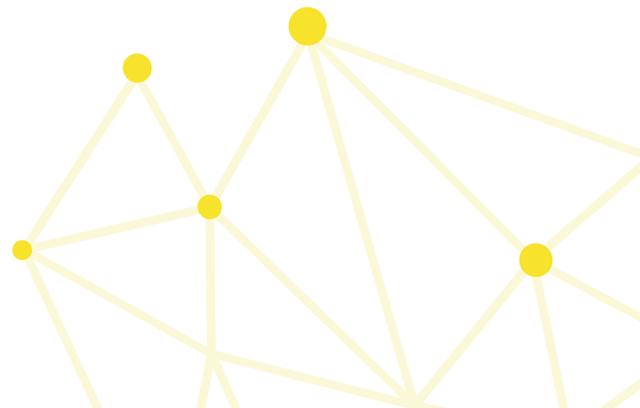
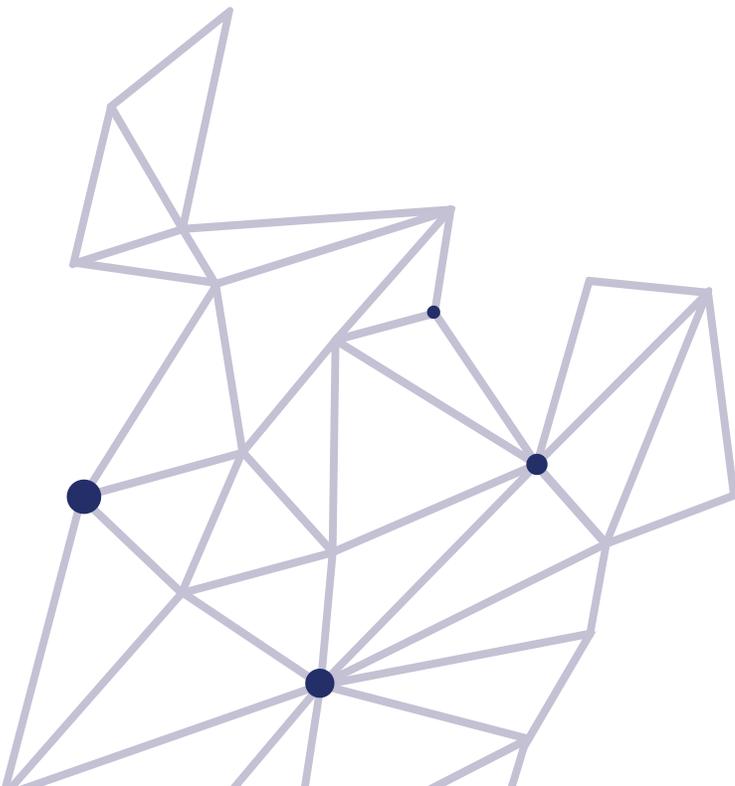


# EUROPEAN UNION POLICY TOWARDS THE WASH CRISIS OF THE GAZA STRIP

Beyond short-term and ineffective humanitarian interventions, advocating for European policies that support Palestinians' energy independence and sovereignty over their natural resources

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*September 2019*



## EXECUTIVE SUMMARY

### State of play

The Gaza Strip faces a dual water crisis. On one side, **its wastewater treatment system is collapsing**, with only four plants operating for 1,8 million inhabitants. 116.000 cubic meters of untreated sewage flow in the Mediterranean Sea on a daily basis, and more than a quarter of Gaza residents live in areas without adequate sanitary sewage infrastructures. On the other side, **Palestinians in Gaza suffer from a lack of access to drinking water**. 96,4% of Gaza's groundwater is unfit for consumption and 95% of the population has to rely on desalinated water. Desalinated water costs five times more than network water and its quality mostly remains uncontrolled.

The water, sanitation and hygiene (WASH) sector crisis represents one of the main reasons that could render Gaza “uninhabitable” by 2020. **Poor water quality and insufficient water quantity jointly represent a serious threat for public health**. It is estimated that 28% of children's diseases are due to contaminated water. In 2018, figures released by the Palestinian Health Ministry showed that diarrheal diseases had doubled while also revealing a worrying increase in salmonella and typhoid fever cases. In general, studies show that polluted water is a leading cause of child mortality in Gaza. **Because of bacterial and viral pathogens traveling through sewage and waterways, ineffective sanitation leads to public health risks that extend to Egypt and Israel**. In June 2019, a study conducted by researchers from Tel Aviv and Ben-Gurion Universities has shown that “the collapsing water, sewage and electricity infrastructure in the Gaza Strip pose a material danger to Israel's groundwater, seawater, beaches and desalination plants.”

Three main factors drive Gaza's WASH crisis:

- The coastal aquifer, which provides 98% of Gaza's water supply, is overused and depleted.
- Water and wastewater infrastructures are highly deteriorated since the 2014 Israeli military offensive on Gaza. **They were never properly rebuilt because of the import restrictions that have been imposed for the past 12 years by the Israeli blockade and its “dual-use policy”**. Today, 70% of construction materials that would be necessary to maintain water and sanitation facilities are forbidden to enter in the Gaza Strip.
- Above all **the WASH crisis is intrinsically intertwined with Gaza's energy crisis**. Indeed, it stems from insufficient energy supply, which limits the operation of water and wastewater treatment facilities and impedes their reliability. In the best case, water facilities in Gaza only receive 8 hours of electricity per day.

