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The destruction of the energy sector in Syria during the war 2011-2020



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Economic Research



Harmoon Center for Contemporary Studies

Harmoon Center for Contemporary Studies is an independent nonprofit research institution, focusing on the production of political, societal and intellectual studies and research related particularly to the Syrian issue, and the possible outcomes of ongoing conflict in Syria. The center is concerned with bolstering civil society and democratic awareness. Harmoon Center also works on Arab issues and related conflicts, as well as Arab regional and international . relations

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Introduction

The Syrian people paid a heavy price in the ten-year war ignited by the Assad regime upon protests calling for the restoration of the people's rights to freedom and dignity.

As a result of the unprecedented violence used, Syria emerged as a fragile state with most of its vital sectors destroyed. Also, the war had disastrous consequences on Syria's economy. In fact, the Syrian pound collapsed and lost its purchasing value, unemployment rates rose and job opportunities decreased, while poverty reached unprecedented levels in the history of the country.

If we want to analyze the Syrian war, we must go through the direct and indirect catastrophic effects of the war on the vital service sectors in Syria, including the problematic energy sector, and this for many considerations:

First, the sector's abundance of financial assets, equipment and machinery, which were the target of the various parties to the conflict in Syria. In more detail, we cannot ignore Russia's tireless effort to acquire Syria's gas and phosphate resources. Nor can we ignore the ongoing conflict of many parties, like ISIS and the SDF (USA's ally) for example, over oil wells for their own financial interests.

Second, the energy sector, especially oil and gas, played an important role in the interrelationships between the various parties to the conflict. In fact, the rivalry between these parties as well as their military operations does not seem to affect their commercial relations and their secret understandings, knowing the financial gains behind these deals.

Third, the destruction that occurred in this sector significantly affected various aspects of the civilian life in Syria. Let's take the example of Power cuts.

Power cuts occurred mainly in the areas witnessing military actions, especially after the destruction of power plants. They affect the civilians' ability to survive and burden them with additional electricity bills along with other burdens related to the war. Such burdens include the difficulty to obtain fuel, like gas for home cooking, diesel for heating, and benzine for transportation, after price increases.

This research assesses in detail the devastation in the energy sector: oil, gas and electricity, during the ten-year-war in Syria. It also reviews the historical aspect of oil and gas production, and the impact of war and military operations on these three components of the energy sector.



Moreover, it estimates the import revenues of the parties that had control over the oil and gas fields in the northeast of Syria, and exposes the Iranian and Russian covetousness of the Syrian hydrocarbon sector.



Chapter One:





The Oil and Gas sector in Syria before 2011

The evolution of oil and gas production in Syria:

Due to its small reserves and production, Syria is not considered an oil rich country. The total reserves of oil discoveries until the end of 2006 amounted to about 22 billion barrels of proven oil, in addition to about 2 billion barrels of potentially confirmed oil, i.e. a total of 24 billion barrels of crude oil. It is known that what can be extracted from crude oil is the least part, and this depends on technology, knowledge, drilling experience and stock management, and therefore the productive part does not exceed about 7 billion barrels, or less than 30% of the total reserves.

Until 2010, about 5 billion barrels were produced (see Table 1), but in that year no more than 2 billion barrels of crude oil were produced. That's at best estimates what can be produced per year unless new oil discoveries are made, and they are enough to produce more than 300,000 barrels per day for 20 years.

Total Reserve Billion Barrels	Unproducible Billion Barrels	Producible Billion Barrels	Produced till 2006 Billion Bar- rels	Remaining Unpro- ducible
24	17	7	5	2

Table No. (1) Oil reserves in Syria plus remaining part that can be produced in 2010

The first discoveries of oil in Syria date back to the fifties. Its production began in 1968 in the fields of Hasaka, northeastern Syria, by the Syrian Petroleum Company SPC.

After foreign companies entered Syria in the second half of the seventies, and oil fields were discovered in Deir ez-Zor, production began to increase as of 1985; starting in the fields of the Euphrates Oil Company (Shell), followed by Deir ez-Zor Oil Company (French Elf Aquitaine Company), with production reaching its peak in 1996 at a rate of 620,000 barrels per day.

During the second half of the eighties, the increase in oil production helped Syria overcome its stifling economic crisis. However, starting 1996, oil production began to decline gradually, at a rate of 5% annually (see Chart No. 1) to reach about 380,000 barrels per day in 2010.



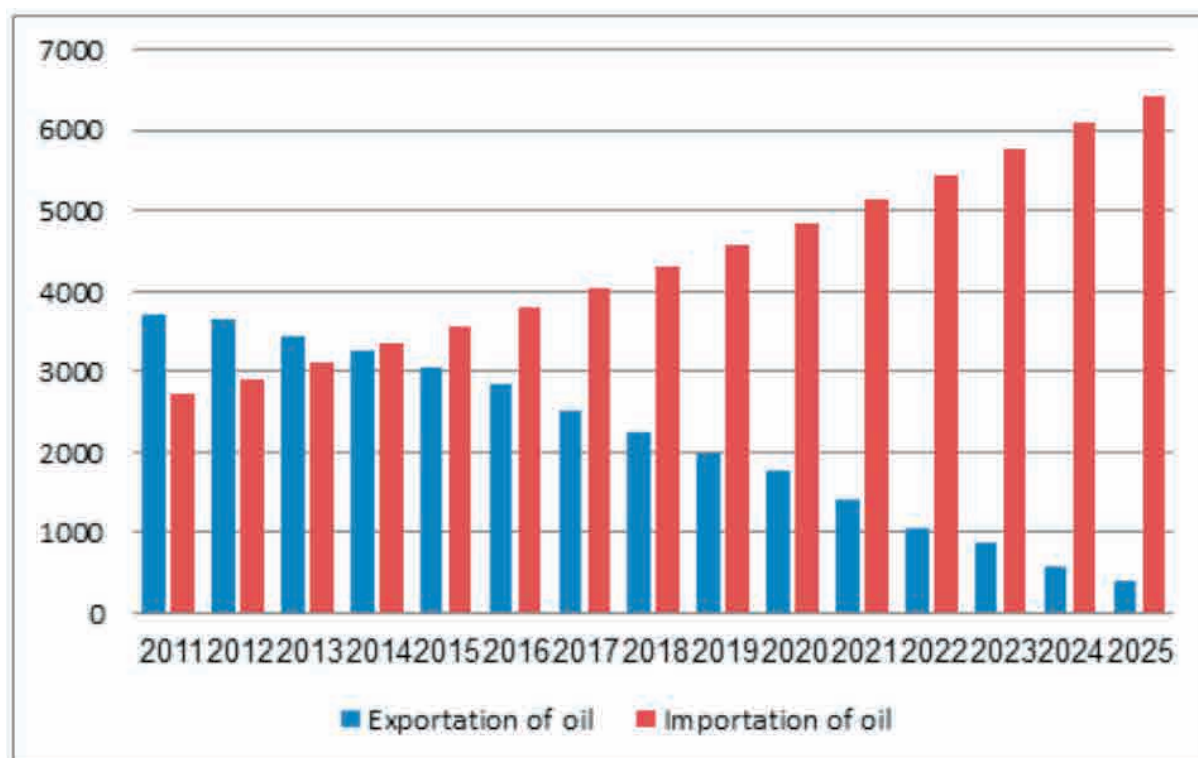
Irrespective of the war, the decline in production along with the increase in internal demand would have turned Syria after 2013 into a net oil importing country, which would have been a burden on the budget. See graph #1

	Company name	Daily production rate\2010 (1000 barrels)	Investor	Fields in which the company operates
1	Syrian Petroleum Company	180	Governmental	Sweden's Karachoko oil fields, Rumailan, Derico Alian, Ouda, Al-Jibsa, Gouna, Tishreen, Kobeba, Al-Safih, North Al-Hussein, Tuinan, Akram and Al-Qadir
2	Al-Furat Petroleum Company	100	Shell Company	The oil fields of Taym, Omar, Al-Ghurba, Sijan, Al-Malih, Azraq and Al-Tanak
3	Al-Bashari Company	5		Wadi Obeid field.
4	Khabur Petroleum Company	12		Oil field of Al-Kashma in Al-Boukamal countryside.
5	Deir-Ez-Zor Company	27	Total	Oil field of Tabia, Jaffra, Jahar, and North Atallah.
6	Hayyan Company	10 barrels of condensate	Croatian company Ena	Gas field of Jahar west of Palmyra city
7	Kawkab oil company	6		Kabina oil field
8	Awda Petroleum Company	18		Awda oil field, Tishreen field and Sheikh Mansour
9	Dujla Petroleum Company	21		Al-Youssefia and Kherbet
10	Bukamal Petroleum Company	1		Al-Kashma oil field in Al-Bukamal countryside
11	Ebla Company	2.2 Condensate	Petro-Canada	Shaer Gas Field - Ebla Gas Plant
	Total Production of 2010	382		

Table No. (2) Oil companies operating in Syria in 2010 and their average daily production.

Source: Samir Seifan, Effects of the Crisis on the Oil and Gas Sector, unpublished study.

Diagram No. (1) shows the trade balance of oil export and import.



Source: Oil Marketing Office in Syria SYTRO

Areas of oil and gas production in Syria before 2011:

In 2010, the regions of oil and gas production in Syria were divided into three main areas: two producing heavy and light oil, and a third producing gas. The first area is located in north-eastern Syria in the Al-Hasakah Governorate where heavy oil is produced since 1968. The Syrian Petroleum Company (SPC), a government-owned company⁽¹⁾, exploits all these fields.

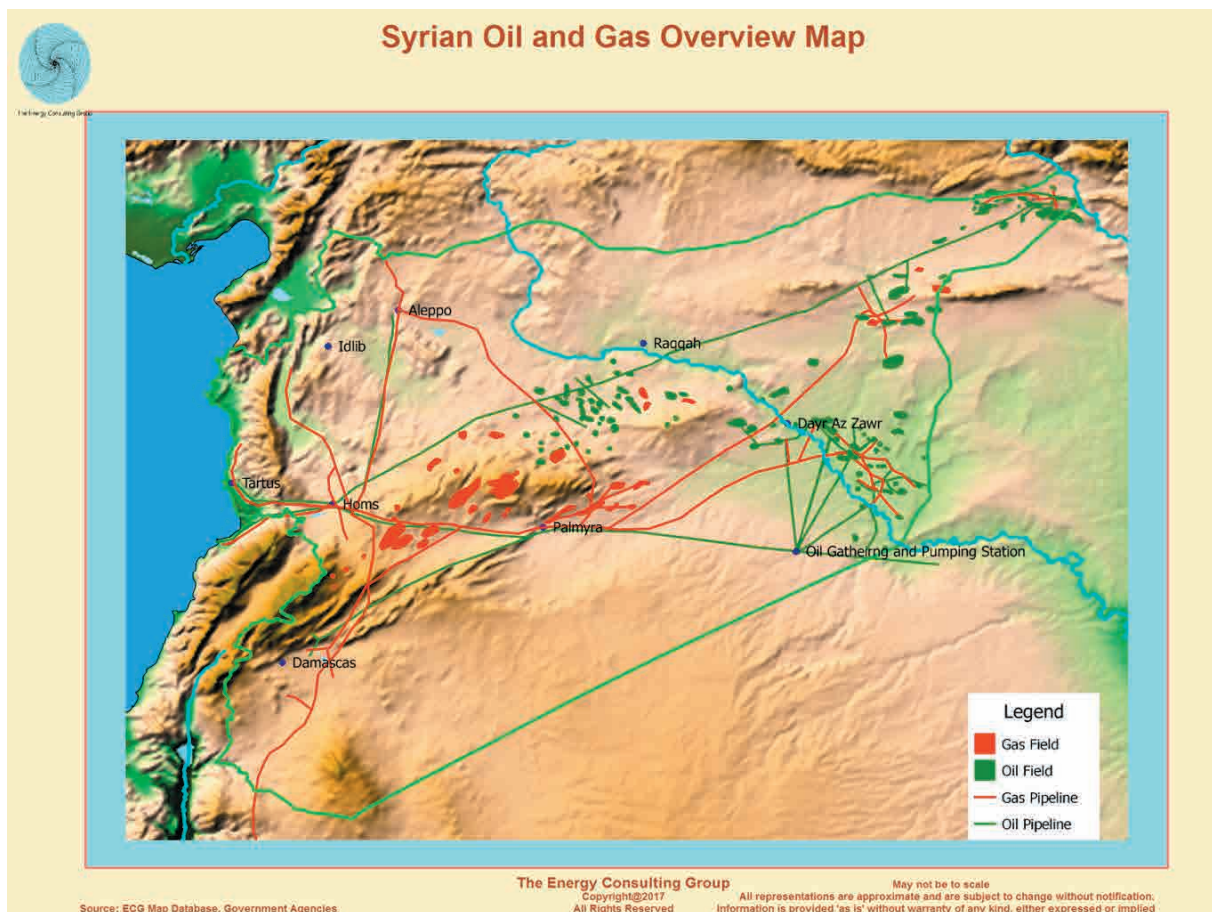
The second area is located in eastern Syria, in Deir ez-Zor specifically. Light oil is produced since 1985 and its fields are exploited by several foreign companies. The third region is located in the middle of Syria, in the Palmyra desert. It is a gas production area, and its fields are invested either by the Syrian Gas Company (a governmental company), or by foreign companies. For information on the oil companies operating in Syria, see Table No. (2) below.

(1) Besides GulfSands Oil Company

In 2010, Syria had two oil refineries, in Homs and Baniyas (see Table No. 3), in order to provide Syria with Petroleum products, with the remaining quantity being exported.

No	Refinery Name	Refining Capacity	Date of	Country of Origin
1	Homs Refinery	110,000 barrels per day	1958	Czechoslovakia
2	Baniyas Refinery	120,000 barrels per day	1980	Romania

Table No. (3) shows the refining capacity of two oil refineries in Syria



Map No. (1) shows the geographical distribution of oil and gas refineries and pipelines in Syria

Source: The Energy Consulting Group

Revenues from oil exports before 2011:

The rise in oil production in Syria since 1985 has helped Syria overcome its stifling economic crisis in the second half of the nineties. This led to a kind of economic stability throughout those years. Despite the decline in production, it continued to cover a large part of domestic consumption, and to make up most of the treasury's domestic tax revenues. The surplus is exported in hard currencies.

Oil revenues constituted 40-50% of state revenues in the nineties before declining to 24% in 2005, then to 21.5% in 2010. The sector constituted about 10-12% of Gross Domestic Product in the nineties, compared to 7.1% in 2005, and 5.4% in 2010. See Table No. (4)

years	1990	1995	2000	2005	2006	2007	2008	2009	2010
Oil revenue as a percentage of output	9.46%	12.91%	12.31%	7.1	7.3	4.9	5.2	4.6	5.4
Budget revenue as a percentage of output	41%	46%	51%	24	25.5	22.7	19.4	21.9	21.5

Table No. (4) shows the contribution of the oil sector to both the GDP and the state treasury for the period 2005-2010

The source is the report of the International Monetary Fund mission to Syria 2010, the Syrian Petroleum Company (SPC) and the Central Bank of Syria

After the decline in production and in exports, and the increase in internal demand for derivatives, the country resorted to importing, especially diesel and fuel, and oil turned negative on the budget. This was reflected in the budget revenues as a deficit in hard currencies and had a significant negative impact on the budget itself, since oil exports constituted the main source of hard currency in Syria.

The Syrian government was following a subsidy policy on energy prices, especially diesel and fuel. It was selling them at less than international prices and the prices of neighboring countries, especially diesel. see table (5)



Material		Import price		Local Production Price		Local selling price		Subsidy amount per ton	
Arabic Name	English Name	Dollar per ton	Syrian Pound per ton	Dollar per ton	Syrian Pound per ton	Dollar per ton	Syrian Pound per ton	Local production subsidy	Import Subsidies
Mazout for burning	Gasoil	680	32300	665	31,588	501	23,798	7,790	8,503
Diesel	Diesel	716	34010	682	32,395	556	26,410	5,985	7,600
Liquid gas	LPG	779	37003	730	34,675	421	19,998	14,878	17,005
Opel Fuel	HFO	468	22230	437	20,768	185	8,788	11,970	13,443

Table No. (5) The amount of support provided by the Syrian state to the prices of Petroleum products before 2008

The increased consumption of diesel led to the local production's failure to meet the market needs; hence resorting to importation. The increase in diesel consumption was due to an increase in population at an annual rate of 2.45%, and by extension the increase in the number of cars, and in means of transportation which the government allowed to import without restrictions, after decades of restricting them.

However, the significant increase in demand for diesel in the local market was also due to the increased smuggling of the substance to neighboring markets, especially Lebanon, due to the large difference in the price of a liter of diesel for the final consumer, between the Syrian market and neighboring markets.

For example, the price of a liter in Syria in 2005 was 7 Syrian Pounds per liter, or about 14 US cents, while its price in Lebanon was equivalent to 28 SP, in Turkey it was equivalent to 80 SP, and in Jordan it was equivalent to 18.5 SP. Its global price was equivalent to 22 SP. A network of large and small smugglers was participating in this black activity, under the noses of the government's agencies, with no serious measures being taken, due to the participation of

many officials (large and small) in this corrupt activity.

Smuggling has led to a significant increase in the quantities and value of imported diesel, with illogical leaps (see Table No. 6), and the public treasury has paid the cost.

Year	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
1000 tons	1300	1200	2000	2400	3420	3424	4319	3749	818	1977
Ton price	205	201	247	340	520	520	657	950	483	680
Million \$	266	241	494	816	1778	1780	2837	3561	395	1344

Table No.6 shows quantities of imported oil and prices

By comparing the costs of diesel imports with the country's net share of oil export revenues, we conclude that the value of oil imports is much higher, especially since 2005. This has negatively impacted the state budget.

Year	The value of crude oil exports	he value of derivatives exports	The total value of exports	The dues of Service Contract Companies	Share of the National Side	Value of Imported Diesel
	Million \$	Million \$	Million \$	Million \$	Million \$	Million \$
2001	3108	561	3669	842	2827	266
2002	3332	531	3863	893	2970	241
2003	2787	470	3257	924	2333	494
2004	2093	580	2673	1046	1627	816
2005	2978	661	3639	1229	2410	1778
2006	2102	565	2667	850	1817	1780
2007	3694	500	4194	965	3229	2837
2008	4687	600	5287	1163	4124	3561
2009	2843	450	3293	1087	2173	1395
2010	4302	500	4802	1056	3746	1344

Table No.7 shows value of crude oil imports and shares

Source: Oil Marketing Bureau in Syria SYTROL and expert estimations.



