incompatibilities between the threat and the extant

The results on the volatility of oil prices and infrastructural susceptibility have direct effects on the management of the global energy markets. The risk premium related to the Iran-Israel conflict is a continuous economic externality that is inflicted on the global economy at the hands of a. a bilateral conflict, which is a type of distributed harm, which does not fit into the current international governance structures to be addressed or compensated. The gradual loss of the regional energy security framework under cumulative pressure of conflict, as recorded in Theme 4, is pointing in the direction of a rising vulnerability curve, rather than a stabilization curve, indicating that without major policy action, the energy warfare relationship in the Iran-Israel conflict would be anticipated to bring about serious market oil shocks with time. The inefficiency of the current international governance structures, determined in Theme 5, shows the urgency of creating new legal, diplomatic, and economic tools that would be sufficient to the particulars of twenty-first century energy warfare.



One of the most significant conflicts of the findings is the dual nature of the oil revenues to keep the conflict itself alive. Constricted Iranian oil revenues due to sanctions have occasionally tamed Iranian regional conduct, whereas oil price surges, partly maintained by the Iran-related risk premiums have enabled Tehran to finance its proxy network and military initiatives. This creates a difficult policy dilemma: policies that aim to limit Iranian energy incomes can also lessen the economic pressure that motivates diplomatic efforts, and increased prices of oil caused by conflict risk may inadvertently finance the capabilities that create that risk. This dynamic of feedback needs to be studied more rigorously in future research, which it has great implications on the design of effective policy responses.

Conclusions

This qualitative research paper investigated energy warfare in the Iran–Israel conflict and its impacts on the security of the region and world oil markets using a purposively selected corpus of secondary literature published in 2005-2024 and systematically analyzed using thematic analysis. Five key themes were determined: energy disruption as an intentional asymmetric strategy, the geopolitical centrality of maritime chokepoints, oil price volatility as a geopolitical tool, undermining regional energy security, and the failure of existing international governance frameworks. Collectively these results stand to confirm the inference that energy warfare has been a structuralized and strategically important aspect of the Iran Israel conflict, which imposes significant and sustained costs on regional stability and global energy markets which current policy frameworks lack the capacity to address. Iran has acquired an advanced multi-layered energy warfare capability that leverages geographic advantage and proxy networks to create asymmetric leverage to global energy systems. The international community has so far been unable to come up with sufficient governance responses to this challenge, and as a result, global energy markets continue to be vulnerable to disruption by conflicts and the regional energy security architecture remains in a weaker state

Recommendations

The results of this research lead to five policy recommendations. To begin with, the international community ought to seek a universal regime of protection of energy infrastructure of critical Gulf facilities, multilateral agreement on the prohibition of attacks on civilian energy infrastructure, increased early-warning and defence capabilities on high-value facilities like Abqaiq, and increased decentralization of processing capacity to avert single-point-of-failure vulnerabilities. Second, key oil-importing states need to hasten the diversification of import sources and pathways, decrease reliance on the Gulf chokepoints by augmenting infrastructure in seaborne imports of Atlantic Basin suppliers, quickening pipeline infrastructure building, and raising investment in domestic energy options. Third, the IEA coordination mechanisms of strategic petroleum reserves should be revised to respond to the unique nature of the price disruption caused by energy warfare, such as the creation of measures to release reserves when sporadic geopolitical risk premiums are being experienced instead of when physical shortage of supplies is acute. Fourth, a new multilateral legal framework of energy warfare ought to be established under the auspices of the UN, specifying how international humanitarian law applies to the energy attacks, offering accountability measures when an energy attack is perpetrated by a proxy, and offering compensation measures to the neutral states that suffers as a result of energy warfare between third parties. Fifth, diplomacy (handling the Iran-Israel confrontation) must specifically consider the energy security aspects of the problem since the only way to achieve a lasting de-escalation is to ensure that the energy warfare capabilities and doctrines adopted by both parties have been factored into their strategic postures.



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