In effect the Gaza Strip is affected by a permanent electricity deficit. While the electricity demand reaches between 473 MW to 496 MW per day, the supply only amounts to around 190-200 MW. **Gaza's energy dependence on Israel and the Palestinian Authority (PA) makes this already low energy supply unreliable**, with regularly occurring situations where **electricity supply is used by Israel or the PA as an instrument for political pressure** against Gaza and its ruling authority. For instance, in March 2017, the PA announced to Israel that it would no longer pay for Gaza Strip's consumed-electricity bill. Consequently, the amount of electricity delivered by Israel to Gaza decreased, which severely impacted the operation of WASH facilities.

Yet energy dependence is not a fatality for the Gaza Strip, since **Palestinians do possess large gas resources located in the Gaza Marine fields**, which are located within the contiguous zone attached to Palestinian territorial waters, 17 to 21 nautical miles (nm) from the Gaza coast and 36 km West from Gaza city. However **their exploration has always been blocked from the Israeli side, including through the imposition of the maritime blockade**.

## EU and EUMS policy

Since 2006, €149 million have been mobilized by the European Commission to develop energy, water and sanitation services and infrastructures in the occupied Palestinian territory (oPt). In the Gaza Strip, the EU and EUMS have recently funded two new wastewater treatment plants, a photovoltaic solar field to supply additional electricity to the Southern Gaza Desalination Plant (SGDP), which was previously funded by the EU, and the Gaza Central Desalination Plant (GCDP). However **the implementation of these infrastructures is always very limited and unreliable on the ground because of electricity shortage**. Wastewater treatment plants and desalination plants today only operate at 15% of their capacity.

In general, despite recent and positive investments in renewable energy systems, these facilities rely on energy supply options that maintain the Gaza Strip in a relationship of energy dependency with Israel, which immediately makes the infrastructure's operation unreliable. These development and infrastructural projects fail to overcome the remit of occupation and participate in perpetuating the status quo. **In short, the EU and EUMS fund WASH infrastructures that are operating ineffectively, due to final reliance on Israel's energy supply**, and Israel's readiness to weaponize their position of supplier for political purposes. Thus, **it is shortsighted to continue investing in WASH infrastructure, when the core problem inhibiting the operation of existing infrastructure is energy supply and dependency**.

In addition to the ineffectiveness of current EU policy on the WASH crisis, if the EastMed pipeline project comes to reality the EU and several EUMS would directly become complicit with the naval blockade imposed on the Gaza Strip by Israel. They would thus not only ignore the core problem of the crisis (i.e., energy dependency), but also perpetuate the very existence of said problem.

## Policy recommendations

- In order to be truthful to its commitments outlined in the European Joint Strategy in support of Palestine 2017-2020, **the EU should exert its economic and diplomatic power to pressure Israel to let Palestinians exploit the Gaza Marine gas fields**. The reserves of the two wells are estimated to be 1,4 trillion cubic feet (tcf), which could be sufficient to meet Palestinian needs for the next 25 years.

- Supplying electricity to the West Bank and the Gaza Strip via Gaza Marine offshore field is also **a way to take action against Gaza's isolation**, through the development of a more unified Palestinian energy system, and to foster cooperation between the PA and Hamas.

- For the PA, the exploitation of the Gaza Marine fields represents **an energy supply alternative that would benefit Palestinian economy as a whole** and directly serve the PA's ambition to move towards less economic dependence on Israel.

- **Providing Palestinians with their own natural gas supply would be economically beneficial to the EU and EUMS too**, since it would reduce Palestinians' need for international assistance, which includes EU aid that overall amounts up to \$6 billion since 1993.

- **This long-term solution would also benefit Israel**, whose coast and groundwater are seriously affected by untreated sewage that flows into the Mediterranean Sea.

## CONTENTS

- **ABSTRACT** **P3**
- **RÉSUMÉ** **P3**
- **PART I - STATE OF PLAY: ORIGINS AND IMPLICATIONS OF THE WASH CRISIS IN THE GAZA STRIP** **P4**
  - An acute water, sanitation and hygiene crisis p4
  - Gaza's intertwining water and energy crisis p6
  - Violation of Palestinians' right to rely on their natural gas resources p8
- **PART II - EU AND EUMS POLICY: FUNDING INEFFECTIVE INFRASTRUCTURES AND SUPPORTING THE BLOCKADE OF THE GAZA STRIP** **P12**
  - Ineffective water facilities conceived within the context of occupation p12
  - European complicity with the Israeli naval blockade of the Gaza Strip p14
- **PART III - POLICY RECOMMENDATIONS: SUPPLYING THE GAZA STRIP WITH PALESTINIAN GAS RESOURCES** **P16**
  - Connecting Gaza with natural gas infrastructures for a cheaper and reliable electricity production p17
- **EXECUTIVE SUMMARY** **P19**
- **REFERENCES** **P20**