The government significantly increased the diesel and fuel prices, which has led to a double impact. On one hand, it has reduced the amount of derivatives smuggled to neighboring countries, thereby positively affecting the state budget; on the other hand, it had a negative impact on the costs of agricultural and industrial production, and of lifestyle, without the authorities implementing alternative policies that counter-effect the negative consequences.

These negative effects combined with the effects of the liberal policy imposed by Bashar al-Assad, who inherited power from his father in July 2000, also combined with the decades-long failure in public financial management and with many other factors, snowballed into the people's anger explosion in March 2011.



Chapter Two:



The start of the war in Syria and its impact on the oil and gas sector.

Preamble:

The Arabic Spring wave emerged in Tunisia in late 2010. It soon extended to other Arabian countries, like Egypt, Libya and Yemen. The wave reached Syria in March 2011. This outbreak was the result of many factors, with no room here for elaboration. The peaceful demonstrations/protests that took place in Syria started in Daraa in March 18, 2011, and soon covered all areas. They lasted for six months before turning into an armed conflict in the beginning of 2012 as a reaction to the violence used by the Regime to repress the protests. The regime deployed all kinds of weapons: heavy, light, artillery, air force and aircraft. After the regime rejected Arabian and Regional suggestions (by Saudi Arabia, Qatar, Arab University, Turkey) to negotiate with the Opposition in order to reach a bargain and thus protect Syria from the consequences of civil war, the Opposition gained Arabian and regional support. Iran and Russia did not refrain from providing political, military and financial support to the regime.

Due to millions participating in the population revolt, with hundreds of thousands voluntarily taking up arms, the Regime started losing its control over large areas in Syria. The Opposition factions, that were formed spontaneously, advanced but remained fragmented even after gaining control over these areas, including the gas and oil fields.

By Summer 2012, all Syrian regions were outside the Regime's control, Deir ez-zor and the Palmyra Badia among others.

The extension of the armed conflict over time opened the door for the involvement of many parties, next to the two main conflict parties, namely the Syrian regime and the armed Opposition.

Iran intervened through the Iranian Revolutionary Guard Corps and through its militias such as "Hezbollah", "Fatimiyoun" and "Zainabiyoun", in addition to extremist organizations such as al-Qaeda (Jabhat al-Nusra) and the "Islamic State / ISIS".

Under the pretext of "fighting terrorism", the international coalition led by the United States of America was established in late 2014 with the aim of eliminating ISIS.

This led to the United States of America entry into Syrian territory where it established military bases in the northeastern regions of Syria (see picture below No. 1). The USA supported

the Kurdish forces “the Democratic Union Party / PYD”, and created an allied military force called the “Syrian Democratic Forces⁽²⁾».



Photo No1 shows American soldiers in Al-Omar oil field, following the International Coalition and PYD taking control of it in October 2017

Source: <https://bit.ly/3efSA9h>

The change of control over the oil fields in Deir ez-Zor governorate in 2012:

Since 2012, Syria’s control map has encountered changes based on changes in power on the ground. The forces controlling oil and gas fields have also changed, and different forces and groups have controlled it successively. Table No. 3 below shows the change in control (see Table 8).

(2) The SDF is made up of Kurdish and Arab fighters, but the control and command is for the well-armed Kurdish military forces. And there is the Iranian current that dominates the decision, and one of the most prominent figures within this current is Jamil Bayek



Field Name	1 st Control		Second Control		3 rd Control	
	Controlling party	Date of exit of regime forces	Controlling party	Date of control	Controlling party	Date of Control
Al-Omar Field.	Sharia Commission.	November 2013	ISIS	July 2014	PYD supported by the International Coalition	October 2017
Al-Tanak	Ebn Al-Kaym Brigade (Syrian Opposition Factions)	2012	ISIS	July 2017	PYD supported by the International Coalition	October 2017
Al-Ward	Jaafar Al-Tayyar Brigade (Syrian Opposition Factions) ⁽³⁾	November 2012	ISIS	July 2014	Syrian regime forces and Iranian militias in late 2017 Then Russia expelled these militias in the middle of the year 2020.	Middle of the year 2020
Al-Taym	Military Council in Muhassan (Syrian opposition factions)	Late 2012	ISIS	July 2014	Syrian Regime Forces	September 2017
Al-Jaffra	Syrian opposition factions	November 2017	ISIS	July 2014	PYD supported by the International Coalition	September 2017
Konico gas plant	Armed opposition factions in late 2012, then the Sharia Commission took control of this field in November 2013	November 2017	ISIS	July 2014	PYD supported by the International Coalition	September 2017

Table No. 8 shows the distribution of control over the oil fields in Deir Ezzor Governorate during the war years.⁽⁴⁾

Source: Research Team.

(3) Al-Aarabiya Network, Syrian Opposition takes control of Al-Ward oil field. <https://bit.ly/3vHO9d4>

(4) Source: Prepared by the research team.



Deir ez-Zor oil outside the control of the Syrian regime after 2012:

After the revolution turned into an armed conflict, and the battles with the Syrian regime forces began; all local and foreign oil companies withdrew from Deir ez-Zor governorate after closing the oil wells.

The Opposition factions, now controlling most of Deir-Ez-Zor governorate, were fragmented, and had no unified leadership and no prior plan to benefit from oil facilities, which led to improper operation of the oil and gas fields, and thus to their failure of generating income for funding military operations. (Whereas the PYD forces exploited the fields properly, thereby increasing their revenues and financing their operations). Instead, the factions retreated, making space for some local armed groups that were equally unable to control these fields⁽⁵⁾. A large part of the fields was looted, field equipment was stolen and factories were vandalized.

The fields were severely damaged, especially from exploiting wells in primitive ways, we will come to that later. Before the opposition factions took control the fields were partially destroyed at the behest of the regime and field workers stole part of the equipment and tools to disrupt production and deprive the opposition factions from benefiting from the fields.

The military battles that took place in the oil and gas fields due to the presence of the regime forces there to protect them led to severe destruction in the fields.

An example would be the military operation carried out by the Syrian opposition factions with the aim of controlling the T2 oil station (Al-Kam), due to its strategic location on the Syrian-Iraqi border and to the military equipment it contains. (See Picture No. 2). Here the Syrian opposition's lack of planning and strategic action appears, since they focused on expelling the Syrian regime forces without thinking about the next steps.

(5) Journalist Abdel Qader Dwaihi, in the interview with him for this research, stated that when liberating the Al-Ward oil field, he mentioned to his colleagues that they should stay away from oil wells and their equipment and oil pipelines, because they do not know how to deal with them, and because they may be dangerous and potentially explosive. This confirms what we have said about the fact that benefiting from or refining crude oil was not a planned matter, but rather a matter that was discovered later. There may have been an instigation by the regime to steal the equipment and sell it, to deprive the opposition of investing it for its benefit.



Picture No 2 shows fire and destruction in Station T2 (Al-Kam) following military battles between the Syrian regime forces and the armed Opposition factions in April 2013.

Source: Orient Network, Deir-Ez-Zor, Victory Coming from the East <https://bit.ly/3t9NorK>

The Al-Omar field in the Al-Mayadin area is considered the most important oil field in Deir ez-Zor governorate and belongs to the Dutch Shell Company (Al-Furat Oil Company is the operating company) and was the last stronghold of the Syrian regime in Deir ez-Zor. There was almost unanimity among The Syrian opposition factions to avoid attacking it⁽⁶⁾. However, with the approach of the Islamic State (ISIS) and its attack on the (Koniko) gas field the Sharia committy⁽⁷⁾ decided to attack the field to cut off the road to ISIS.

Therefore, the Sharia committy headed by Jabhat al-Nusra attacked al-Omar oil field in November of 2013 making path for the regime forces to withdraw from the field⁽⁸⁾ while taking control of the military vehicles and equipment that were located inside.

The field includes a gas plant, an electric power plant and major production stations, called the Central Production Facility CPF.

Near the field there is an entire residential city in which the administrative, engineering and

(6) Interview conducted by the Research team with political researcher Saad Shareh

(7) The Sharia Committee was established in Deir ez-Zor Governorate in the third month of 2013, and it consists of Jabhat al-Nusra, the Taliban movement, the Mutah Brigade, the Ibn al-Qayyim Brigade, the Qaqaa Islamic Brigade, the Ikhlas Brigade, the Rahba Brigade. Ahrar al-Sham and the Army of Islam. This was after Zahran Alloush visited the countryside of Deir Ezzor.

(8) Al Jazeera News Network, The Syrian Opposition Controls the Al-Omar Oil Field, November 2013, <https://bit.ly/339JOmT>



technical staff of the Omar field lived. Some of them remain there and even visit from time to time despite the field now being under the responsibility of a group affiliated with “Jabhat Al-Nusra”. The said group has been managing the field in a rudimentary manner.

When “Jabhat Al-Nusra” took control of the field in November 2013 a large part of the wells inside the field had been out of service due to the absence of maintenance and continuous military operations over the previous three years.

Al-Nusra, through its staff⁽⁹⁾ and some employees of the Euphrates Oil Company, tried to repair these wells and succeeded in restoring some of them⁽¹⁰⁾⁽¹¹⁾, including the power plant⁽¹²⁾, to a minimum level to production.

At that time, Jabhat al-Nusra owned two electric refineries for oil refining and was receiving financial revenues of 50-60 million Syrian pounds per day⁽¹³⁾, which go solely for the benefit of Jabhat al-Nusra without clear knowledge of their fate⁽¹⁴⁾.

However, the time period during which “Al-Nusra” continued to benefit from this field was about seven months, as ISIS controlled the field and the entire countryside of Deir ez-Zor in mid-2014.

(9) An interview over the phone with one of those who worked in the oil field during this period, an engineer who refused to reveal his name for personal reasons, telephone interview on April 30, 2021. We reserve the right to mention the names of this group at the request of one of the persons we interviewed during the preparation of this research, this is due to many considerations, the most important of which are the security and tribal aspects.

(10) Extensive sabotage of the field occurred in the first days that followed taking control of it, despite the fact an agreement between the workers and engineers who were present at that time, and the factions that attacked the field was in place. Al-Islamia, August 2015.

(11) ¹¹ After Jabhat al-Nusra allowed the old staff to work in the field, with the aim of restoring it. This was mentioned by a leader of al-Nusra, in an interview on Al-Jazeera channel in November 2013, <https://cutt.ly/ObEwCBp>

(12) ¹² Al-Jarirah News Network, The Syrian Opposition's Control of the Al-Omar Oil Field, November 2013, <https://bit.ly/3x-MDxM>

(13) ¹³ There was a third refinery belonging to Jabhat al-Nusra in the Koniko gas field, but it did not continue to operate for a long time, for reasons that we will explain later.

(14) ¹⁴ Some reports mention much higher numbers, which the Shariah Committee (Jabhat al-Nusra) earned from the wells of the Al-Omar oil field, and it was estimated at about \$480,000 per day, but what is certain is that the revenues from these wells remain unknown and their fate is unknown. Ain al-Madina magazine, Deir ez-Zor oil from the revolution to the Islamic State, August 2015.



Opposition factions attempt to exploit oil fields:

After the expulsion of the Syrian regime forces from most Deir-Ez-Zor areas, especially from the oil fields and facilities, people discovered that it is possible to extract oil by primitive methods, by directly opening the well. As a result, obtaining crude oil became possible with a simple process, whereby crude oil is separated into Petroleum products of poor quality.

This is done in such primitive ways that lack the necessary means of protection and safety, and that, at the same time, destroy wells and the environment. The separation process is based on the principle of heating large containers of fuel over fire: The lighter derivatives evaporate first, then the heavier ones. The class of derivatives is determined through color, and derivatives are distinguished from each other based on color as well.

That's how they obtain gasoline and diesel of poor quality which at least meet their need for derivatives in the absence of oil products.

These derivatives were sold in local markets for the benefit of the faction controlling the field, which belongs to a clan residing in the field area. The proceeds were either used to purchase weapons and ammunition, or part of them was sent to the same faction in other regions in Syria. Journalist Abdul Qader Dwaihi mentions that a military commander told him that part of the revenues from oil wells in the Tanak field, about 30-40%, were sent to military factions in Deir ez-Zor, Al-Madina, Qalamoun, and Eastern Ghouta⁽¹⁵⁾.

There have been many clashes, including bloody ones, between the opposition factions over controlling the oil wells, with each clan deeming it their right to control the wells facing the village in which they reside.

Among the many examples of these armed clashes, the fighting that took place over one of the oil wells in the countryside of Al-Bukamal city between the people of the villages of Al-Susah and Al-Shaafa, and which left many dead or wounded on both sides according to a Al-Boukamal local⁽¹⁶⁾.

For this reason, and for fear of ominous repercussions, there was no desire from any military faction in Deir ez-Zor provinc to tighten control over these wells and oil fields. In fact, these factions believe that any battle of this kind could turn into a war over oil wells, which is certainly a trap, especially with the battle with the regime still ongoing.

(15) An interview conducted by the research team with journalist Abdul Qader Dwaihi from Syria TV, on April 27, 2021.

(16) An interview with (A.A.), who refused to reveal his name for personal reasons, from Al-Bukamal over the phone, on May 3, 2021.



In this same period of time, and as a result of the opposition's absence of a central management capable of ruling the area and preventing abuses on these facilities as well as exploiting the fields, another type of attack emerged, namely the bombing of oil pipelines in some of the villages through which they pass.

Those armed groups have sought to obtain some gains through "protection contracts" concluded with the Syrian regime in Damascus.

The protection agreements include supplying the Syrian regime with gas from the Konico plant, in return for supplying electricity to Deir Ezzor governorate⁽¹⁷⁾.

However, the protection contracts lasted for a short period due to the recurrence of attacks on oil pipelines from several armed groups⁽¹⁸⁾ striving to obtain some financial revenues, and due to the absence of a central administration for the Syrian opposition, especially a military base that controls matters on the ground.

The fragmentation of the Syrian opposition factions and their failure to unite within one entity, as well as the lack of clear vision for any military action, were the main reasons for the failure to put an end to all these abuses, noting that the first goal of the opposition factions was to control the military points located in the oil fields, and to seize military equipment and ammunition they contain.

On a different note, the failure to protect these oil facilities has allowed many armed groups, whether tribes or individuals, to attack and "seize" these wells, dismantle their pipelines and equipment, and sell them as scrap at a cheap price.

The groups that participated in the attacks on these oil facilities are classified in four main groups:

- 1- The first included some armed Syrian opposition factions, with the aim of using the machinery and equipment in these facilities in their military operations.
- 2- The second was armed groups formed by some clans in the countryside of Deir ez-Zor, with the aim of obtaining material gains from these wells.
- 3- The third is scattered groups, which found an appropriate opportunity for theft and

(17) Ain Al-Madina Magazine, Deir Ezzor Oil from the Revolution to the Islamic State, August 2015, <https://bit.ly/3wi36D7>

(18) The strange thing is, according to what Mr. A.A., an activist from the city of Al-Bukamal, told us, during an interview we conducted with him for this research, that a few factions that were attacking these pipes were primarily motivated by their objection to the covenants with the Syrian regime.



looting, in the absence of the authorities responsible for protecting the wells⁽¹⁹⁾.

- 4- The fourth is collaborators with the regime before its departure in 2012. Mr. A.A., an activist from the city of Al-Boukamal⁽²⁰⁾, states that the Syrian regime, before its withdrawal from the city of Al-Bukamal in 2012, handed over the weapons in the Al-Here area to a person called "Hussain Al-Ali", and instructed him to take control of the Al-Hassian well, while the regime continued to receive part of the revenues from this well for a long time afterwards. He is now a member of the Iranian militias located in the city of Alboukamal. As for the second person, he is "Moajil Al-Battal". The regime handed him weapons from the T2 station (Al-Kam), and thus he became one of the warlords in that region, seeking to control the oil wells, including the Al-Hassian well. Mr. (A.A.) states that Al-Battal disappeared later on and nobody knows his whereabouts. These examples outline the regime's prior plans to create warlords and to drag people into fighting among themselves over these wells.

In order to benefit from the revenues of these oil wells, the town of Al-Tayyana⁽²¹⁾ had a positive experience managing several wells in the desert of this village⁽²²⁾.

After Deir-Zor countryside got out of the Syrian regime's control, some armed men from the village took control of these wells. After about a year, a group of young people from the village tried to regain control of those wells. The mechanism was as follows: In the village of Al-Tayyana there are 4 main tributaries⁽²³⁾. They all agreed that four young men, one from each tributary, would negotiate with the militants who control the oil wells over an equal distribution of the well revenues between all residents no exception.

The militants rejected the suggestion at first, and there was almost a direct clash between them and the young men. However, after discussion they agreed to hand over these wells to the notables of the village and to divide the well revenues among all the village residents equally, according to a consensual formula agreed upon by the town tributaries. This formula had been applicable until ISIS took control of the entire countryside of Deir ez-Zor, in the

(19) Ain al-Madina magazine, Deir ez-Zor oil from the revolution to the Islamic State, August 2015 <https://bit.ly/3/wi36D7>

(20) Interview with Mr. (A. A) from the city of Al-Bukamal, conducted by the research team. He refused to reveal his name.

(21) The town of Al-Tayyana is located in the countryside of Deir ez-Zor. It is administratively affiliated to the city of Al-Mayadin and is about 18 km away from it.

(22) Or in "Al-Dhahra" as it is called in the dialect of the people of the city, and these wells are located in the area between the Tanak and Al-Omar fields, and there was no military base there to the Syrian regime.

(23) They belong to one clan, the "Al-Karaan" tribe, and in the end they belong to the Al-Aakidat tribe.

month of Ramadan of 2014⁽²⁴⁾.

Between 2012 and 2014 the selling prices of a crude oil barrel ranged between 1500 and 2500 Syrian pounds. These prices depend on the principle of supply and demand, the availability of the exchange market and the safety of supply lines inside and outside the governorate.

The village residents tried to impose the fact that funds should be invested in public affairs and aid campaigns and distributed to the poor and needy, and that the oil imports should be used to support vital service facilities, such as water and electricity generators⁽²⁵⁾. The idea was very well implemented to the point that aid reached Aleppo district. However, this meaningful experience has not been applied in other regions⁽²⁶⁾, and ended as soon as ISIS took control of the entire Deir ez-Zor governorate in mid-2014.

Actually, the tribal predominance played a major role in the opposition factions' inability to control the oil fields properly. First, the factions avoided any battle that would lead to a direct confrontation with the tribesmen, and to blood shedding. Second, Deir Al-Zour has never witnessed stability. Just after the Syrian regime lost control, "Jabhat Al-Nusra" took control and sought mainly to undermine the Syrian opposition factions, the so-called "Free Army". This continued until the end of 2013, when ISIS cells began to gradually infiltrate the entire governorate. A few months later, the fierce battle against ISIS began; battles that cost Deir ez-Zor a lot of youth and equipment, and lasted for nearly eight months from late 2013 until mid-2014, before the organization taking control of the entire Deir ez-Zor governorate.

Primitive oil extraction methods by the opposition

After taking control of most oil fields in the Eastern region the armed factions did not manage them properly. Disorganisation and chaos prevailed with the armed factions's inability to make up for the absence of the state authority. This allowed many parties to fight over the oil revenues with personal interests emerging due to chaos and lack of accountability.

(24) An interview with Mr. Ragheb Al-Khalil, an activist from the village of Al-Tayyana, one of the persons who negotiated with the armed men who control the oil wells. Interview over the phone, May 1, 2021

(25) Al Jazeera Network, Investing Refined Oil Funds in the Deir Ezzor Countryside, April 2014, <https://bit.ly/3xC9E0T>

(26) Researcher Mahmoud Al-Hussein was one of the people who lived this experience, due to him moving from the city of Al-Mayadin to the town of Al-Tayyana, from September 2012 to March 2013.



This has led to the weakness, dispersal and dissipation of the Opposition forces, and opened the door for “Jabhat Al-Nusra” first, and then (ISIS), to control the fields and turn them into a great source of power.

Moreover, the Opposition had no desire to engage in side battles with local communities, for fear of being distracted from fighting the regime, and it had no knowledge either in managing the oil fields and facilities, since such management requires that experienced and trained staff carries out governmental tasks.

Improper management of the field continued despite the multiple initiatives taken by engineers and technicians from Deir Ez-Zor to offer approaches that could protect the fields from sabotage and looting, and despite their constant warnings⁽²⁷⁾ against non-scientific methods of oil extraction due to their effects on humans, society and environment, and on the oil fields themselves.

The forces controlling the fields have resorted to new methods of extracting crude oil directly from the fields, in the absence of the necessary protection and safety measures. They opened closed wells and let the pure oil flow into nearby holes, thus leaving large amount of crude oil exposed to air, ignoring that this causes great damage to the land and groundwater; not to forget the impact of gas and oil fumes on the workers. On the other hand, the main method used for refining crude oil and obtaining oil products consisted of heating the crude oil under certain temperatures to extract diesel, gas and gasoline⁽²⁸⁾, then workers separate these components by noting the changes in Color and smell. (see picture below #3)

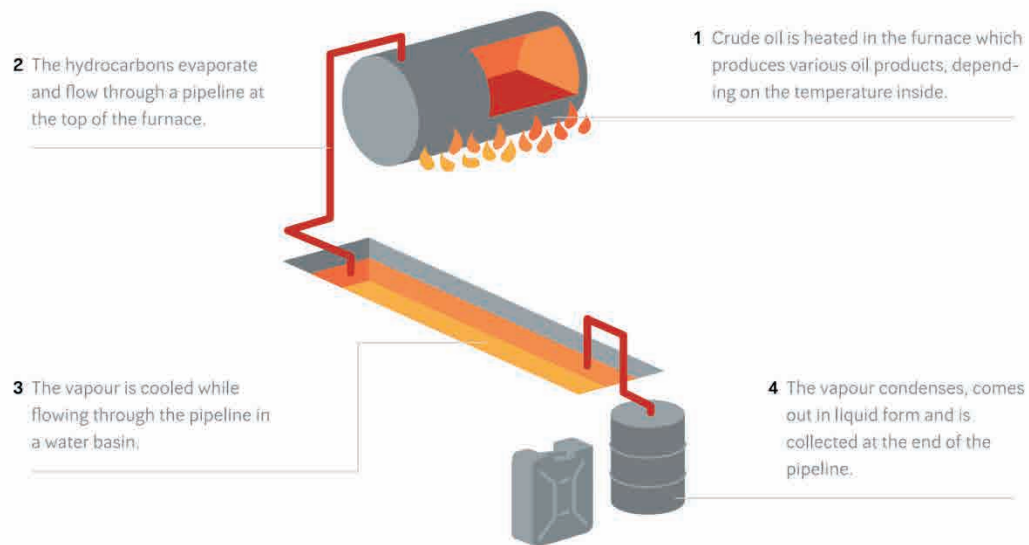
(27) Ain al-Madina magazine, Deir ez-Zor oil from the revolution to the Islamic State, August 2015 <https://bit.ly3/wi36D7>

(28) The price of heaters depended on their size. The price of a one-barrel heater was 15,000 Syrian pounds, while the price of a three-barrel heater was 20,000 Syrian pounds, and a 30-barrel heater cost 120,000 Syrian pounds, according to journalist Abdul Qader Dwaihi. Telephone interview.



Picture No3 from an oil field shows primitive oil extraction operations (Source: Al-Jazeera network)
<https://bit.ly/3bzlkrI>)

For further information, please see the video on the following link <https://bit.ly/3bDDVTo>



Graph No3 shows primitive oil extraction process.

Source: Pax <https://bit.ly/3ofDLVY>

Primary oil extraction methods lasted long enough without completely stopping despite importing electrical refineries in different sizes, that cost between 150, 000 and 300,000 dollars, according to their capacity. Also, different parties had electrical refineries (See Table 4)⁽²⁹⁾, owned either by military factions such as Jabhat Al-Nusra and Islamic Ahrar-El-Sham or by independent individuals, reaching tens of small sized refineries (Each contains 30 to 50 barrels). There are hand-made heaters next to the oil wells, along with one refinery⁽³⁰⁾ owned by

(29) The details about these electric refineries are obtained by the research team from several interviews for the purpose of this research. The financial returns of these refineries were going to the authorities that managed them, and these revenues remained ambiguous and their exact fate is not known.

(30) In late 2013, the Deir ez-Zor Provincial Council of the Syrian opposition owned an electric refinery to extract oil amounting to \$220,000 in revenue, which was installed in the Al-Ward oil field. The Jaafar Al-Tayyar brigade would protect it in return for 20% of the refinery's revenues, but Mr. AB, one of those who worked within the administration of the local council in Deir ez-Zor, affiliated with the Syrian Coalition of Opposition Forces, he stated that after the installation of this refinery work continued for only 6 months before ISIS took control of the entire Deir ez-Zor governorate. In the middle of 2014, (A.B) believed that the refinery was economically and commercially bankrupt, for many reasons, the first of is the absence of monitoring, as there is no control over sales and purchases due to short time control. Second, the absence of an efficient administration in organizing work, and third, the absence of the institutional mentality in which the Syrian opposition should operate, as decisions were taken on the spot and without clear planning or strategy. Finally, the absence of stability in the governorate as a whole, and the most important aspect here is the war with ISIS started. This war cost the governorate a lot of equipment and many lives. Mr. (A.B) stated that the local council was counting on the armed forces controlling the oil wells to provide them with part of the revenues, but nothing was achieved in reality due to lack of planning, and the most importantly lack of a unified military force that can deter these armed groups, and force them to pay. Parties also asked for oil fuels to be provided

the local council of Deir Ez-Zor.

(See the table 9 below for some examples of refineries and their locations and owners)

No	Party or Faction that owns the refinery	Location	Capacity
1	Local Council of Deir-Ez-Zor	In wells close to the oil fields.	115 barrels
2	Jabhat Al-Nusra	Al-Jerzi Badia (Between Al-Tanak field and Al-Omar field)	115 barrels
3	Ahrar al-Sham Islamic Movement	Boqrus Badia in Al-Mayadeen countryside	170 barrels
4	Jabhat Al-Nusra	Al-MAYadeen Badia next to al-rah-ba countryside	225 barrels
5	Jabhat Al-Nusra	Konico gas factory ⁽³¹⁾	115 barrels.

Table No9: Electrical oil refineries in Deir-Ez-Zor in the period of control of Nasra Front and of the opposition factions⁽³²⁾, before ISIS' control on the whole governorate, mid 2014.

Further ISIS expansion after taking control of oil and gas fields

After taking control of oil fields in 2014, ISIS followed a different policy with oil traders. It tried to monopolize the oil trade through its agents, and established the Bureau of Economics, the "Muslim House of Money", in order to manage the wealth it controls⁽³³⁾.

ISIS left the extraction heaters and refineries on the basis that it considered them private properties, but it took control of the fields, wells, and productions. The organisation started selling fuel to heaters at around 20 to 25 dollars per barrel (capacity of 200 L) and heaters would later sell to local markets. ISIS has realized the importance of the resource-derived financial income in helping the organization achieve short-term goals as well as its basic and

for schools, especially in the winter and the harsh cold that children suffer from, but nobody listened.

(31) Mr. Saad Al-Share' mentioned in an interview that we conducted for this research, that this refinery did not last for a long time, as a result of the military operations that took place from time to time in the area near the Tabia field (Koniko gas).

(32) Source: Research Team

(33) (ISIS) Part Two, Formation, Discourse and Practice, Chapter Six: The Islamic State Organization in Syria (Structure and Funding Sources), Tariq Al-Ali, (Arab Center for Research and Policy Studies, Beirut, November 2018)



far-reaching objective of expanding and acquiring vast lands in Syria and Iraq.

As for the direct objectives, first comes financing its military operations and fighters, and secondly, achieving a minimum level of “legitimacy” by proving itself as a de-facto authority that could put an end to the pre-existent chaos, about which the residents were complaining. The organization succeeded in this to some extent due to the brutal policy on which its doctrine is based. In fact, the organisation uses brutal methods in dealing with all those who oppose it or compete with it, not only in the field of oil extraction and trade, but in any other field within the borders of the areas it controls. We note the massacre it committed against the members of the Al-Shaaitat tribe in 2014, after the tribesmen tried to fight the organization in order to expel it and prevent it from controlling the oil fields in their areas.

It is estimated that ISIS production of oil between 2014 and 2016 was about 50,000 barrels per day, which helped the organization earn hundreds of millions of dollars in revenues⁽³⁴⁾. ISIS was able to mitigate the attacks that were previously occurring on the oil and gas pipelines, and even stopped them completely. At the same time, it concluded stricter deals with the regime, including the continued pumping of gas from konico plant in Al-Tabia field to Jandar station in Homs governorate, in exchange for obtaining electricity from the Syrian regime. Such agreements are documented by several sources⁽³⁵⁾.

Despite the public display of hostility between the two parties, the gas-for-electricity deals were carried out in a “mafia” like manner, as the Financial Times reports⁽³⁶⁾. In order to preserve the oil revenues, ISIS asked the employees and technicians who were working in the Al-Omar field previously, to return to work⁽³⁷⁾, and it paid them financial rewards in some cases, while subjecting teachers and administrators who previously worked in the education sector to Sharia courses “repentance”, as ISIS called it, given that they had been working with the

(34) Some sources stated that ISIS obtained \$834 million from oil wells during its control over them in both Syria and Iraq, during the period between April 2013 and March 2014. (But these numbers remain estimates). Faleh Abd Al-Jabbar, *The Caliphate State Advancing into the Past, ISIS and the Local Society in Iraq*, p. 215, The Arab Center for Research and Policy Studies, October 2017.

(35) Al Jazeera Network, *The Malicious Alliance An Account of the Cooperation Between Assad and ISIS*, September 2016 <https://bit.ly/3bTD9C0>

(36) Financial Times, *Isis Inc: Syria's 'mafia-style' gas deals with jihadis*, October 2015, <https://on.ft.com/3v3eang>

(37) When ISIS took control of Deir ez-Zor province and the oil fields, some of the workers in those fields were absent from work. ISIS told them that it would not punish them, that they are but to return to work in the field as soon as possible. (Interview with one of those who worked in the oil field during this period, an oil engineer who declined to be named for personal reasons, telephone interview, April 30, 2021.)



Syrian regime, the organization says⁽³⁸⁾. Through these methods, the organization was able to somehow control the oil facilities, and sent a message to everyone that “I can control and expand militarily and at the same time manage service facilities and control them on the ground, even if this costs more blood, lives and civilians.”

ISIS always finds a legitimate justification for its actions. One example of many was that it kept dealing with companies affiliated with the Syrian regime, including the (Anesco) company⁽³⁹⁾ for oil services, while ordering to cut off civilians’ heads for visiting regime-controlled areas .

ISIS concluded commercial deals with the Syrian regime, in order to sell oil through mediators and businessmen, such as George Hasswani⁽⁴⁰⁾. The latter was the link between the Syrian regime and ISIS. This prompted the US administration and the European Union to put those intermediaries on the sanctions list. Another businessman involved is Hussam al-Qaterji, a member of the Syrian People’s Assembly and CEO of several trading companies, who was the godfather of commercial deals that included the transfer of wheat and oil from areas controlled by ISIS to areas controlled by the Syrian regime, through his buses and trucks, while military protection was provided by loyal armed men and the Syrian Army.

All commercial deals between ISIS and businessmen affiliated with the Syrian regime were carried out through the transfer of agreed-upon materials, whether wheat or oil, from ISIS-controlled areas to Syrian regime-controlled areas, provided that the organization gets the price it requested; whereas Bashar Al-Assad claims he is fighting the ISIS, businessmen associated with him financially support the organization, in order to obtain products needed by the Syrian regime.

Despite of Al-Qaterji company trucks being known to everyone by the slogans painted on

(38) Which shows the contradiction in the behavior of the organization, whose main motive was interest and financial return, and religion has nothing to do with this matter, as the organization claims. This applies to its commercial deals in oil, gas and wheat with the Syrian regime through intermediaries, as well as to smuggling and selling antiquities.

(39) According to many of the opinions that we obtained, in addition to some previous research, the company that was owned by George Hasswani was dealing with ISIS in various oil sites, and was providing the organization with some oil equipment related to the maintenance of wells.

(40) George Haswani is a Syrian businessman from Yabroud, and a Russian citizen. He worked as a commercial broker between the Syrian regime and ISIS during the period ISIS controlled the oil fields in Deir ez-Zor. According to a report by the Wall Street Journal, Haswani cooperated with a close associate of Russian President Vladimir Putin, Gennady Timchenko owner of Sroytransgaz, to build a gas production plant in the Tuinan gas field in Raqqa Governorate. The construction remained in operation during the period in which ISIS took control of Raqqa Governorate. He is also the one who opened his house to al-Nusra to detain the nuns of the Maqla Monastery in Maaloula, who were kidnapped by al-Nusra in 2013.



them, they were not subjected to any harassment by ISIS members⁽⁴¹⁾. And despite ISIS being strict in executing anyone proven to have dealt with Assad regime, according to the organization's legislators, these rules did not seem to apply to the commercial relations between the organization and the regime.

The oil fields of Al-Hassaka, Deir-Ez-Zor and Al-Reqqa in the hands of PYD

The situation in al-Hasakah governorate was radically different from what it was in Deir ez-Zor governorate, due to the regime resorting to the Kurdish-Turkish PKK organization and its branch in Syria called PYD. Some sources reported that after the uprising, Asef Shawkat (vice-president of the General Staff) was sent to the Al-Qandil Mountains where he made an deal with the PKK party, for their return to Syria through the PYD party, in order to control the Kurdish-majority areas, and prevent the kurds from participating in the peaceful movement of March 2011.

It is said that the Syrian regime provided them with money, weapons. and headquarters, and allowed them to control the oil fields as well as most of the government institutions and companies, except for the security quadrant and some departments. Also included in this agreement was the Syrian regime handing over to the Democratic Union Party (PYD) the oil fields in the entire province of Al-Hasaka, which is what actually happened on the ground⁽⁴²⁾.

As a result of the widespread demonstrations and popular protests, the Syrian regime withdrew from Al-Hasakah governorate and isolated itself, controlling only some military facilities in the governorate, including Qamishli Airport and the security quadrant there.

Therefore, the Syrian regime entrusted these Kurdish forces with the task of ruling the governorate in full. At the same time, these Kurdish forces preserved the state institutions of the Syrian regime, such as the Civil Status, Immigration and Passports Department, civil courts,

(41) The Wall Street Journal, An Energy Mogul Becomes Entangled with Islamic State, Jay Solomon and Benoit Faucon, May 2016, <https://on.wsj.com/2Rhcf68>

(42) Dr. Riad Hijab, the former Prime Minister of Syria, stated in a recorded interview with (Syria TV) in May 2021 that Bashar al-Assad, after the bombing of the Crisis Cell, instructed the leaders of the security services and military units to vacate their positions and hand over all their weapons to the PKK, and he states that He attended a meeting with Bashar al-Assad on July 21, 2012, in his capacity as Prime Minister at the time, and Saeed Bkhaitan, Farouk al-Shara and Muhammad Jihad al-Lahham were at the meeting. During the meeting, there was a discussion about the reason for handing over this heavy weapon and equipment to the PKK, and Bashar al-Assad's answer was Literally: "These are our allies, and we have invested in them a lot over the past years, and now we need them in order to control the Kurdish street that is witnessing demonstrations and protests, as well as to control the Arab street, and to be a dagger in the side of Turkey."

and others. With that said, the Kurdish forces, with total approval from the regime, were able to get the oil and gas fields after mid-2012.

The so-called “Autonomous Administration” will then prepare its personnel to supervise and manage these oil installations⁽⁴³⁾ despite the continued work of the employees of the state-owned company “Syrian Oil Company”, which manages Al-HAsaka’s fields, in addition to employees of companies and government institutions.