## ABSTRACT

The paper at hand deals with the water and sanitation crisis currently faced by the Gaza Strip and aims to demonstrate to what extent this crisis is intertwined with the energy crisis resulting from the Israeli-imposed blockade and from Gaza's energy dependence on both Israel and the Palestinian Authority. It seeks to analyse European policies towards this situation, while specifically noting that "access to self-sufficient water and energy services" is the 4<sup>th</sup> pillar of the European Joint Strategy in support of Palestine 2017-2020. The paper will highlight a paradox that results from a number of contradictions in the European policies and their implications on the ground. It will be argued that the EU and its member states indirectly encourage Israel to maintain the naval blockade on the Gaza Strip, which prevents Palestinians from accessing their natural gas resources, while at the same time funding WASH infrastructures in Gaza that end up being largely ineffective because of electricity shortage. Within this context it will advocate for the possibility to supply the Gaza Strip with the gas from the Gaza Marine field, which is located in Palestinian coastal waters. The gas field holds sufficient gas volumes for the whole occupied Palestinian territory (oPt) to become self-sufficient. While its development is today on hold as part of the Israeli blockade, the EU could exert diplomatic and economic pressure to push for the development of the gas field and devise concrete scenarios to supply the oPt with energy through exploiting its potential.

**Keywords:** Gaza, water crisis, energy independence, gas fields, European Union.

## RÉSUMÉ

Le présent article porte sur la crise de l'eau qui sévit aujourd'hui dans la bande de Gaza, et vise à montrer à quel point celle-ci est intrinsèquement liée à la crise de l'énergie, qui découle du blocus israélien ainsi que de la dépendance énergétique de Gaza vis-à-vis d'Israël et de l'Autorité Palestinienne. Il propose d'analyser les politiques européennes à l'égard de cette situation, sachant que l'« accès à des services d'eau et d'électricité auto-suffisants » fait office de 4<sup>e</sup> pilier de la Stratégie Européenne Commune pour la Palestine 2017-2020. Ce papier mettra en lumière un paradoxe qui résulte précisément des contradictions de ces politiques. En effet, l'Union Européenne et ses États-membres encouragent indirectement le maintien du blocus maritime israélien de la bande de Gaza, qui empêche les Palestiniens d'accéder à leurs ressources en gaz naturel, tout en finançant à Gaza des infrastructures WASH largement déficientes du fait de la pénurie d'électricité. À partir de là, ce papier défendra la possibilité d'alimenter la bande de Gaza grâce aux ressources en gaz du gisement Gaza Marine, situé dans les eaux continentales palestiniennes. Ce gisement contient suffisamment de gaz pour alimenter l'ensemble du territoire palestinien occupé (TPO). Si son développement est aujourd'hui sur pause du fait du blocus israélien, l'Union Européenne pourrait déployer des efforts diplomatiques et économiques pour promouvoir son exploration et sa production, et commencer à imaginer des scénarios pour alimenter le TPO grâce à cette nouvelle source d'approvisionnement énergétique.

**Mots-clefs:** Gaza, crise de l'eau, indépendance énergétique, gisement gazier, Union Européenne.

## PART I - STATE OF PLAY: ORIGINS AND IMPLICATIONS OF THE WASH CRISIS IN THE GAZA STRIP

Part I outlines in depth Gaza water, sanitation and hygiene (WASH) crisis, the factors that lead to the worsening of the crisis, as well as the main consequences in terms of public health inside and outside the borders of the Gaza Strip. It also analyses Gaza's severe energy crisis, which appears to be the leading factor of WASH infrastructure deficiency. It finally focuses on Israel's strategy to prevent the oPt from reaching energy independence, through the violation of Palestinians' right to access their natural gas resources located in the coastal waters off the Gaza strip.

### An acute water, sanitation and hygiene crisis

“If you really want to change the lives of people, you have to solve the water issue first. Otherwise, you will see a huge collapse of everything in Gaza.”<sup>1</sup> Such goes the warning of Adnan Abu Hasna, UNRWA spokesperson, pertaining to the emergent WASH sector crisis in the Gaza Strip. His observation is, however, far from new. In 1997, the World Bank already reported the water situation in Gaza as an “emergency state of affairs”.<sup>2</sup> Yet, this situation that was already critical at the time, has been continuously worsening over the past two decades and has reached proportions affecting every single aspect of Gaza's daily life.