Al-Hasakah governorate has a number of major oil fields in Syria, such as the Suwayda, Karachuk and Rumailan fields. The Rumailan field is considered the most oil-producing field with about 1,322 oil wells and more than 25 gas wells. Its daily production before 2011 was about 80,000 barrels per day, in addition to the fields of gypsum, Al-Shaddadi and Al-Hol, in the southern countryside of Hasaka, as well as fields located near Markada area in the western countryside of the governorate⁽⁴⁴⁾.

		Fields
1	Fields under PYD control in 2012	Swedish Karachoko, Al Rumaylan, Derico, Alian, Ouda Al-Gybsa Gouna. Teshreen, Kabibhu ,Safeeh, Shamal Al-Hussein, Al-Aqram, and Al- Qadeer
2	Fields under PYD control in 2017	Al-Omar, Al-Tanaq, Al-Gefra, Konico gas oil

Table No10: Fields under the PYD control

As a result of the relatively calm battles in al-Hasakah, the Democratic Union Party created the so-called “self-management” that was able to repair some previously-sabotaged oil pipelines and even resumed production of oil from other previously halted wells, through maintenance workshops related to the Syrian regime after providing raw materials and necessary

(43) The “Autonomous Administration” established an oil and gas college, called the “College of Petroleum and Petrochemicals” in the city of Rumailan in Al-Hasakah governorate, for a period of three academic years, with the aim of qualifying cadres to work in the oil facilities run by Kurdish forces. Last year, it graduated a batch. The number of Kurdish students exceeds 150, the majority of whom are female. As for the males, they must go to the compulsory service determined by this “autonomous administration.” (An interview conducted by the research team, with Maaz.A., one of the engineers of the Syrian Petroleum Company, and he was working in the Rumailan oil field, in the province of Al-Hasaka, and he refused to disclose himself for personal reasons).

(44) Al Jazeera Network, Interesting statistics about Syrian oil... The hidden future of the East Euphrates, November 2019, <https://bit.ly/37t6elw>



maintenance tools⁽⁴⁵⁾.

There is also the Tel Adas⁽⁴⁶⁾ plant near the Rumailan fields, which is an oil processing plant, which is now operating normally without any major problems.

Technical and economic cooperation between the Syrian regime and the Kurdish forces is still ongoing through businessmen affiliated with the Syrian regime, such as Hussam al-Qaterji and his brother Bara, who played a mediating role in completing oil and wheat deals between the two parties, a role they played in order to complete deals between ISIS and the Assad regime. This prompted the US administration to include them on the sanctions list. Therefore, new names appeared to complete these deals, such as Ammar al-Sousi, who pledged to deliver oil and gas to the regime's areas, in exchange for a contract worth 11 million euros, to fully operate and maintain the Gypseh gas plant⁽⁴⁷⁾.

After that, the Kurdish forces founded Al-Jazeera Company to carry out the technical work in order to replace local and foreign oil companies that had left those sites. Since Al-Hasakah's oil installations did not witness battles and military operations⁽⁴⁸⁾, they were less damaged than those of Deir ez-Zor. Therefore, Al-Jazeera Company imported equipment and spare parts for electric refineries and increased oil refining. The Rumailan field reached 15,000 barrels per day in mid-2014, and the production of the Suwayda field, specifically the affiliated gas station, increased about 1.5 to 2 million cubic meters of gas, per day.

(45) Almohamad, Hussein, and Andreas Dittmann. "Oil in Syria between Terrorism and Dictatorship." *Social Sciences* 5, no. 2 (2016): 20.

(46) Tel Adas station is about 20 km away from the Rumailan field.

(47) The Syrian regime mainly depends on the Al-Qaterji Group to transport and smuggle wheat and oil from the SDF-controlled areas to the Syrian regime-controlled areas. Despite the constant American warnings and the sanctions imposed on the Syrian regime, including the Caesar Act, oil smuggling continued between the two parties, and was interrupted only in limited periods of time, due to many factors, including the clashes between the Syrian regime and SDF at some river crossings and in the city Qamishli, too, and there are many roads to smuggle oil between these two sides, most notably the Abu Khashab-Raqqa road, through which oil tanks pass coming from the oil fields in al-Hasakah governorate, in addition to the river crossings spread along the Euphrates River within the areas of control of both sides, despite the closure of (SDF) to these crossings from time to time. For more information, you can refer to the following links:

- Al-Araby Al-Jadeed, Adnan Ahmed, Syrian oil is in the hands of "SDF" file threatening armed conflict, July 2019, <https://bit.ly/37wcAAS>
- SY24 Agency, after an unannounced break, "SDF" supplies the Syrian regime with oil, March 2021, <https://bit.ly/3gVKSmr>
- Syria TV, Smuggling Oil to the Regime... Did the "SDF" Jump Over Caesar? July 2021, <https://bit.ly/3xQD3EK>
- Jisr Press Agency, Al-Jazeera Oil Revenues, January 2020 <https://bit.ly/3tnEl6y>

(48) After the Islamic State (ISIS) extended its control over the entire Deir ez-Zor governorate in mid-2014, it tried to expand towards the northern areas controlled by the "Kurdish Protection Forces" in Al-Hasakah Governorate, but the organization retreated due to the international coalition's air strikes.



PYD militia's oil production and revenues:

An investigation published by Jisr, which defines itself as an independent electronic newspaper, indicates that the PYD's production of oil and gas from 46 fields amounts to 87 thousand barrels of oil per day, while the Suwayda Gas Plant in Hasaka produces about half a million cubic meters of gas per day, with a market value \$160,000 per day, and the annual value of the oil and gas produced by them is estimated to be about \$840 million annually (see Table 8), and revenues can reach up to \$1 billion annually.

The revenues from production are distributed to the PYD first, and to the Turkish PKK party, second, the regime third, and ISIS fourth, while the Syrian people get nothing⁽⁴⁹⁾.

Type	Unit	Daily Production	Daily Production value \$	Yearly production value
Oil	Oil barrel	87030	2175000	793875000
gas	cubic meter of gas	500	160000	58400000
Total			2335000	852275000

Table No11 shows the PYD's revenue of oil and gas

Other quantities are smuggled through pipelines that extend under the Euphrates River, and in river boat-tanks that transport oil from the east to west of the Euphrates under regime forces control, with the knowledge and acceptance of the "Syrian Democratic Forces". So, the PYD sends part of its oil production to the regime through the Al-Qaterji brothers group (Baraa Katerji and his brother) by tankers (about 300 tanks per day) from the areas controlled by the PYD to the areas controlled by the regime.

Qatirji tanks loaded with crude oil gather in a private yard in the city of Qamishli, and in another gathering center at the southern entrance to Al-Hasaka, then head to Raqqa governorate via the following road, under the protection of PYD forces: Tal Tamr, then Abyad, then Makman, then Sabah al-Khair, then Al-Karama, then Raqqa all the way to the Tabqa crossing boarder, and from there to "Athria", where the regime forces will receive it. Despite the constant American warnings and the sanctions imposed on the Syrian regime, including the Caesar Act, oil smuggling between the two sides continued and was interrupted only occasionally due to many factors, including the clashes between the Syrian regime and PYD forces, at some river crossings and in the city of Qamishli.

(49) Jisr Online Newspaper, Syria's Al-Jazeera Oil Revenues: \$1 Billion to Feed the PKK, Breastfeed (ISIS) and the Local Population Epidemic, January 2020, <https://bit.ly/3fslcvo> <https://bit.ly/3fslcvo>



The American silence about oil smuggling between the PYD and the regime is attributed to the Americans' desire that the regime not fall without the existence of an agreement that facilitates the transition of power to prevent chaos from happening in Syria.

There are many roads to smuggle oil between these two sides, most notably the Abu Khashab-Al-Raqqqa road, through which oil tanks pass from Al-Hasaka's oil fields; and the river crossings sprinkled along the Euphrates River within the control areas of the two sides, despite the PYD closure of these Crossings from time to time.



Chapter Three:



Gas Fields in Syria

Gas production before 2011

In the nineties the Syrian regime started showing interest in gas production. This coincides with the increase in global interest in gas. So, the Syrian Petroleum Company (SPC) established some gas plants to invest the gas produced in oil fields and use it to generate energy in the fields. Later on, Shell built a gas plant in the Al-Omar field near the city of Al-Mayadeen, also to invest the gas resulting from oil production.

After the first major gas discoveries were made by the Syrian Petroleum Company southwest of Palmyra the government founded the "Koniko Gas Plant" affiliated with the American Koniko Company that established the plant in the Tabiya field near Deir ez-Zor in 2004 based on an investment contract, to collect gas from the oil fields of Deir ez-Zor. The Syrian Gas Company, Petro-Canada and Croatia's Ena company also had their factories on oil fields

In 2009, the geological reserve of gas amounted to 698.6 billion m³, of which about 409.8 billion m³ were viable for production. Until 2008, 125.25 billion m³ of gas reserves had been extracted, and the producible reserve was about 284.6 billion m³. See Table No. (12)

City	Geological Reserve	Producible Reserve	Gas production until 2008	The Remaining Producible gas
Al-Hassaka	143.6	53.3	20.32	33.1
Al-Gypsah	73	46.4	17.14	29.2
Deir-Ez-Zor	208	110.2	75.3	34.9
North Central Area	57.2	39.9	0.87	39
Central Area	43.3	37.8	11.3	26.5
South Central Area	173.5	122.2	0.41	121.8
Total	698.6	409.8	125.25	284.6

Table No. (12) shows Syria's gas reserves in 2009 by regions (billion m³)



Syria's production of gas supplies to the gas transport network in 2010 amounted to about 25 million cubic meters per day, or about 9 billion cubic meters per year, bearing in mind that another part of the gas is consumed in fields to produce electricity or re-injected into wells to stimulate oil production. That last part ranges between 25 and 35% of the total gas produced. Gas production in 2010 met part of Syria's need to generate electricity, and the rest of the electricity production depended on fuel, in addition to the small part of electricity produced by water dams.

Gas fields in the central region:

In addition to the oil fields in Al-Hasaka, Deir Ezzor and Al-Reqqa, which produce gas with oil production, main gas fields areas in Syria are concentrated in the central region of Syria.

These areas contain reservoirs and dense gas layers⁽⁵⁰⁾ (see Map No. 3), specifically the Jabal Shaer area⁽⁵¹⁾, which includes several gas fields. It produces approximately three million cubic meters of natural gas⁽⁵²⁾. ISIS had taken control of the Shaer gas field in October 2014. It is a very important field due to its supply of gas to the Ebla plant which in turn supplies dry methane gas to electricity generating stations, hence its importance.

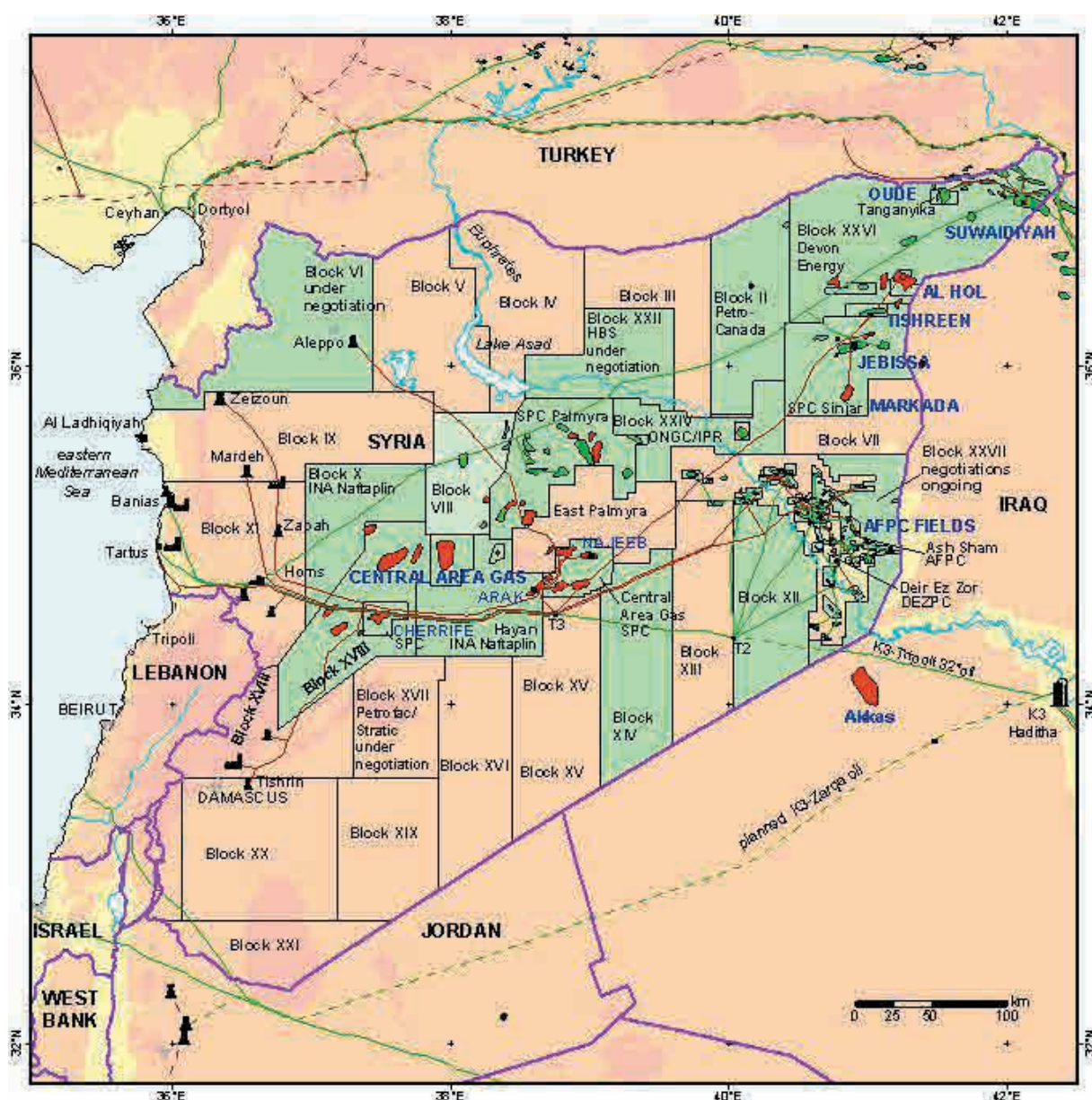
In late 2014, hit-and-run operations took place around the field between the Syrian regime and ISIS thus leading to the damage of a collection plant.

There are several reservoirs and gas wells in the central region of Syria, mainly the city of Qara in the countryside of Damascus home to the fields of Qara 1 and 3, Breij and Sadad. Palmyra is also a vital area in Syria, not only because it is an archaeological and historical city, but also because it is located in the central region of Syria, on the international road that links Al-Hasaka and Deir Ezzor to the Syrian capital Damascus, therefore forming a link between the oil and gas production in the NorthEast, and the power stations located in the south and the West. (see Map No. 4).

(50) In the north, south and west of Palmyra, there are a number of gas fields, in which the government owned Syrian Gas Company operates. Foreign companies such as PetroCanada and the Croatian INA also operate in it, in addition to the Ebla Company as well.

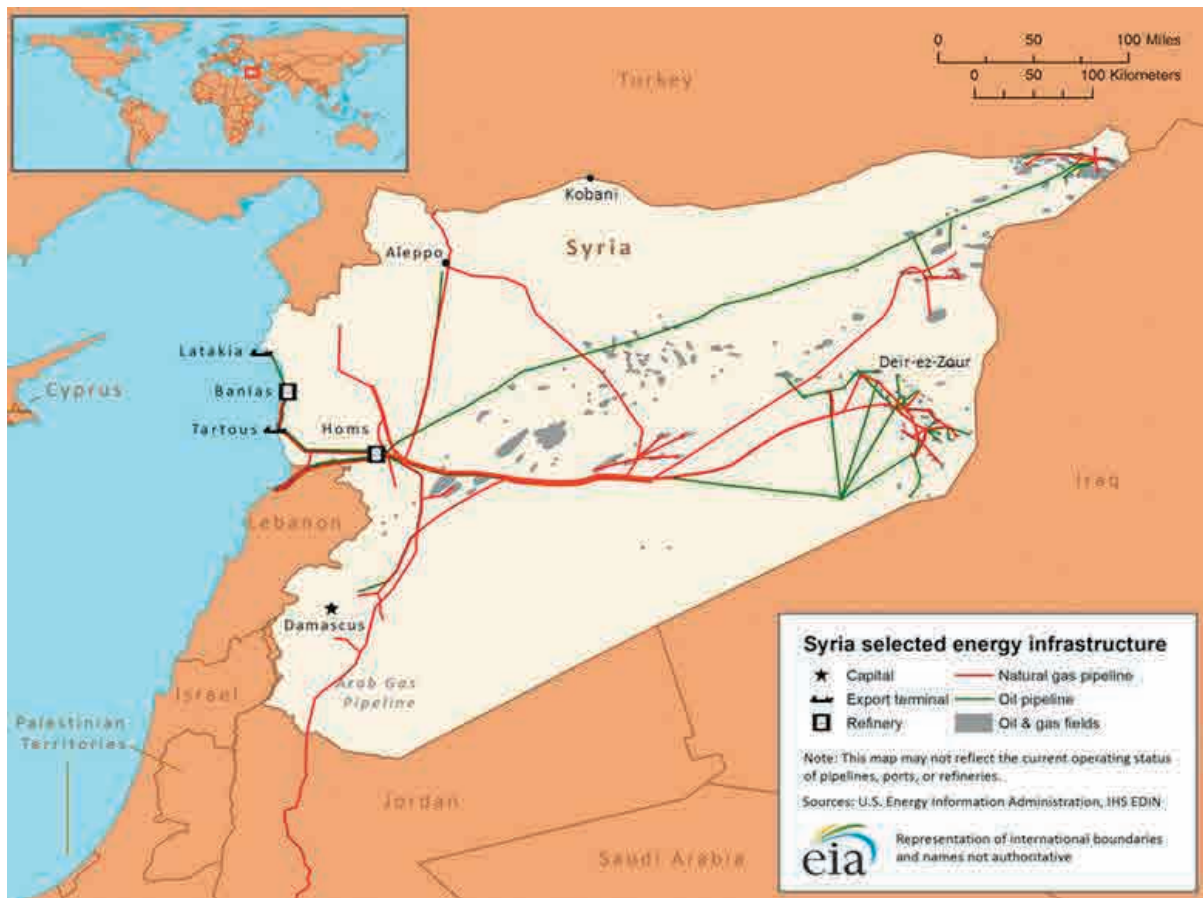
(51) The Shaer gas field is located 150 km northwest of Palmyra.

(52) TRT, Oil and Gas Fields in Syria, where are the Fields Spread and Who Are the Beneficiaries, March 2020, <https://bit.ly/3aym5RB>



Map No2 shows gas fields distribution in Syria⁽⁵³⁾

(53) The map is an unpublished Syrian Ministry of Oil document.



Map No3 shows oil & gas fields as well gas piplines in Syria.

Source: <https://bit.ly/3AQiFFh>

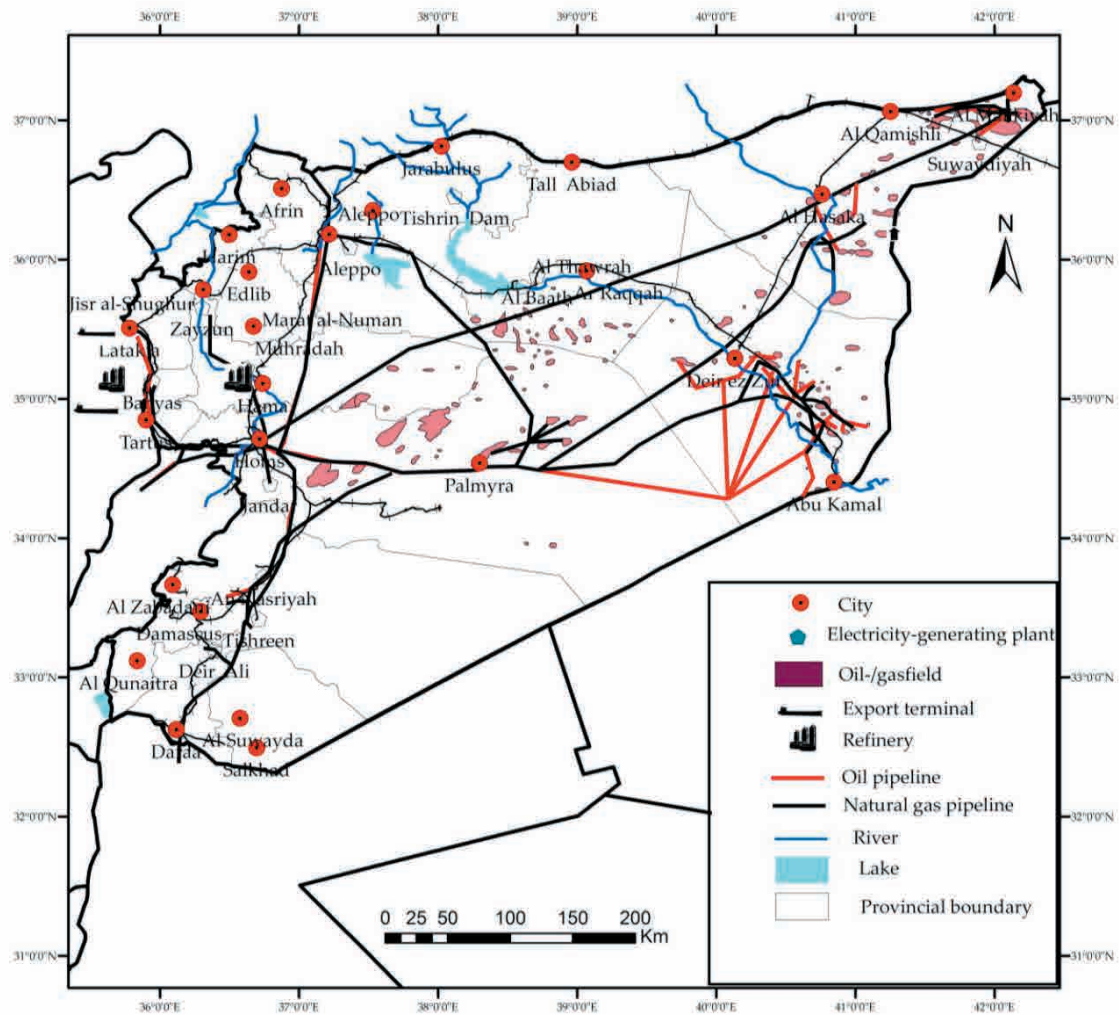
It also contains several gas fields in its vicinity, as these fields produced approximately nine million cubic meters of gas per day. These are the fields of Arak, Debisian, Hayan, Al-Hail, Jahar and Al-Mahr, Najib, Sokhna and Abu Rabah⁽⁵⁴⁾. (See Table No. 13)

(54) Yazid Sayegh, The War on Syria's Gas Fields, Malcolm-Kerr Carnegie Middle East Center, June 2015, <https://bit.ly/2ZluEji>



No	Field	Investor	Operating Company	Produced Energy (Million m3 per day)
1	Al-Shaer field	Petro-Canada	Ebla Company	2,5
2	Jahar	Croatian Company Ena	Hayyan Company	3
3	South-West of Palmyra	Syrian Gas Company	Syrian Gas Company	6
4	North of Palmyra	Syrian Gas Company	Syrian Gas Company	3
5	Al-Hassaka field	Syrian Gas Company	Syrian Gas Company	Autonomous Consumption
6	Al-Gypsah field	Syrian Gas Company	Syrian Gas Company	Autonomous Consumption

Table No13 shows gas fields in Central Syria



Map No4 shows geographical distributions of oil and gas refineries and pipelines in Syria⁽⁵⁵⁾

Among the fields that were destroyed, due to the military operations accompanying the battles between ISIS and the Assad regime in 2014 and 2015, are the Al-Hail and Arak gas fields. The latter contains a gas collection station through which gas passes from the Palmyra area⁽⁵⁶⁾ to the central station. In addition, in the same year, 2015, ISIS took control of the Jazel oil field and the T3 pumping station, east of Palmyra.

(55) Almohamad, Hussein, and Andreas Dittmann. "Oil in Syria between Terrorism and Dictatorship." *Social Sciences* 5, no. 2 (2016): 20.

(56) Yazid Sayegh, *The War on Syria's Gas Fields*, Malcolm-Kerr Carnegie Middle East Center, June 2015, <https://bit.ly/2ZluEji>



ISIS blew up the Jahar gas field, which belonged to the Hayyan Company, and which was fully exploited by the Croatian company Ena⁽⁵⁷⁾. ISIS justified its action by the fact the factory generates huge financial revenues for the Syrian regime, from which the regime finances its military machine.



Photo No 4 shows Hayyan factory's explosion by ISIS in the countryside of Homs

Source: <https://bit.ly/3eUW7J1>

This field is considered one of the largest gas fields in Syria⁽⁵⁸⁾, and it was producing about 3 million cubic meters of gas per day, and it was feeding power plants in the southern governorates of Syria. On the other hand, according to the Ministry of Oil and Mineral Resources in the Syrian government, the Dow basin area⁽⁵⁹⁾ contains a reserve of 47 billion cubic meters of gas.

In 2017, the Syrian regime launched a project called “North Damascus Gas”, in order to

(57) Al-Araby Al-Jadeed, (ISIS) blows up one of the most important gas companies in Syria, January 2017, <https://bit.ly/2RIL-4ki>

(58) The Jehar (Hayyan) gas plant was completed in late 2009, (Hayyan Oil and Gas Company between the Syrian Oil Company and the Croatian ENA-Industrial Nafte Company). It was estimated to process about 4 million cubic meters of gas per day, and produce 3 million cubic meters per day of clean gas, and 5,000 Barrels/day of condensate and 180 tons of domestic gas. Samir Saifan, Effects of the Crisis on the Oil and Gas Sector, an unpublished study.

(59) The Dow area extends from Deir Atiyah in Al-Qalamoun to Al-Qastal in Homs Governorate

explore and extract gas in the Qara area in the countryside of Damascus. The project included several wells, which are “Qara 1” with a production of 450 thousand cubic meters daily⁽⁶⁰⁾, “Breij 1” field with a production of 250 thousand cubic meters daily, and “Qara 3” field with a production of 400 thousand cubic meters of gas daily. Here it must be noted that the research team doubts the validity of this information, which it believes that the regime is promoting to serve its interests. The sources did not mention new investments in these areas.

Oil fields in eastern Syria: The common denominator between America and Russia:

The international coalition campaign, led by the United States of America, was over at the end of March 2019 after the end of the battle of Al-Baghouz, the last stronghold of ISIS in the city of Al-Bukamal, on the Syrian-Iraqi border. Discussions were held about restoring the oil facilities that got damaged from military operations, specifically those located in Deir ez-Zor, given that the oil fields and wells in Al-Hasakah did not witness significant destruction, as mentioned earlier. Former US President Donald Trump spoke many times about the presence of the US military, and said: “We are keeping the Syrian oil.”⁽⁶¹⁾ “ And that he intends to send ExxonMobil to rehabilitate those oil facilities and ensure their return to production again, but this was catering for the media, knowing the indifference of a country like the US to such matters.

In sum, the so-called “Syrian Democratic Forces” did not have any legal justification to conclude any deal without the consent of the Syrian state, even if its existence is a fait accompli, and even if there is an imbalance of power between the Syrian regime and the US administration with the inability of the former to win a battle against the latter.

Within these circumstances, the US Departments of State and the US Treasury issued an exemption granting the “Syrian Democratic Forces” the possibility of concluding a deal with foreign companies. This is what actually happened with Delta Crescent Energy⁽⁶²⁾, in order to increase oil production and provide millions of dollars in income to the Kurdish forces⁽⁶³⁾. It

(60) These figures were issued by the former Minister of Oil and Mineral Resources, Sufian Al-Alaw, in a report by “Enab Baladi” magazine entitled: “Russia is on its way to dominate the Mediterranean gas, issued in January 2019, <https://bit.ly/3djYF4v>

(61) Julian Borger, Trump contradicts aids and says troops in Syria only for oil, The Guardian, November 2019, <https://bit.ly/3bqIY8P>

(62) Politico, Little-known U.S. firm secures deal for Syrian oil, March 2020, <https://cutt.ly/qbEiPS4>

(63) Abdullah Al-Ghadhawi, Implications of the oil deal for the Kurds in Syria, September 2020, <https://bit.ly/3ac6ZzW>



is a company regulated under the laws of the state of Delaware in February 2019, and it obtained the OFAC license to operate in Syria. Among its shareholders we mention the former US ambassador to Denmark, Mr. James Keane, and James Reese, a former army officer in the elite Delta unit, and John B Dourier Jr., a former executive with Gulf Sands Petroleum, a UK-based oil company who had oil exploration experience in Syria⁽⁶⁴⁾. Worth mentioning are the contradictory statements coming from different parties within the US administration, such as the Pentagon or the US Department of Defense which stated that they have no affiliations with any private company exploiting fields in the northeastern region of Syria⁽⁶⁵⁾.

On the ground, in mid-2020, the so-called “Autonomous administration” began digging and rehabilitating oil wells in the Rumailan fields, in order to increase the amount of crude oil production, knowing that oil wells need periodic maintenance⁽⁶⁶⁾. Such maintenance did not happen during the years of war in Syria, either because of the lack of necessary technical equipment due the departure of foreign companies, or because of the absence of management and lack of experience of armed groups. Their only concern is how to extract oil, sell it and obtain imports, in any form.

In the second half of 2020, the terms of agreement on the rehabilitation of oil wells in the areas of control of the so-called “Syrian Democratic Forces” were revealed and consisted of two stages: the first is the rehabilitation of oil wells in Al-Hasakah governorate, specifically the Rumailan and Al-Gypsah fields, and then the second phase includes the oil fields in Deir ez-Zor, which need greater maintenance, because they witnessed fiercer military operations, and were subjected to more destruction than those of Al-Hasaka. The contract stipulates that the Al-Jazeera company of the “Syrian Democratic Forces” is fully responsible for the technical management of the oil field and should Delta Crescent Energy cooperate to restore them. In order to start maintenance operations, the “Syrian Democratic Forces” withdrew its military forces from some oil fields in Al-Hasaka and Deir ez-Zor. They were replaced by private security directly affiliated with the American forces to protect the oil installations⁽⁶⁷⁾.

But the new US administration headed by Joe Biden, decided in mid-2021 not to extend the exemption from sanctions that former President Donald Trump had granted to the Amer-

(64) Politico, Little-known U.S. firm secures deal for Syrian oil, March 2020, <https://cutt.ly/qbEiPS4>

(65) Lara Seligman and Ben Lefebvre, Little-Known US firm secures deal for Syrian oil, Politico, March 2020, <https://politi.co/3qS7rKz>

(66) Syria TV, Autonomous Administration working to increase production of oil fields in Rumailan, October <https://bit.ly/2Muu5JQ>

(67) Syria TV, “Delta Energy” prepares to start investing in oil in northeastern Syria, December 2020, <https://bit.ly/3thte0f>

ican oil company Delta Crescent Energy⁽⁶⁸⁾. It was the only company that obtained a waiver of sanctions by the Office of Foreign Assets Control, OFAC, to invest in oil fields controlled by the so-called “Syrian Democratic forces” in northeastern Syria. The US administration justified this decision as a correction of the previous policy and not as a complete change, despite the fact that Delta Crescent Energy, according to Al Monitor newspaper, obtained after Joe Biden became president of the United States of America, an export license from the US Department of Commerce to ship US-made production equipment to northeastern Syria⁽⁶⁹⁾. Such equipment included solar-powered meters to monitor the flow of oil from the Eastern Province fields.

It must be noted that the “Syrian Democratic Forces”⁽⁷⁰⁾ monopolizing the imports of the oil fields they control is considered looting of Syria’s natural resources and wealth that the Syrian people have never benefited from, because what is distributed to civilians in the areas controlled by the SDF does not exceed 7,500 barrels per day, That is, 10% of the total production, especially since the (SDF) financial revenues from oil are outside the state treasury scope, and this strengthens the war economy and imposes de-facto forces supported by the US administration⁽⁷¹⁾.

Due to oil wells being out of the Syrian regime’s control, and due to the economic sanctions imposed on the Syrian regime since 2012; there was a severe shortage in Petroleum products leading to long periods of power outages. However, the Syrian regime kept looking for additional sources of petroleum, and as a result signed several contracts in 2020 with Russia, in order to import gasoline and diesel. The quantity agreed upon with Russia was 360 thousand tons of gasoline and diesel, which arrived in Syria gradually throughout 5 months of the year 2020⁽⁷²⁾.

(68) Al-Monitor, Biden administration poised to ax US oil company’s waiver for Kurdish-led northeast Syria, May 2021, <https://bit.ly/3c4MmaO>

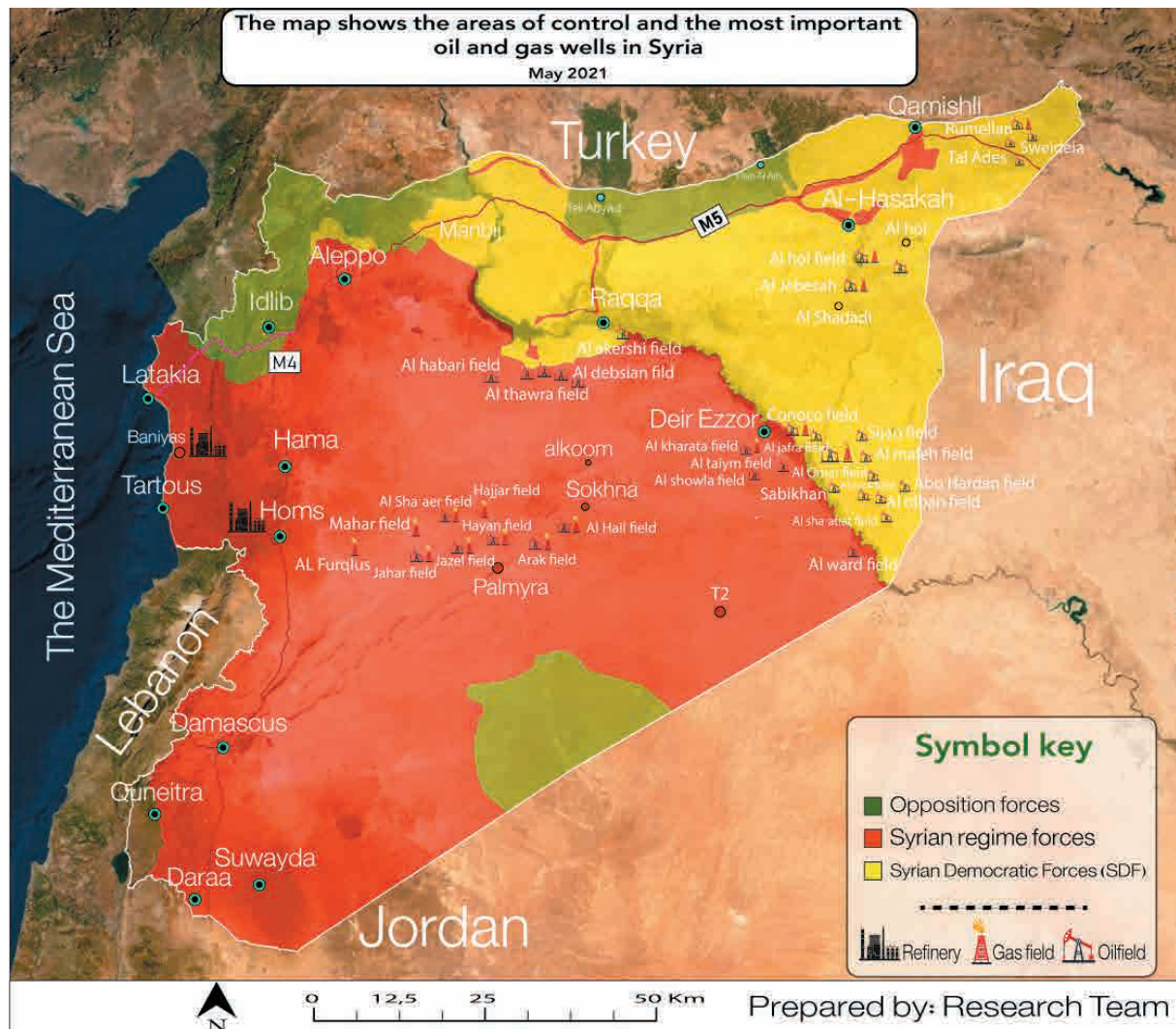
(69) Al-Monitor, Biden administration poised to ax US oil company’s waiver for Kurdish-led northeast Syria, May 2021, <https://bit.ly/3c4MmaO>

(70) The most famous of them is “Farzat”, the supervisor of the Euphrates oil field, he was dismissed in 2020 due to corruption, and was replaced by a person named “Adnan”, in addition to another person named “Ismat”, who is responsible for the Ezbeh and Koniko fields, and another person named “Killi”, and the person responsible for all of them is called “Ali Sher”. Jisr Press Agency, Syrian Al-Jazeera Oil Revenues, January 2020 <https://bit.ly/3tnEl6y>

(71) Especially since a part of the imports from these wells are paid as salaries to the members and leaders of the SDF militia, which is estimated to number about 100,000 fighters.