On one hand, the Gaza Strip faces a complete collapse of its wastewater treatment system. There are only four wastewater treatment plants (in Beit Lahia, Gaza, Khan Younis Temp and Rafah) currently operational, far too little for Gaza's more than 1,8 million inhabitants.<sup>3</sup> Consequently, 116.000 cubic meters of untreated sewage flow in the Mediterranean Sea on a daily basis, and more than a quarter of Gaza residents live in areas without adequate sanitary sewage infrastructures.<sup>4</sup> On the other hand, the population of the Gaza Strip suffers from a dramatic lack of access to potable water. Gaza's coastal aquifer, which used to represent the main source of available freshwater, is progressively depleted. Since the 1990s, due to extremely rapid population growth, water demand in Gaza has dramatically increased. While amounting to 100 MCM per year in 2016, current calculations assume that the figure should reach 135 MCM in 2030<sup>5</sup> - a demand that cannot be met by groundwater replenishment.<sup>6</sup> Moreover, Gaza's groundwater also suffers from seawater intrusion, wastewater leakage and agricultural runoff. Therefore, 96,4% of Gaza's groundwater is today unfit for consumption, mainly because of chloride, nitrate and total dissolved solids (TDS) concentration.<sup>7</sup> As a result, only 10,1% of households in Gaza have access to improved drinking water, compared to 88,9% of households in the West

**The Gaza Strip faces a complete collapse of its wastewater treatment system.**

1 Sandy Tolan, “How can Gaza's contaminated water catastrophe be solved?”. *Al Jazeera*, October 30, 2018. <https://www.aljazeera.com/indepth/features/gaza-contaminated-water-catastrophe-solved-181030134509604.html>.

2 Clemens Messerschmid, “Water in Gaza: Problems and Prospects”, Paper presented at a conference organized by the Ibrahim Abu-Lughod Institute of International Studies: *Gaza-Palestine: Out of the Margins*, October 1-2, 2010, 9.

3 Interview with Mahmood Shatat, April 9, 2019.

4 Ibid.

5 World Bank, *Securing Water for Development in West Bank and Gaza*, (Washington DC: World Bank, 2018).

6 Shira Efron, Jordan R. Fischbach, Giulia Giordano, “Gaza's Water and Sanitation Crisis: The Implications for Public Health”, in *The Crisis of the Gaza Strip: A Way Out*, Tel Aviv: Institute for National Security Studies, 2017, 88.

7 Interview with Mahmood Shatat, April 9, 2019.

Bank.<sup>8</sup> Currently, Gaza's total population receives 5 hours of water supply every 3 to 5 days.<sup>9</sup> Studies have shown that the current amount of water received per capita per day sums up to only 53% of the amount recommended by the World Health Organization (WHO), which computes both water to drink and hygienic uses.<sup>10</sup> For drinking water only, 95% of the population has to rely on desalinated water, produced by 154 different public and private desalination plants.<sup>11</sup> Desalinated water costs five times more than network water - and its quality mostly remains uncontrolled, specifically when hailing from unregulated private desalination plants and suppliers. Studies show that two thirds of active desalination plants in Gaza deliver contaminated water.<sup>12</sup>

Several reasons impede the resolution of this dual water crisis. The overuse and depletion of the coastal aquifer, which provides 98% of Gaza's water supply,<sup>13</sup> is one of the leading factors of the water crisis. The crisis worsens because of the highly deteriorated state of water and wastewater infrastructures, which were severely damaged or destroyed in the 2014 Israeli military operation in Gaza.<sup>14</sup> During this offensive, water supply and treatment infrastructures were heavily targeted, and according to Gaza Coastal Municipalities Water Utility (CMWU), "the

**The crisis worsens because of the highly deteriorated state of water and wastewater infrastructures.**

most destruction occurred when the IDF start [sic] invading the Eastern, Northern and Southern borders by their tanks, where most of the water and wastewater facilities within 3 km from the Eastern and Northern Gaza Strip borders have been totally

demolished."<sup>15</sup> The total damage cost of these demolitions was estimated at up to \$34 million.<sup>16</sup> Additionally, **these infrastructures were never properly rebuilt because of the import restrictions that have been imposed for the past 12 years by the Israeli blockade and its "dual-use policy"**.<sup>17</sup> According to Mahmood Shatat, a water engineer who worked for the CMWU, these restrictions currently concern 5000 materials, including 3000 construction and electro-mechanical materials that fall under the WASH sector category.<sup>18</sup> Precisely, 70% of construction materials that would be necessary to maintain water and sanitation facilities are forbidden to enter in the Gaza Strip<sup>19</sup>.

Last but not least, **the WASH sector crisis stems from insufficient energy supplies, which limit the operation of water and wastewater treatment facilities and impede their reliability and limit their daily capacity.** In the best case, water facilities receive 8 hours of electricity per day.<sup>20</sup> Desalination plants, for example, are consequently only functioning at an average of 15% of their actual operational capacity.<sup>21</sup> Electricity shortages are a direct result of the

8 Shira Efron et al., *The public health impacts of Gaza's water crisis: Analysis and policy options*, 14.

9 UNICEF State of Palestine, *Humanitarian Situation Report*, Jerusalem: UNICEF, July-September, 2018, 2.

10 WASH Cluster in Gaza Strip, *Consequences of Electricity Crisis on WASH in Gaza Strip*, WASH Cluster, August, 2017, 8.

11 Interview with Mahmood Shatat, April 9, 2019.

12 Gregor Von Medeazza, "Searching for clean water in Gaza", *UNICEF*, January 10, 2019. <https://blogs.unicef.org/blog/searching-clean-water-gaza/>.

13 The 2% remaining are bought to the Israeli water company Mekorot.

14 The Operation Protective Edge was an Israeli offensive against the Gaza Strip launched in July 2014, which led to more than 2.000 Palestinian deaths (including more than 500 children) and more than 10.000 people injured.