(72) Adnan Abdul Razzaq, Enriching the War Merchants in Syria: The Syrian Regime Imports Oil from Russia Through Businessmen, February 2021 <https://bit.ly/37cAtgx>

See map No 5 that shows oil and gas fields in Syria according to areas of control.



Map No5

Estimates of Material Damage in Oil and Gas sectors:

Material losses include the total value of equipment, vehicles, and warehouse assets, as well as damage to pipelines, buildings, facilities and roads in oil and gas fields. However, an accurate estimate of the damage in oil and gas wells requires field visits in order to assess and estimate the extent of the damage, which cannot be done currently. What is stated in this research depends mainly on published statistics and on some estimates and information from eyewitnesses.

So, the issue of estimating damages, repair supplies and costs needs to be addressed by

technicians and experts in the oil industry, as Oil and Gas remain one of the main endogenous resources that can contribute to the reconstruction of Syria. According to statistics issued by the Syrian regime's Ministry of Oil the losses of the oil sector in Syria amounted to 91.5 billion dollars⁽⁷³⁾, 19.3 billion dollars of which were direct losses in equipment, losses that occurred for several reasons, including the bombing of air forces, such as the Syrian regime and the international coalition⁽⁷⁴⁾.

Moreover, the research team estimated the value of missing oil revenues opportunity, due to the interruption of production as a result of the war, and based its calculations on the following assumptions:

1- Estimated daily and annual production:

In order to estimate the production for the years following 2011, we started on the basis that the 2010 production was estimated at 380,000 barrels per day, and took into account a decline in production at a rate of 5% annually, which was expected due to the previous years experiences. We later multiplied the number by 365, the number of days in a year, and thus, obtained the production quantity during one year, during the years 2011 and 2020.

2- Price estimation: Based on the average prices of (OPEC) crude oil during the years 2011-2019, we estimated that the price of Syrian oil is equal to 95% of the price of (OPEC) crude oil. We obtained the average price of a barrel (OPEC) for the mentioned years from Table No. 5/7, that is from the statistical appendix of the Unified Arab Economic Report issued by the Arab Monetary Fund (Kuwait-based) for the year 2016. We have taken from it the average prices for the years 2011-2015, Table No. 5/6 and from of the same document, the average prices of 2015-2019. As for the prices of 2020, we estimated them at \$70 per barrel, and then we calculated the total price.

3- We did the calculation according to the table No14 below. The value was estimated at \$83 billion, and does not include the value of the missed gas revenue opportunity.

(73) It is the total number of losses, i.e. losses resulting from physical destruction, and missed opportunities

(74) Syria Press, Al Furat Oil Company losses, July 2019 <https://bit.ly/3tk3TBE>



Year/Unit	Daily production	Yearly production	Average price of Opec barrel	Average approved price	Total value
	Barrel per year	Barrel per year	US dollar	US dollar	US dollar
2011	380000	138700000	107.4	102.03	14,151,561,000
2012	360000	131400000	109.5	104.025	13,668,885,000
2013	340000	124100000	105.9	100.605	12,485,080,500
2014	325000	118625000	96.2	91.39	10,841,138,750
2015	310000	113150000	49.5	47.025	5,320,878,750
2016	295000	107675000	40.8	38.76	4,173,483,000
2017	280000	102200000	52.4	49.78	5,087,516,000
2018	265000	96725000	69.8	66.31	6,413,834,750
2019	250000	91250000	64.4	61.18	5,582,675,000
2020	240000	87600000	70	66.5	5,825,400,000
Total		1111425000			83,550,452,750

Table No 14 shows estimates of Syrian oil in the event the war did not break out

Source: Calculations made by the research team based on unpublished reports by the Syrian Petroleum Company.

Gas Production missed opportunities

We mentioned earlier that the Syrian regime sought to invest in gas wealth, especially after the year 2000. It built the Konico gas plant, and concluded gas exploration contracts with several companies, such as the Canadian Petro-Canada Company and the Croatian ENA, in addition to building two other plants for the Syrian Gas Company

As a result, the quantities of gas production supplied to the network increased, and were intended to be used in power generation. They represented a small part of the industry, as production in 2010 reached about 25 cubic meters per day. However, the gas fields have been exposed to the material damage that the oil fields have been exposed to, which is difficult to estimate now, and suffered from missed opportunities, had the Syrian war not began.

In Table No. 15 and Chart No. 4, we show the quantities of gas expected to be produced be-

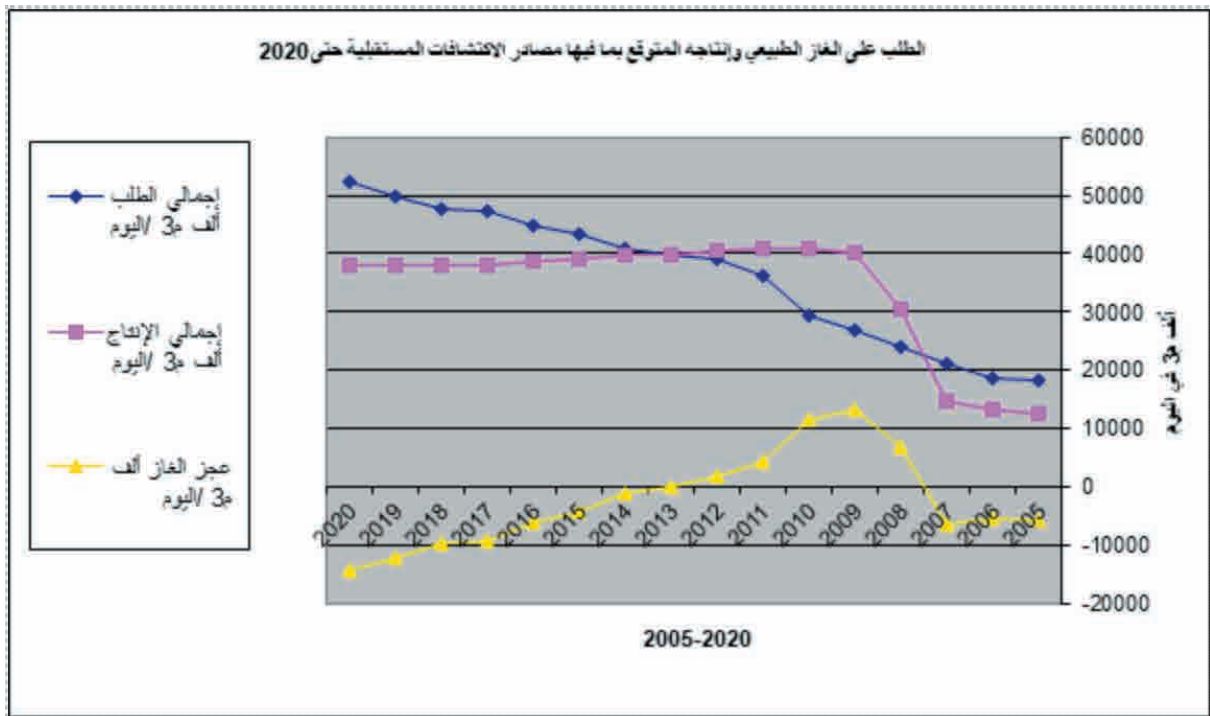
tween 2011 and 2020, as well as the percentage covered by the total domestic consumption and the need for imports.

Year	2010	2011	2012	2013	2014	2015
Total gas demand for power generation (Unit: cubic meters)	21956	28053	30119	30810	31743	33941
Total gas production	40900	40800	40700	39900	39700	39100
Deficit	18944	12744	10581	9090	7957	5159
Year	2016	2017	2018	2019	2020	
Total gas demand for power generation (Unit: cubic meters)	35187	37030	37033	39143	41190	
Total gas production	38700	38100	38100	37900	37900	
Deficit	3522	1070	1067	1243-	3290-	

Table No15 shows the estimated production of gas in Syria as compared to the total demand of gas and the deficit value.

It shows the deficit that begun to rise; an expected outcome in case the war was not to break out in Syria⁽⁷⁵⁾. The deficit confirms what we previously mentioned about Syria becoming a net importer of energy.

(75) 79 Assuming the war never broke out, source: research team calculations based on unpublished studies by Syrian Ministry of Oil and Mineral Wealth



Graph No4



Chapter Four:



The Destruction of the Electricity Generation Sector

Electricity generation and consumption capacity in 2010:

The installed capacity of electricity generation in Syria in 2010 amounted to about 8500 megawatts, of which about 8000 are in operation. The annual production was around 42 billion kilowatt-hours. Oil and gas are the main sources of electrical power generation, ranging between 90% and 93%. This percentage comes from two sources: the first is fuel, with less than 60%, and the second source is natural gas, with a rate of 34%, while the rest is generated by hydroelectric stations that were built on dams, with a percentage of less than 6%, and the rest is from self-generators usually belonging to private installations.

Year	2005	2006	2007	2008	2009	2010	%Year 2010
Fuel-generating power	13082546	13409592	12270810	13594482	20235196	26644364	57.6
Gas-generating power	17371688	13409212	21750961	23470294	20215142	15710140	34.0
Water-dams-generating power	3446316	3994229	3525506	2872245	1924805	2603459	5.6
Other	850930	6468777	900510	868364	723087	1271946	2.8
Total (Kilo-watt-hour)							

Table No16 shows Power generation in Syria between 2005 and 2010

Source: Annual reports of the Public Establishment for Electricity Generation 2010

Due to the high population growth rate in Syria, estimated at 2.45% annually, in addition to the increase in the number of factories, residential buildings and service facilities, the demand for electrical energy increased. This has caused severe pressures on generation capacity back in the eighties, with the state unable to expand those capacities, due to the stifling economic crisis at the time, as a result, there was severe rationing of electricity supply to homes and institutions. After Hafez Al-Assad obtained a reward for his participation in the second Gulf war in 1991 under the American leadership in order to remove Saddam Hussein from Kuwait, and after the increase in oil production and the improvement in the state budget, a number of generating stations were constructed in the nineties, and thus the electricity crisis receded. The annual rate of increase in electricity consumption was estimated at about 10% during the nineties, which is a high rate. Then the rate soon decreased to 7-8% in the years 2002 to 2006, then it fell to 5 -6%, due to the state's failure to build new generation plants to meet the constant increase in demand for consumption.

Sector	2000	2002	2004	2005	2006	2007	2008	2009
Agriculture	931	855	1076	1173	1199	1405	1619	1832
Industry	4834	5484	6253	6734	7044	7338	7771	7966
Trading	1494	1847	2095	2243	2494	2800	3020	3262
Others (governmental buildings, religious buildings, street lights)	1037	1265	1537	1554	1621	1428	1233	1384
Autonomous Consumption	7244	8139	9940	10993	12346	13234	13886	14358
Total	15540	17591	20901	22696	24703	26205	27529	28803
Energy reserved for 66 Megawatts or less	20988	24163	28138	30460	32811	34926	36548	38727
Annual increase		8%	8%	8%	8%	6%	5%	6%

Table No17 shows energy consumption in 66 Megawatt or less, between 2000 and 2009

Source: Annual reports of the Public Establishment for Electricity Generation.

In the year 2010, the Law 32 was passed and allowed for the first time the participation of private sectors in electricity production and distribution.

This law came within the trend that prevailed after Bashar al-Assad came to power, which is called "liberalization of the economy," and which offered new opportunities for the private



sector, such as private educational institutions, private health facilities, and others.

However, the conditions that afflicted the Arab region as a whole, and Syria in particular, including the Arab Spring revolutions has made investors hesitant, and this fear among businessmen is normal especially that they usually look for a stable environment for investment. Therefore, there was no investment by the private sector in electricity generation. After the outbreak of the revolution in Syria, and the regime's use of excessive violence, and the country turning into an open arena of conflict in which regional, Arab and international forces and sectarian militias intervened, infrastructure in Syria was greatly damaged, especially since the Syrian regime's airforce was targeting infrastructure and vital sectors in all areas outside its control, mainly water and electricity networks, roads, hospitals and educational facilities, in addition to using power cuts as a form of punishment for cities that got out of its control. The statistics indicate that the electricity sector has been significantly damaged, and thus the people were forced to buy private electric generators that depend on fuel or subscribe to get the so-called "amperes", which are local electricity networks that aim to generate electric power for the neighborhood.

For more statistics on the electric transmission network in Syria, which are statistics issued by the General Electricity Transmission Corporation in 2012, and which include data on the transmission network, energy sold and purchased and the number of employees in the institution, please see the following table No. 12:



Syrian electrical transmission network system

Purchased energy				2011	2012	(2012-2011) *100/2011: %
	Total Power Purchased			0	41987	
	Total Power Purchased	From the General Electricity Generation Corporation	GW.h	0	36975	
		from the Ministry of Irrigation	GW.h	0	3580	
		From the Ministry of Oil and Mineral Reserves	GW.h	0	0	
	Energy purchased from neighboring countries	GW.h			1432	20 %



Transport network data	Lengths of transmission lines 400 KV	KM	1660	1660.3	0.0
	Lengths of transmission lines 230 KV	KM	6130	6136.43	0.1
	Distribution line lengths 66KV	KM	8623	8624.3	0.0
	Number of transfer stations 400/230 KV	Station	12	12	0.0
	Number of transfer stations 230/66 KV	Station	79	79	0.0
	Number of transfer stations 60/20 KV	Station	334	355	6.3
	Capacity of the transfer stations	M.V. Ω	6600	6600	0.0
	Capacity of the transfer stations	M.V. Ω	17660	17660	0.0
	Capacity of the transfer stations	M.V. Ω	15883	15873.3	0.1-
Energy being sold	Export to neighboring countries	GW.h	0	326	
	Sales on tension (V) 230	GW.h	0	636	
	Sales to the Ministry of Oil	GW.h	0	391	40124.0
	Sales on tension (V) 66	GW.h	0	1778	
	Sales on tension (V) 20	GW.h	0	35800.3	
Workers	Number of employees in the General Electricity Transmission Corporation	0		4216	

Table No. 12 of the Syrian electrical transmission system Source: Annual Statistical Report for 2012 issued by the General Electricity Transmission Corporation of the Ministry of Electricity, <https://bit.ly/3sW6Bxd>

Destruction or non-functioning of generating stations during the war years

Infrastructure was damaged during the years of war in Syria, and most of it went out of service as a result of the military operations and the continuous air and artillery bombardment. Controlling these vital facilities played a role in the balance of power between the fighting parties.

Whoever controls power plants, water sources⁽⁷⁶⁾, or educational facilities was able to use them either as a tool for pressure and bargain in the battle with the other party, or as a tool to strengthen their popularity among civilians, although this matter was not actually feasible on the ground. In fact, obtaining such services was not free, on the contrary, this was a very stressful matter and civilians continued to suffer from the disastrous burdens of war especially those who were displaced or moved from their home many times. As a result, resentment grew among civilians towards all sides especially towards the de-facto authorities, including militias, shabiha, and military factions. This applies to the mechanism of obtaining electric current, after power cuts or rationing has become the new normal, it even turned into a rule, while obtaining electricity was the exception⁽⁷⁷⁾. As for the damage assessment in this sector, most of the power plants have gone out of service, and transmission lines between governorates have been damaged either because of military operations or because of looting and theft. Moreover, the rate of fuel flow to power plants decreased from 15,000 tons per day to 3,000 tons per day. The same applies to gas imports and to power plants, which decreased from 20 million cubic meters to about eight million cubic meters per day⁽⁷⁸⁾.

The destruction of the electrical stations during the war

The power generation sector was destroyed during the war years, just like all other sectors. Most of the generating stations went out of service, and a large part of the electric power transmission networks were sabotaged especially because of stealing iron towers, copper cables, transformer stations and assets of the generation stations, and selling them as scrap, by some factions or gangs who took advantage of the chaos resulting from the war. In fact, there are no accurate estimates of the extent of destruction in the electricity sector, but some statements

(76) Euphrates Dam and Tishreen Dam, for example.

(77) The average power outage in some governorates reached 15 hours per day. In some cities, especially those outside the control of the Syrian regime, power outages occurred for long periods of time. I witnessed this in the city of Al-Mayadin - Deir ez-Zor governorate, where a complete power cut lasted for 21 days, in 2013. (Mahmoud Al-Hussein from the research team)

(78) Enab Baladi newspaper, Ampere Cities: Electricity networks collapse before the eyes of Syrians, 2016, <https://bit.ly/3sU-9ZZC>



issued by the Minister of Electricity in the regime government, Muhammad Zuhair Kharboutli, in mid 2020, confirm that the direct losses of this sector during the past ten years reach about 4 billion dollars with the war causing suspension of work in about 70% of the transfer stations and transmission lines⁽⁷⁹⁾. The two main stations that were totally destroyed during the battles are Zayzoun electric station in Hama countryside (544 Megawatt) and Halab station in Halab (1065 Megawatts), also was completely destroyed Al-Taym electric station, which is a secondary station near Deir-Ez-Zor (100 Megawatts)⁽⁸⁰⁾.

The greatest damage to the power plants was sustained by the Zayzoun thermal power station, which is located in the Al-Ghab Plain area in the countryside of Hama⁽⁸¹⁾. The damage occurred at the hands of an armed faction called the “Turkistan Party”, after destroying the station’s cooling tower. (See Photo No. 6), and see the following link for the video that shows the collapse of the station <https://bit.ly/38oUuAU>

(79) Al-Arab Newspaper, Syrian Electricity Supplies Coming to More Severe Crises, August 2020, <https://bit.ly/38/lysyY>

(80) “The Toll of War” The Economic and Social Consequences of the Conflict in Syria: World Bank 2017

(81) The Zayzoun plant is considered one of the main thermal stations in Syria to generate electric power. It consists of three gas and steam groups, with a total capacity of 450 megawatts. It is located near the Zayzon Dam in Hama Governorate. The station entered in service in 1996, and it is operated by Italy’s Fiat Aveo and Germany’s Siemens. It supplied electricity in Syria of about three and a half billion kilowatt-hours.



Photo No6 shsows the collapse of Zayzoun thermal power. Source: <https://bit.ly/3qywC4a>

The table below shows the power generation situation in Syria in Early 2019

No	Station Name	Average Production	Power generation methog	Start of work in station	Station's current situation
1	Mahrade	660 Mega-watts	Steam Turbine using Fuel and Gas	1988	Working
2	Banias	670 Mega-watts	Steam Turbine using Fuel	1987	Working
3	Techrin's Thermal power	400 Mega-watts	Steam Turbine using Fuel and Gas	1994	Working
4	Halab	1065 Mega-watts	Steam Turbine using Fuel and Gas	2000	Out of Service
5	Al-Zara	660 Mega-watts	Steam Turbine using Fuel and Gas	2000	Out of service
6	Al-Suwaidiya	172 Mega-watts	Compound Turbine on gas	1989	Parts of it currently subjected to maintenance
7	Al Taym	96 Megawatts	Compound Turbine on gas		Under Maintenance



8	Techrin	220 Mega-watts	Steam Turbine using Gas	1995	
9	Banias Suburbs	260 Mega-watts	Steam Turbine using Gas	2919	
10	Jendar	702 Mega-watts	Compound Turbine on gas	1995	
11	Jendar suburbs	435 Mega-watts	Compound Turbine on gas	2011	
12	Al-Nasriya	480 Mega-watts	Compound Turbine on gas	2007	
13	Zayzoun	487 Mega-watts	Compound Turbine on gas		Out of Service
14	Deir Ali	750 Mega-watts	Compound Turbine on gas	2009	Working
15	Techrin Suburbs	435 Mega-watts	Compound Turbine on gas	2009	Working
16	Deir Ali Suburbs	750 Mega-watts	Compound Turbine on gas	2013	Working
17	Mehrada	25 Megawatts	Compound Turbine on diesel	1988	Working
18	Euphrates Dam Station	880 Mega-watts	Hydroelectric Power Station	1968	Working
19	Techrin Dam Station	630 Mega-watts	Hydroelectric Power Station	1999	Working
20	Banias	24 Megawatts	Gas turbine using Diesel	Out of Service. Currently undergoing maintenance work by Iranian company Mabna which aims to run it on gas or on diesel	
21	Halab	30 Megawatts	Gas Turbine on Diesel	Out of Service	

Table No18: Power stations situation in Syria in early 2019.

Attempts of restoring what has been destroyed:

In areas outside the control of the Syrian regime, an agreement was signed between the Trust Fund for the Reconstruction of Syria⁽⁸²⁾ and the Syrian Interim Government in 2015, to

(82) The Trust Fund for the Reconstruction of Syria was established by the group "Friends of the Syrian People" in September 2013 with the participation of three major donors: Germany, the United Arab Emirates, and the United States of America, in partnership with the National Coalition for Syrian Revolutionary and Opposition Forces, and other countries, such as Swe-

finance the expansion of electrical networks to the cities of Daret Izza and Binnish. The project aims to deliver electricity to these two cities and to vital facilities in them, such as medical facilities and power stations, water and furnaces. The total percentage of beneficiaries accounted to about 50 thousand people. The total cost of these two projects is about 3 million euros, benefiting about 165 thousand citizens⁽⁸³⁾. The Trust Fund for the Reconstruction of Syria launched a plan in 2021 of several stages up to nine months to restore 14 electricity transmission centers in Raqqa Governorate at a total cost of one and a half million euros. The aim was to provide electricity to all vital facilities in the city of Raqqa. The plan includes restoration of the network Medium voltage, repair and replacement of electrical transformers, in addition to the rehabilitation of low voltage networks, and finally the installation of electricity poles and towers with aluminum and copper cables⁽⁸⁴⁾. During the war years, the regime tried to carry out a repair process for some of the power stations and restore them to service. However, the process was not compatible with the extent of the destruction that occurred, since the regime was announcing plans to rehabilitate the electricity sector at a cost of billions of dollars, without having neither the required financial resources nor a third party to provide the funding. Therefore, these projects remained ink on papers. After all, their objective was to create a kind of illusion among the Syrians that something is really changing.

The Syrian regime has signed a cooperation agreement with Iran, in order to rebuild the electricity network in Syria. The agreement includes developing the electrical equipment industry as well as establishing power plants and transmission and distribution networks⁽⁸⁵⁾. However, these agreements remain doubtful/suspended, just like the agreements with Russia, because both countries are unable to provide any financial assistance due to their own economic situation, in addition to them being subjected to economic sanctions by the international community, mainly from the United States of America, and to the drop in oil prices and

den, Finland, Japan, United Kingdom, Japan, Kuwait, Netherlands, France, Italy, Turkey and Jordan. The main objective of establishing this fund was to provide basic services to Syrians, with funding from donors for priority projects that would provide basic services in sectors such as water, electricity, health, education and security food. However, the activities of this fund remained limited and confined to some areas not under the regime's control, because the expected political solution has not been achieved until today.

(83) Enab Baladi newspaper, Ampere Cities: Electricity networks collapse before the eyes of Syrians, 2016, <https://bit.ly/3sU-9ZZC>

(84) The Syria Reconstruction Trust Fund, Starting Infrastructure Works for the "Rehabilitation of Electrical Transformers Phase Two" intervention in Raqqa Governorate, May 2021, <https://bit.ly/3yOkeCx>

(85) This matter came from the Syrian regime's media, and the source was the Russia Today Network, \$4 billion losses in the electricity sector in Syria, 2019, <https://bit.ly/3bDUCP2>



the repercussions of the Corona pandemic⁽⁸⁶⁾, among others. In a television interview with the (Al-Ikhbariya Al-Souria) state channel on April 13, 2021, Minister of Electricity in the regime government Ghassan Al-Zamil⁽⁸⁷⁾ said there was no possibility to reduce the long rationing hours. He explained that the generation capacity was about 2500 megawatts distributed to all Syrian governorates⁽⁸⁸⁾. He added that only 230 megawatts are supplied to Aleppo governorate, while the quantity before the Syrian war was about 2000 megawatts. He pointed out that the quantities of gas supplied by the Ministry of Oil to the Ministry of Electricity are about 8 million cubic meters of gas per day, while the need is 18 million tons. Apart from the modest statements and projects to rehabilitate the generation sector, the electricity supply remains very weak and much lower than the demand, and this leads to long-hours of electricity rationing, as electricity reaches homes and facilities only a few hours a day. We can refer to the annual statistical report issued by the Ministry of Electricity of the Syrian regime, in 2019, which is the latest statistical report issued by the General Establishment for Electricity Generation⁽⁸⁹⁾. The impact of the lack of electricity generation extended to various aspects of public and private life. In addition to the lack of electricity, there is the lack of companies' financing and the weak market, and to companies working with a portion of their production capacity sometimes not exceeding 20-30%, although a large part is still permanently closed.

On the other hand, this has impacted the civilians and their daily lives, especially since the rationing of electricity has increased a lot, and dependence on generators and the "amperes" system has become essential in people's lives. That translates into more financial costs that burden the Syrian families who are also suffering from other consequences of the war.

(86) Iran's revenue from oil sales amounted to \$7.9 billion between 2019 and 2020, while its oil revenue reached \$105.6 billion in 2011 and 2012.

Michael Young, The Wages of Destruction, Malcolm H. Kerr Carnegie Middle East Center, June 2020, <https://bit.ly/30zv7rU>

(87) <https://www.youtube.com/watch?v=dk5jWTmVhoQ>

(88) The installed generation capacity in 2010 was equivalent to 8,500 megawatts, while the stations in service in 2021 and 2,500 megawatts, or about 30% of the installed capacity.

(89) The annual statistical report issued by the Ministry of Electricity of the Syrian regime for 2019, which is the latest statistical report issued by the General Organization for Electricity Generation, <https://bit.ly/3kVrLcc>



Chapter Five:



Iran's and Russia's expectations in Syria's HydroCarbone Sector

Iran comes to the rescue of the regime

From day one, Iran has been the number 1 supporter of the regime, whether with experts, weapons, money, or militias. After the regime lost its control over the oil fields, and despite the imposed US sanctions, Iran insisted on continuously supplying the regime with needed crude oil. In fact, oil shipments from Iran to Syria between 2011 and 2020 are estimated at about 2 million barrels per month⁽⁹⁰⁾, the last of which was estimated at one million barrels of crude oil, and occurred in the first quarter of 2021. It crossed the Suez Canal despite the ongoing US pressure on Iran to prevent it from supplying the Syrian regime with oil⁽⁹¹⁾.

Therefore, the Syrian regime signed a credit contract with Iran worth \$3.6 billion in 2013, in order to obtain petroleum products⁽⁹²⁾. We note here that there are no accurate estimates of the limits of the Iranian credit⁽⁹³⁾. According to Reuters, the bond was set at \$4.5 billion in 2019⁽⁹⁴⁾, but the Asian Times⁽⁹⁵⁾, among others, set the limit at a higher number: \$7.6 billion.

On a different note, Iran is seeking to compensate part of the huge expenditure it incurred to support the Syrian regime, a number estimated by some at \$25 billion⁽⁹⁶⁾. Therefore, it took control of some oil and gas fields, mainly Block No. 12, which is located south of Al-Bukamal city, with an area of 7500 square kilometers. So, Iran took control of the block under the credit contract signed between Tehran and Damascus⁽⁹⁷⁾. The block is located in the same area where

(90) Reuters, Iran grants Syria \$3.6 billion credit to buy oil products, July 2013, <https://reut.rs/3eONhww>

(91) Al-Araby Al-Jadeed newspaper, Iranian oil shipments en route to Syria, April 2021, <https://bit.ly/3yn4Xsg>

(92) Middle East monitor, Iran shipment of 3.5\m barrels of oil approaching Syria, April 2021, <https://bit.ly/2QRaqq2>

(93) Karam Shaar and Ali Fathollah-Nejad, Iran's credit line to Syria: A well that never runs dry, Atlantic Council, February 2020, <https://bit.ly/3eWZFMm>

(94) Reuters, Eyeing reconstruction, Syria and Iran strike deal to allow bank transfers, 2019, <https://reut.rs/3u6sTNe>

(95) Asia-Times, Syria leases Mediterranean port to Iran, April 2019, <https://bit.ly/2T4783F>

(96) <https://www.iiss.org/publications/strategic-dossiers/iran-dossier/iran-19-02-introduction>

(97) Al-Modon newspaper, "Al-Bukamal Contract" Assad pays off his debt to Iran on Russian terms, May 2020 <https://bit.ly/2RmedfD>

the Imam Ali base is located, which is the largest Iranian military base in that region. The Iranians also concluded a contract to invest the field No. 27⁽⁹⁸⁾, in Al-Bukamal city in Deir ez-Zor province on the Syrian-Iraqi border. A direct clash occurred between Russia and Iran in the Al-Hassian oil field in Al-Bukamal in the first months of 2021 after the Russian military police asked the Iranian militias to leave the field, as Iran refused to leave calling its presence “legitimate” based on agreements signed by Tehran with Damascus earlier⁽⁹⁹⁾.

Russia’s ambitions for limited oil and gas wealth:

Russia’s goal in its intervention in Syria was political and strategic rather than economic. Therefore, it protected the Assad regime in the Security Council and prevented any effective decision from being taken against it, despite its actions that qualify as genocide and crimes against humanity, especially the use of chemical weapons many times during the war years.

Russia also sought, especially after its military intervention in Syria in September of 2015, to acquire the natural resources owned by Syria, such as the Mediterranean gas, phosphate mines and the port of Tartus, by signing agreements with unfair terms for the Syrian economy. For long periods of time, it also sought to seize the largest possible amount of the limited underground resources in Syria, to compensate for part of its losses. It tried to get its hands on the Al-Ward and Al-Taym fields, in the area controlled by the Syrian regime forces in Deir ez-Zor governorate, or as it is called the “Al-Shamiya” area, in the Levant region.

Russia, through the experts sent at the beginning of 2021, aimed to restore these wells to their previous production capacity. This is after the Al-Taym and Al-Ward fields resumed production in 2017. Al Taym’s production is estimated at about 2,500 barrels per day, whereas Al-Ward’s is about 5,000, until 2020⁽¹⁰⁰⁾. Russia withdrew its oil experts from the field, exactly a month after sending them⁽¹⁰¹⁾; a step that came after reaching the conviction that investing in these fields is almost useless. According to (Syria TV), the Russians were planning to operate

(98) Syria TV, Russian oil experts evaluating the Al-Ward and Al-Taym fields to invest and increase production, Abdel Qader Dwaihi, March 2012, <https://bit.ly/3e8BHfp>

(99) Syria TV, the agreement of Russia and Iran collides in Al-Hassian in Deir ez-Zor What happened, Abdel Qader Dwaihi, March 2021, <https://cutt.us/hcUAF>

(100) Syria TV, Russian oil experts evaluating the Al-Ward and Al-Taym fields to invest and increase production, Abdel Qader Dwaihi, March 2021, <https://bit.ly/3e8BHfp> <https://bit.ly/3e8BHfp>

(101) Syria TV, After evaluation, Russia withdraws its oil experts from two fields in Deir Ezzor, April 2021, <https://bit.ly/33TBmbI>



the field in order to generate electric power in the first place, and to benefit from the revenues of this field, even if it was a small amount, but it became clear to them that the investment there is almost unfruitful, so they withdrew their experts.

Russia also took control of the Al-Thawra oil field and the Tuenan gas field in Al-Raqqa, after it expelled the Iranian militias from these two fields. The fields' production is estimated at about 2,000 barrels of oil per day for the Al-Thawra and about three million cubic meters of gas per day from the Tuinan gas field⁽¹⁰²⁾. The Syrian regime benefits from these fields, to cover part of its domestic needs of fuels and gas.

Russia's eyes on the Syrian gas in the Mediterranean:

Speaking of the gas reserves that Syria possesses in the Mediterranean, a Norwegian company called INSEIS concluded in 2005 an agreement with the Syrian Petroleum Company, in order to conduct an exploratory survey of an area of 10,000 square kilometers, which is the exact same area of Syria overlooking the Mediterranean. The Syrian regime did not disclose this information, as usual, especially that information related to the energy sector is often not available. In 2011 a French company called CCG Vertitas, which had previously acquired the assets of the Norwegian company, revealed the result of the seismic survey analysis previously conducted, saying that the Syrian marine area is a geologically complex area, and that signs show that oil and gas reserves are existent in three basins in Syria⁽¹⁰³⁾.

There are three sedimentary basins on the Syrian coast, and there are positive signs of oil and gas deposits. This is with regard to Syrian gas on the Mediterranean. As for gas on land, Syria owns reserves of about 8.5 billion cubic meters of natural gas⁽¹⁰⁴⁾. However, the statements of the Syrian regime were vague on this issue, and were just media outlets issued by the newspapers affiliated with the Syrian regime, as we previously outlined. One of the former oil ministers in the regime government, Sufian Al-Allaw⁽¹⁰⁵⁾, stated that the Al-Dow basin area

(102) Iran was in complete control of the Tuinan gas field, from which it produces about 3 million cubic meters of gas and 60 tons of domestic gas per day, under the supervision of the "Hesco" company, before Russia took control of this field in the year 2021, Middle East, Russia is expelling Iranian militias From oil and gas fields, March 2021 <https://bit.ly/32m9bS8>

(103) Harmon Center for Contemporary Studies, Syrian Sea Oil in the Hands of Corrupt "Panama" and "Offshore", September 2020, <https://bit.ly/2NofIRJ>

(104) According to the specialized oil and gas magazine, Syrian sea oil is in the grip of corrupt "Panama" and "offshore", Harmon Center for Contemporary Studies, September 2020 <https://bit.ly/2NofIRJ>

(105) Samir Seifan, a Syrian economist who worked for several years in the oil sector, as a manager of the British branch of Petrofac in Syria.

alone possesses an estimated gas reserve of 47 billion cubic meters of gas, which can only be verified through exploratory drilling. However, it can also be confirmed by Syrian economist Samir Seifan that previous surveys showed the presence of gas in Syrian marine waters, without the availability of accurate statistics on the exact number of gas reserves there. He stressed that this requires drilling exploratory wells, which has not happened so far, but the discoveries made by Egypt and Israel in the Mediterranean proves with some certainty the availability of Syrian gas⁽¹⁰⁶⁾. (See Table No. 19 below):

No	Field Name	Year of Discovery	Location	Estimates of amounts susceptible to be extracted (million cubic meters)
1	Gaza Marine	2000	Palestinian Lands	30
2	Tamar	2009	Israel	280
3	Leviathan	2010	=	620
4	Tanin	2012	=	34
5	Karish	2013	=	51
7	Ruby	2014	=	90
8	Aphrodite	2011	Cyprus	140
9	Zahr	2015	Egypt	850

Table No. 19 shows the most prominent gas discoveries in the eastern Mediterranean⁽¹⁰⁷⁾

According to numerous cross references and literature found by the research team, most of the Syrian regime's statements have political rather than economic motives. Their aim is to create the impression that Syria and its regime are being targeted because of this undiscovered underground wealth, specifically the Syrian reserves in the Mediterranean waters.