15 CMWU, *Damages Assessment Report: Water and Wastewater Infrastructure*, (Gaza: CMWU, August, 2014), 2.

16 *Ibid.*, 6.

17 Since 2010 the Israeli Security Cabinet has established a list of "dual use" items, meaning they could be used either for military or civilian purposes. They can only enter in Gaza with an Israeli permission.

18 Interview with Mahmood Shatat, April 9, 2019.

19 *Ibid.*

20 Interview with Monther Shublaq, April 9, 2019.

21 *Ibid.*

blockade, and internal divisions within the Palestinian Authority. For instance, in March 2017, the PA announced to Israel that it would no longer pay for Gaza Strip's consumed-electricity bill. Consequently, the amount of electricity delivered by Israel to Gaza decreased, which severely impacted the operation of water and wastewater infrastructures.<sup>22</sup>

**Insufficient and irregular water supply, combined with untreated sewage that overflow into the streets and into the sea, have led to a serious humanitarian and environmental crisis.** Water scarcity makes the resource – in spite of its low quality - very expensive, resulting in Gazan families spending a third of their income on water.<sup>23</sup> Poor-water quality and insufficient water quantity jointly represent a serious threat for public health. It is estimated that 28% of children's diseases are due to contaminated water – the highest risk stemming from faecal contamination. The population of Gaza is considered particularly vulnerable on a world average, since 42,7% of its population is under 15 years old. Young children are more vulnerable to WASH-associated diseases, specifically pathologies resulting from water contaminated with chloride and nitrate.<sup>24</sup> In 2018, figures released by the Palestinian Health Ministry showed that diarrheal diseases had doubled while also revealing a worrying increase in salmonella and typhoid fever cases.<sup>25</sup> In general, studies have shown that polluted water was a leading cause of child mortality.<sup>26</sup> In 2016, Mohammad As-Sayis, a five-year-old child, drank sewage-laced seawater and ingested faecal bacteria. His case represents the first recorded death in Gaza directly relatable to the sewage crisis.<sup>27</sup> Needless to say (regardless of water quality-related health issues) insufficient water quantity for personal and domestic hygiene generally constitutes a grave risk for public health.<sup>28</sup>

Thus, the WASH sector crisis represents one of the main reasons that could render Gaza “uninhabitable” by 2020, as the United Nations (UN) recently warned. **However, public health risks go beyond Gaza's geographical borders.** Because of bacterial and viral pathogens traveling through sewage and waterways, ineffective sanitation leads to public health risks that extend to Egypt and Israel. In last June 2019, a study conducted by researchers from Tel Aviv and Ben-Gurion Universities has shown that “the collapsing water, sewage and electricity infrastructure in the Gaza Strip pose a material danger to Israel's groundwater, seawater, beaches and desalination plants.”<sup>29</sup> In the words of Ramzy Baroud and Romana Rubeo, Israel is progressively starting to face a “problem of its own making.”<sup>30</sup>

## Gaza's intertwining water and energy crisis | In Gaza the water crisis is intrinsically intertwined with the energy crisis.

As mentioned before, in Gaza the water crisis is intrinsically intertwined with the energy crisis. Since the beginning of the Israeli blockade, Gaza is affected by a permanent electricity deficit. While the electricity demand reaches between 473 MW to 496 MW per day, following a significant increase in demand since 2014, the supply only amounts to around 190-200 MW.<sup>31</sup> Yet, this amount is prone to decrease, specifically in regularly occurring situations where

22 WASH Cluster in Gaza Strip, *Consequences of Electricity Crisis on WASH in Gaza Strip*.

23 Shira Efron et al., *The public health impacts of Gaza's water crisis: Analysis and policy options*, 17.

24 Ibid, 26.

25 Sandy Tolan, “Gaza's drinking water spurs blue baby syndrome, serious illnesses”. Al Jazeera, October 29, 2019. <https://www.aljazeera.com/indepth/features/gaza-drinking-water-spurs-blue-baby-syndrome-illnesses-181029110434881.html>.

26 Shira Efron et al., *The public health impacts of Gaza's water crisis: Analysis and policy options*.

27 Sandy Tolan, “Gaza's drinking water spurs blue baby syndrome, serious illnesses”.

28 Shira Efron et al., *The public health impacts of Gaza's water crisis: Analysis and policy options*, 40.

29 Ramzy Baroud, Romana Rubeo, “Israel's ‘environmental crisis’ is of its own making”, Al Jazeera, July 7, 2019. <https://www.aljazeera.com/indepth/opinion/israel-environmental-crisis-making-190702152022497.html>.

30 Ibid.

31 Shira Efron et al., *The public health impacts of Gaza's water crisis: Analysis and policy options*, 20.

electricity supply is used by Israel or the PA as an instrument for political pressure against Gaza and its ruling authority. Since Israel refuses to collaborate with Hamas, deals on electricity and fuel supplies take place between the PA and Israel only. The Gaza Strip is thus dually dependent: to the supplier, Israel, as well as to the intermediary, the PA. Further attention towards the energy supply sources of the Gaza Strip gives the opportunity to elaborate on this statement.

The electricity supply to Gaza stems from three main sources: Israel, the Gaza Power Plant (GPP), and Egypt. The main supply amounts to 120 MW and directly originates from Israel through electricity feeder lines that are located 10-20 meters away from the fence enclosing the Gaza Strip.<sup>32</sup> The Israeli Electricity Company (IEC) and the Gaza Electricity Distribution Company (GEDCO) are jointly in charge of these lines, but maintenance operations happens under the control of the Israeli army.<sup>33</sup> These imports are unreliable, and have several times been subject to political pressures - since the Fatah-controlled PA is in charge of the payment of this electricity supply. Usually, Israel charges the PA 40 million shekels (around €10 million) per month for the electricity delivered to the Strip.<sup>34</sup> In April 2017, following the PA's refusal to pay for Gaza's electricity bill to Israel, the electricity supplied through the public grid dropped by 30%.<sup>35</sup> This refusal happened in a context of an increase in tensions between Fatah and its political rival, Hamas. The instance has been analysed as a way for the former to take revenge on Hamas, which had set up an "administrative committee" on Gazan affairs the previous month<sup>36</sup> - a move interpreted by Fatah as severely provocative, and questioning of its political legitimacy.<sup>37</sup> Thus, in April 2017 the number of hours of electricity cut off increased from 16 hours to 20 hours, which immediately led to a worsening of the WASH crisis. Water facilities became more dependent on electrical generators powered by diesel fuel, most of the time funded by governmental or non-governmental donors.<sup>38</sup>

Between 60 and 65 MW are produced and supplied by GPP, which needs 450,000 liters of diesel fuel to operate daily, and the Palestinian Electric Company (PEC). However once again the fuel supply to GPP is unreliable. For instance, in 2017 the PA, besides refusing to pay for Gaza's electricity bill, imposed higher taxation on the fuel sold by Israel and delivered to Gaza. It led to a decline in fuel purchases and to a temporary shutdown of GPP, after the tax-free fuel donations from Qatar and Turkey ran out as well.<sup>39</sup> Yet, the problematic fuel supply is not solely due to internal disputes in the PA. Fuel banning is a "punitive tool" that Israel frequently uses against Hamas and the inhabitants of Gaza themselves. Most recently, in June 2019, Israel banned the imports of fuel as a way to pressure Hamas to stop attacks involving incendiary kites and balloons. It once again provoked a serious fuel and electricity crisis.<sup>40</sup>

32 Susan Power, *Preventing the development of Palestinian natural gas resources in the Mediterranean Sea: Implications for Multinational Corporations Operating in Israel's Gas Industry*, Ramallah: Al Haq, 2014, 14.

33 Ibid.

34 This amount is deduced from the transfers of taxes that are normally collected by Israel on the behalf of the PA, mainly taxes on Palestinian imports, fuel taxes, VAT taxes and income taxes collected by Israel from Palestinian workers employed in Israel and Israeli settlements (Paris Protocol on Economic Relations, 1994).

35 Interview with Mahmood Shatat, April 9, 2019.

36 Maan News Agency. حماس تعلن حل اللجنة الإدارية [Arabic: "Hamas announces the dissolution of the Administrative Committee"] September 9, 2017.

37 The logic is supported by the fact that the PA had also decided to drop the salaries of its 60.000 civil servants in Gaza by 30%, in an obvious move of retaliation.

38 WASH Cluster, *Consequences of Electricity Crisis on WASH in Gaza Strip*, 3.

39 Gidon Bromberg et al., "The Water and Energy Crisis in Gaza: Snapshot 2017", in *The Crisis of the Gaza Strip: A Way Out*, Tel Aviv: Institute for National Security Studies, 2017, 82.

40 OCHA Occupied Palestinian Territory, *Protection of Civilians Report*, (Jerusalem: OCHA, June-July, 2019).

Finally, between 20 and 30 MW were for a while sold by Egypt, as part of the Hamas government's strategy to progressively replace Israeli fuel by another source of supply. However, in April 2017 Egypt's power lines into Gaza broke down, reducing the electricity supply coming from Egypt to zero.<sup>41</sup>

## Gaza's energy deficit and dependency make the water crisis resolution an unachievable objective.

Data collected in 2017<sup>42</sup>, a turning point in Gaza's electricity crisis, effectively demonstrate how deficits in electricity supply directly affect the operation of WASH facilities. They highlight why Gaza's energy deficit and dependency make the water crisis resolution an unachievable objective. For instance, concerning public desalination plants owned by the CMWU, the amount of desalinated water produced before the 2017 crisis was stable 108.000 cubic meters per month. After the crisis, it decreased to 49.000 cubic meters per month, translating to a drop of 55% in water production. Wastewater treatment plants were also seriously affected by the shortages in electricity, resulting in a significant increase in the average level of Biological Oxygen Demand (BOD), which measures the quality of treated wastewater. The level of BOD sharply increased throughout 2019, reflecting the decrease in wastewater plants' effectiveness and quality of production. While being at a level of 199 mg/L in January 2007, it reached 300 mg/L in June – noting that the maximum BOD level allowed by the WHO is 60 mg/L. The deterioration of wastewater treatment plants' operation immediately led to an increase in seawater contamination. From May to July, the share of contaminated areas of Gazan coastline increased from 48% to 73%.