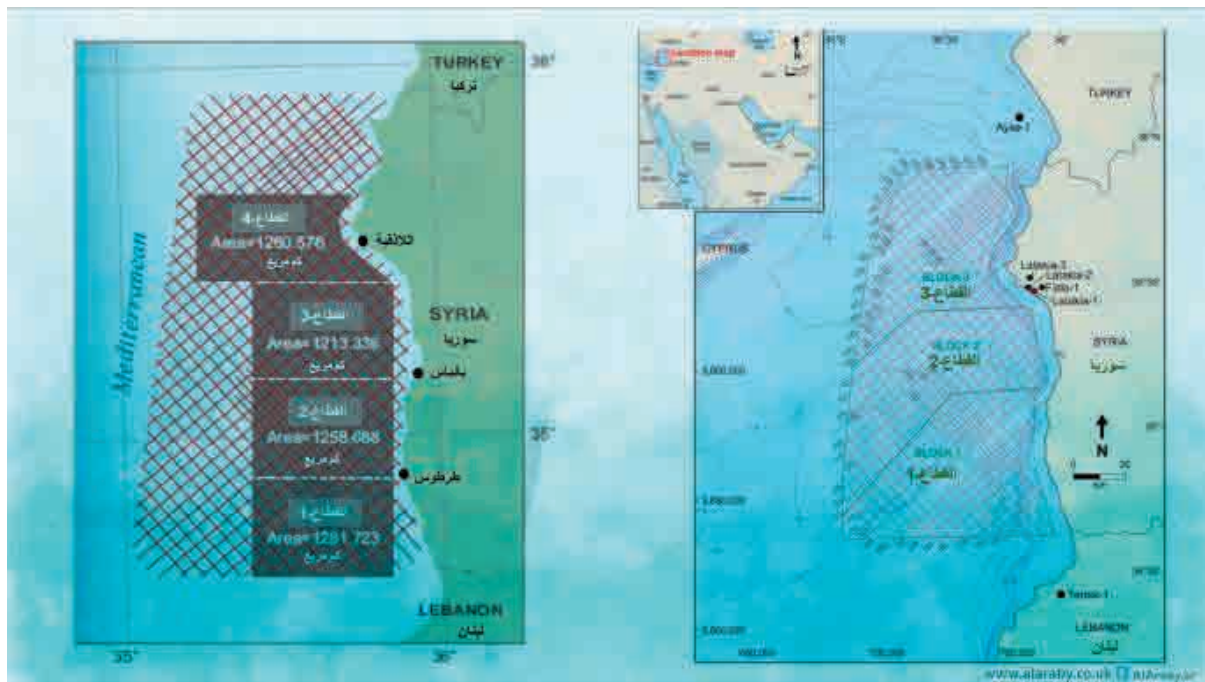
The Minister of "Oil and Mineral Resources" in the Syrian regime, Ali Ghanem, stated in 2019 that it is expected that the commercial production of gas would start in 2023. He also indicated that the estimated reserve of one block, out of the four marine sectors located in the Mediterranean Sea of Syrian marine territory, is equivalent to the reserves of the whole Syrian land territory, and is estimated at about 250 billion cubic meters per block.

(106) Harmon Center for Contemporary Studies, Syrian Sea Oil in the Hands of Corrupt "Panama" and "Offshore", September 2020, <https://bit.ly/2NofRl>

(107) The gas fields discovered in the Mediterranean do not show information about any gas field in Syrian waters on the Mediterranean. Source: Al Jazeera Network 2020, a treasure in the waters of the Mediterranean. Who will win the next gas war? <https://bit.ly/3apYraa>

However, these statistics are issued by one source, the Syrian regime⁽¹⁰⁸⁾, and therefore cannot be fully verified, especially that there are no real and accurate statistics on this subject, and there have not been sufficient exploratory surveys that pinpoints an objective estimate of the reserves, which leads us to think that the revealed numbers are exaggerated.

There are statistics issued by the US Geological Survey⁽¹⁰⁹⁾ on the initial estimates of Syria's natural gas reserves in the Mediterranean, mentioning 700 billion cubic metres of total gas reserves in Syria, which is a false number since the number is already estimated at 28 trillion cubic metres. According to the Minister of Oil and Mineral Resources in the government of the Syrian regime, Unit 23 is a gas field with an area of 2,159 square kilometers, located north of the Syrian capital Damascus, while Unit 7 is an oil field with an area of 9,351 square kilometers, located east of the Euphrates, and gas reserves are 250 billion cubic meters in each unit⁽¹¹⁰⁾.



Picture No. 5 shows the four sectors in the Syrian marine waters that were put up for tender twice: the first in 2007, when only one British company applied, and the second in 2011, when no company applied, knowing that the area of these four sectors is 7750 square kilometers.

(108) Russia Today, Syria Expects Commercial Gas Production in 2023, May 2019, <https://bit.ly/3s4lIEG>

(109) Assessment of undiscovered oil and Gas resources of the Levant basin province, Eastern Mediterranean, <https://on.doi.gov/2NPQL86>

(110) Syria TV, the regime grants "Putin's chef" and his mercenaries a quarter of the oil and gas in Syria, January 2020, <https://bit.ly/3jaldFM>

Source: Al-Araby Al-Jadeed (<https://bit.ly/3bd6MwT>) September 2020

After the outbreak of the Syrian revolution the Syrian regime signed an agreement in 2013 with a Russian company called “Soyuz Naphtha Gas”, under the name “Amrit Contract”, for oil and gas exploration in the Syrian territorial waters in the Mediterranean Sea. The contract includes monitoring, and exploration operations on an area of 2190 km² for 25 years. In 2019, the Syrian Regime’s People’s Assembly granted two Russian companies, namely Mercury and Velada⁽¹¹¹⁾, a license to explore and extract oil, in order to develop three blocks of gas and oil fields of 12,000 square kilometers, and of gas reserves of three quarters of a trillion cubic meters⁽¹¹²⁾.

According to some research⁽¹¹³⁾, Soyuz Naphtha Gas is a renowned company specializing in the field of onshore drilling, and it has no past offshore drilling or exploration activities. Knowing that it was founded in Panama, not in Russia, it has changed its name to “Swiss Naphtha Gas Med IS”, and then to a third name, “East Med Amrit SA”. Therefore, there was a contradiction in the announcements made by the Syrian regime; the first time, the newspapers affiliated with the Syrian regime reported that the company had a “Panamian” nationality, while subsequent announcements came from the Syrian regime’s media, saying that the company is of Russian origin. There is a lot of mystery and secrecy about this company, which does not have anything on its website that proves its experience or the countries in which it operates, although it explicitly states that it operates in 20 countries around the world⁽¹¹⁴⁾. Until the end of 2020, this company had not accomplished any significant work in the Syrian territorial waters of the Mediterranean. On the contrary, this company announced five years ago, specifically in 2015 at the Reuters Investment Summit in Russia, through its CEO, that it cannot fulfill its obligations as stipulated in the contract, and thus, will withdraw from Syria due to the ongoing conflict in it, leaving room for other Russian companies to continue their work there⁽¹¹⁵⁾. And yet, after a few years of signing the agreement with this company, no result of gas exploration has appeared, knowing that the term of the contract expired in 2020.

(111) Syria TV, Russia’s “Tat Naft” intends to resume exploration in Syria, December 2020, <https://bit.ly/2LfhYQS>

(112) Syria TV, the regime grants “Putin’s chef” and his mercenaries a quarter of the oil and gas in Syria, January 2020, <https://bit.ly/3jaldFM>

(113) Mustafa al-Sayed and others, Syrian Sea Oil in the Grip of the Corrupt in Panama and Offshore, Harmoon Center for Contemporary Studies, <https://bit.ly/3tL0op1>

(114) Harmoon Center for Contemporary Studies, Syrian Sea Oil in the Hands of Corrupt “Panama” and “Offshore”, September 2020, <https://bit.ly/2NofiRj>

(115) Harmoon Center for Contemporary Studies, Syrian Sea Oil in the Hands of Corrupt “Panama” and “Offshore”, September 2020, <https://bit.ly/2NofiRj>



The agreement with the Russian “Capital” company:

In 2020, the Syrian regime, through the Minister of Oil and Mineral Resources, concluded a contract with the Russian company, “Capital Limited”⁽¹¹⁶⁾, to explore oil in offshore Block No. 1. The contract includes exclusive rights for the company to explore oil in economic waters, within an area of 2,250 km Square. The contract shall extend to two time periods: the first term is the exploration period, covering 48 months, extendable to an additional 36 months, and the second period is the development phase, with a duration of 25 years, extendable to five additional years⁽¹¹⁷⁾. The following year, specifically in the third month of 2021, the People’s Assembly ratified this agreement, by issuing Law No. 10 of 2021, and this agreement was published in the Official Gazette, on March 17, 2021. Amy McKinnon, National Security and Intelligence Correspondent for Foreign Policy, stated in an article published on May 17, 2021 that “The Russian Capital Corporation is part of a network of companies that are a shadow of the mysterious Russian mercenary group known as Wagner. The writer added that it is another Wagner company, which had concluded a deal with the Syrian government earlier and had given it a 25 percent share of the revenues of the oil and gas fields liberated from the control of the “Islamic State”.

At least two other companies, said to be linked to Wagner, concluded oil and gas deals with the Syrian government in late 2019, and the Syrian parliament has approved three exploration and development contracts in Oil fields, each believed to contain 250 billion cubic meters of gas. The Russian newspaper (Novaya Gazeta) later reported that “Mercury and Velada have long-standing relations with Prigozhin.”⁽¹¹⁸⁾

Due to the actual circumstances, the fictitious company Capital will not perform any of its contractual obligations especially that the situation in Syria will remain ambiguous for a while, and most importantly, because it is not able, neither financially nor technically, to implement such projects. The company is not known as an oil and gas production company, and it concluded this contract for its own interest, in order to- according to the analysis of the Research team – wait for the right circumstances to assign it to a company capable of implementation, while reaping a large amount of profit without effort, or to enter into partnership with a company that is financially and technically capable, especially since Article 20.1 of the signed contract allows it to waive at any time. And to prove that this contract is a contract of submission,

(116) The name of the company is Kapital Limited Liability Company, and its owner according to the contract is Igor Viktorovick Khodyrev

(117) Syria’s oil and gas exploration deal with Russia threatens maritime dispute with Lebanon, Middle East Eye, April 2021, <https://bit.ly/3e2xDyA>

(118) Foreign Policy, Putin’s Shadow Warriors Stake Claim to Syria’s Oil, April 2021, <https://bit.ly/3wicvKV>



with the Russian will prevailing and imposing unfair terms on the Syrian party. “Article 4.1.1”, for example, stipulates that the contractor shall spend only 13 million US dollars, during the entire period of exploration. This amount does not exceed—in our opinion-10% of the amount that the contractor should spend in such a marine contract. In the in land fields, companies that concluded concession contracts for oil and gas exploration with the Ministry of Oil and Mineral Resources, prior to 2011, had to commit to spending at least 15-25 million during a 4-year exploration period, while now any offshore contract requires much greater expenses which should never be less than \$100 million. This means that the company wants to sign the contract and wait for the developments of the situation in Syria. What is clear is that Russia is trying to use the gas issue in Syria as a political card regardless of the economic aspect, and that changing the company’s name is nothing but a way to escape the penalties of the Caesar Act approved by the US administration, which prevents any external party from contracting with the Syrian regime to supply it with Petroleum products⁽¹¹⁹⁾.

Also, when signing any agreement with the Syrian regime, Russia uses the names of small nominal companies, not real capable one, and this is in order to acquire them for long periods of time, and then sell them after a political solution is reached in Syria. It goes without saying that the Russian government does not abide by the unilateral sanctions imposed by the United States, because they are not UN sanctions. In spite of that, Russian companies take care not to fall under US sanctions, for fear of their interests being affected by US measures.

(119) Congress.gov, Caesar Syria Civilian Protection Act of 2019, <https://bit.ly/37wsqeO>



Conclusion

Even before 2011, Syria was not considered an oil country, but oil production played an important role in the national economy, especially for the state treasury. Although the oil sector provided only a few tens of thousands of job opportunities, with relatively good wages, it was a major source of hard currency for the state treasury; which played a prominent role in extricating Syria from its stifling economic crisis back in the eighties, when financial support from Arab oil-exporting countries, especially the Gulf states, was cut off.

The revenue was estimated at between 1.5 and 2 billion Dollars annually at that time. As for the Arab support, it stopped after Hafez al-Assad sided with Khomeini's Iran, in his war on brotherly Iraq, which is ruled by the other branch of the "ruling" Baath party in Syria.

Oil production increased after the discoveries made in the eighties in Deir ez-Zor, until it reached a peak in 1996 with a daily production of 620,000 barrels per day.

However, it began to decline at a rate of 5% annually, to drop in 2010 to 380,000 barrels per day, in contrast to the increase in domestic demand, due to the increase in population, and in the number of factories, generating stations, cars and machinery, after lifting the ban of their imports.

Despite the increase in gas production after 2005, and the fact that it replaced fuel in supplying power, and the release of larger quantities of fuel for export, Syria was expected to transform into a net importer of oil and petroleum products between 2014 and 2015, meaning that the quantities of imported products exceed the quantities of crude oil and exports. Table No. (20) below shows the rapidly decreasing surplus value, between 2011 and 2015.

Statement (?)	2011	2012	2013	2014	2015
Price of Crude Oil Imports	3,965	3,838	3,841		3,944
Price of Petroleum Products	85.5	89.5	93.6	3,908	103.2
Total Price of Oil Exports	4,050.5	3,927.5	3,934.6	98.2	4,047.2
Price of Petroleum Products Imports	2,809	3,002	3,066	4,006.2	3,899
Difference between Imports and Exports of Petroleum Products	1,241.5	925.5	868.6	3,615	148.2

Table No. (20) The expected balance of hard currencies in Syria for the period 2011-2015 (value in millions of dollars)

Source: Fifth plan 2011-2015

And because the regime relied on surplus in oil revenues to finance its hard currency needs, consuming this surplus - due to increased consumption - would have put the regime in a difficult financial predicament, because the Baath regime had been destroying the production capacity of the Syrian private sector since 1963, the beginning of its rule. That was on one hand, on the other hand, the government economic sector was unable to replace the private sector in taking over the development of the Syrian economic capacity, which had been promising in Syria until the fifties. Back then, Syria was at the forefront of the third world countries, in terms of economic, social and political growth, but military regimes' control, during the years of Syrian-Egyptian unity, and then the control of the Baath regime, which brought about a military coup on March 8, 1963, was the cause of the destruction of the economic power in Syria and the destruction of the creative ability of the Syrian people.

During the war years, the oil and gas sector was at the center of attention, since the regime made repetitive claims that what is happening in Syria is not a popular revolution based on political, economic and social demands, but rather an "international conspiracy" against Syria and its "resistance" regime, a regime that, according to its media, refused to build a gas pipeline that would deliver Qatar's gas to Europe, although this matter was not raised or discussed before 2010.

Actually, in the event that Qatar were to suggest that, Syria would have welcomed it very much, since it provides the regime with large revenues that it desperately needs, and gives Syria a strategic role, even though Russia would have opposed it because of its aim to monopolize the European gas market without a competitor. As these outlets reiterated, the war on Syria came in greed for its wealth. Fictional high numbers of Oil and Gas reserves were propagated to justify the regime's claims, and to say that the regime is waiting for the war to end in order to invest these resources and rebuild Syria, and raise the standard of Syrians' lives.



During the war years, the oil fields were a battleground between the regime forces and the Free Army factions, with the former seeking to keep them until the last moment. After the Free Army factions took control of most fields, oil products turned, for some factions, into sources of financing and for spending in the local community, and into a corrupt source of enrichment for some faction leaders and investors. Then, they turned into a source of conflict with the “Jabhat Al-Nusra,” which took control of those fields. The Free Army factions were expelled, then (ISIS) came and expelled “Al-Nusra”, and took control of the fields and made them a source of funding for them, then ISIS was expelled by the international coalition led by the United States, which allied itself with the PYD forces on the ground, and both took control of most of the Oil fields in the governorates of Al-Hasaka, Deir ez-Zor and Raqqa, which constituted an annual financial source estimated at about one billion dollars, thus helping the Coalition to consolidate its control over the entire region east of the Euphrates.

Today, in the year 2021, the Syrian war has been going on for more than a decade, and the popular uprising has turned into a civil war, first because of the regime’s violence, and second because of external interventions. The question remains about the role that the oil and gas sector can play in rebuilding Syria, after it suffered a great deal of destruction and devastation, especially the Deir Ezzor and Raqqa fields, while the Al-Hasaka fields remained intact, as the regime handed them over to the Kurdish PYD forces.

It will now be difficult to estimate the extent of damage to oil and gas stocks, and facilities, and to assess the restoration cost, by comparing the costs of restoration and the size of the recoverable reserves from the fields (annual quantity and duration). This is a work reserved for special companies that need to make studies and evaluations. Such investors are easily found, especially if the payment is good; but the arrival of investors is contingent on the return of stability and the lifting of sanctions, and this in turn depends on a political solution based on political transition, which is unclear for the time being, with the stagnation of the situation in Syria, and the actual division of Syria between four regions controlled by four parties that have four governments.

Regarding expectations of gas to be found in the Syrian territorial and economic waters in the Mediterranean, this also requires expert companies that know the size of the reserves that can be produced and evaluate their costs.

However, the contracts were concluded with non-expert Russian companies (as we mentioned above) and were on unfair terms for Syria, and they did not do any work so far, has not spent any money, because they are also waiting for stability in the overall situation and for the lifting of sanctions in order to sell these contracts to companies capable of production, or enter into a partnership with them; that if their claims are true in the first place. Therefore, it is



difficult to speculate the role that these offshore fields could play in raising funds for the public treasury, which would contribute to the financial and social reconstruction of Syria.

Despite this, the role that the oil and gas sector can play remains important. It provides part of the domestic demand for petroleum products that could serve for various purposes, including electricity generation; also, there may be new discoveries, especially in offshore fields, that will make Syria an oil-exporting country, even if by a small amount. In all cases, the oil and gas sector will remain important since it carries the key in the reconstruction of Syria, financially and socially. Its exploitation now awaits the return of stability, which is based on achieving a political solution that leads to a democratic system that respects the will of the Syrian people. All in all, a matter that is subject to the consensus of the main players in the Syrian issue (Russia, Iran, the United States, and Turkey), but there are no clear signs of anything happening anytime soon.



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