The electricity crisis, needless to say, also resulted in a significant decrease in the share of water per day/capita received by Palestinians living in Gaza. While the WHO recommends 100 litres per capita per day (L/C/D), the average L/C/D received by a household in Gaza before the electricity crisis amounted to 84 L/C/D. It decreased to 53 L/C/D after the crisis, which means a reduction of 37% of an already deficient amount. The governorates of Rafah and Khan Yunis, which respectively received 40 and 43 L/C/D after the crisis, were the most affected by electricity cuts. Similarly, this electricity crisis has had a significant impact on the water expenditures by Gaza citizens, since people had to compensate water shortages by purchasing water via private suppliers through water trucking. The cost of purchasing water multiplied by more than eleven times.<sup>43</sup>

## Violation of Palestinians' right to rely on their natural gas resources

Although the PA regularly uses Gaza's energy dependency as a political pressuring tool against Hamas, the entirety of the oPt is dependent on energy imports, with Israel supplying around 88% of Palestinian consumption.<sup>44</sup> The West Bank purchases almost all of its electricity from Israel, and it has regularly been victim of punitive electricity cuts.<sup>45</sup> Similarly, Israel is also West Bank's only fuel supplier. Thus, in the words of Tareq Baconi, the entire "Palestinian energy security is pinned to Israel's goodwill."<sup>46</sup> Lately, the PA appears to be willing to take action towards less economic dependence on Israel, implying a reduced dependence on Israel's fuel and electricity thanks to the

41 Middle East Monitor, "Egyptian power lines to Gaza down", April 25, 2017. <https://www.middleeastmonitor.com/20170425-egyptian-power-lines-to-gaza-down/>.

42 All the following data come from the WASH Cluster report: *Consequences of Electricity Crisis on WASH in Gaza Strip*.

43 WASH Cluster, *Consequences of Electricity Crisis on WASH in Gaza Strip*, 9.

44 World Bank, "Electricity Non-Payment and Arrears Destabilize the Palestinian Economy", April 8, 2015. <https://www.worldbank.org/en/news/press-release/2015/04/08/electricity-non-payment-and-arrears-destabilize-the-palestinian-economy>.

45 Shlomi Eldar, "Will Israel's power cuts leave West Bank towns in the dark?", Al Monitor, April 7, 2016. <https://www.al-monitor.com/pulse/en/originals/2016/04/electricity-outage-west-bank-hebron-ramallah-taxes.html>.

46 Tareq Baconi, "How Israel Uses Gas to Enforce Palestinian Dependency and Promote Normalization", Al Shabaka, March 12, 2017. <https://al-shabaka.org/briefs/israel-uses-gas-enforce-palestinian-dependency-promote-normalization/>.

expansion of PA's energy supply options.<sup>47</sup> In May, for instance, the PA signed an agreement with Jordan, stating that the latter will increase its electricity exports towards the oPt.<sup>48</sup> Yet, Palestinians also possess large gas resources located in their coastal waters. However, while effectively becoming a net gas supplier thanks to the discoveries of the Tamar and Leviathan gas fields in 2009 and 2010, Israel has been preventing Palestinian authorities from developing these gas fields, through several commercial, political and military strategies.

Two gas discoveries took place in Palestinian waters<sup>49</sup> from the very end of the 20<sup>th</sup> century. In 1999, the British Gas Group (BG) discovered the Gaza Marine field, which is located within the contiguous zone attached to Palestinian territorial waters, 17 to 21 nautical miles (nm) from the Gaza coast and 36 km West from Gaza city. In November 1999, together with Consolidated Contractors Limited (CCL) and the Palestine Investment Fund (PIF), BG entered into an agreement with the PA for the development and the commercialization of Gaza Marine.<sup>50</sup> BG Group was granted a contract of 25 years for the field's exploration and production, and after receiving the security authorization from the Israeli Prime minister Ehud Barak, it drilled the two first wells in July and November 2000. The reserves that were found both in Marine-1 and Marine-2 were estimated at 1,4 trillion cubic feet (tfc).<sup>51</sup> However, though considered as economically viable, the Marine fields have not been explored yet and the foreign groups in charge of their development appear to have renounced their engagements after twenty years of commercial and political obstacles. Royal Dutch Shell, which took over BG Group in 2016 and consequently acquired 55% of the Marine fields' development rights<sup>52</sup>, pulled out in March 2018 but still did not manage to find a buyer.<sup>53</sup> The Border field is a smaller gas field that straddles the international boundary separating Gazan territorial waters from Israeli territorial waters. It is located in Palestinian territorial waters but it is part of a geologically contiguous gas structure shared by Israel and the oPt.<sup>54</sup> This gas structure includes Israel's Noa field (Noa North and Noa South wells) that was discovered in 1999 by the American group Noble Energy, and the Border field, which is an extension of the Noa South field. While the Israeli Palestinian Interim Agreement (1995) requires "Israel and the Palestinian side agree to cooperate concerning production of oil and gas in cases of joint geological structures",<sup>55</sup> a report published in 2017 by SOMO has shown that Noble Energy had unilaterally and illegally extracted gas from the Noa/Noa South gas field – knowing that Noble Energy and its partners have been selling gas from Noa North well to the IEC since 2012.<sup>56</sup> The report states that this extraction would have been carried out knowing that "it could lead to draining gas from the Palestinian Border Field". Meanwhile the Border field remains completely undeveloped.

47 Jack Khoury, "Palestinian Authority to 'Take Practical Steps' to Reduce Dependency on Israeli Economy, Minister Says", *Al Haaretz*, July 3, 2019. <https://www.haaretz.com/israel-news/palestinian-authority-to-reduce-dependency-on-israeli-economy-minister-says-1.7436061>.

48 Ramallah News, "Faleštīn tūaq' itfāqīā' li-ziyāda' nisba' al-kahrabā' al-mustaūrada' min al-urdun" [Palestine enters into an agreement to increase the electricity percentage imported from Jordan], April 26, 2019.

49 As mentioned above, the PA's maritime jurisdiction is up to 20 nautical miles from the coast according to the Gaza-Jericho agreement (1994, Annex I, Article XI) that followed the Oslo I Accord.

50 Anaïs Antreasyan, "Gas Finds in the Eastern Mediterranean: Gaza, Israel, and Other Conflicts", *Journal of Palestine Studies* 42, No. 3, Spring 2013: 29-47.

51 Susan Power, *Annexing Energy: Exploiting and Preventing the Development of Oil and Gas in the Occupied Palestinian Territory*, (Ramallah: Al Haq, August 2015, 29).

52 Alongside with the Palestinian Investment Fund and Consolidated Contractors Company that own 17,5% and 27,5% respectively.

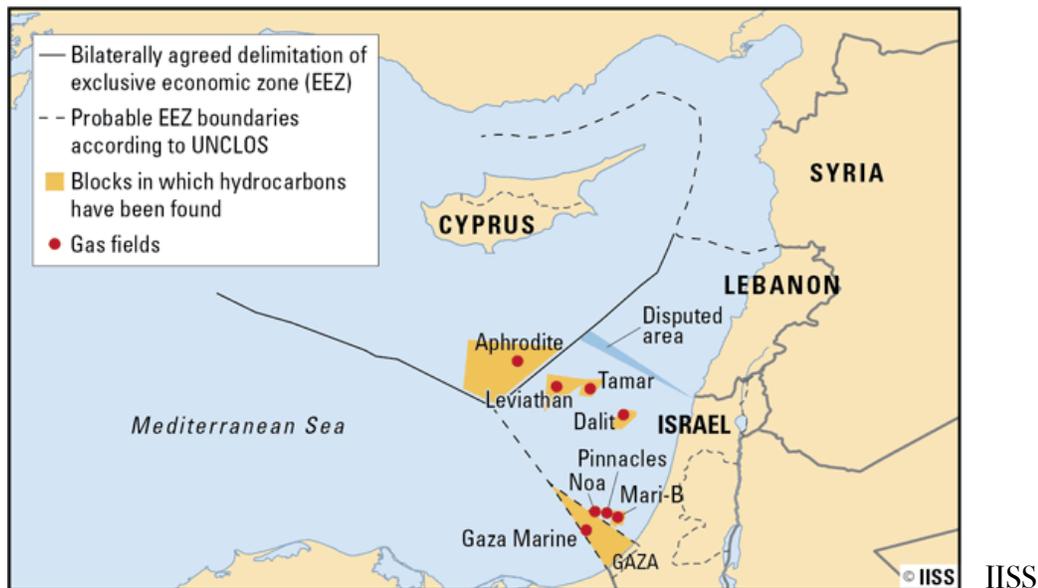
53 Al-Jazeera, "PA: Shell pulls out of Gaza's gas field", March 6, 2018. <https://www.aljazeera.com/news/2018/03/pa-shell-pulls-gaza-gas-field-180306124715796.html>.

54 Susan Power, *Annexing Energy: Exploiting and Preventing the Development of Oil and Gas in the Occupied Palestinian Territory*, 13.

55 The Israeli- Palestinian Interim Agreement, Article 15(4)(b), Annex III, September 28, 1995.

56 SOMO, *Beneath troubled waters: Noble Energy exploitation of natural gas in the Eastern Mediterranean Sea*, (Amsterdam: SOMO, May 2017).

The development of Gaza Marine and the Border field has repeatedly been blocked from the Israeli side. Concerning the Marine field, which holds a much bigger gas reserve than the Border field, the initial objective was to find an export market in addition to the domestic Palestinian market, in order to ensure the viability of the gas field



exploration and production. The cost of exploration is set at an approximate \$800 million.<sup>57</sup>

The first possibility considered was to pipe the gas to El Arish in Egypt, where it would then be exported to other international markets such as Japan and South Korea. However, as Israel kept refusing to give its political and security clearance since 2000 in order to secure commercially favourable terms for the gas produced, selling the gas from the Gaza Marine to the Israeli market became the main option considered. But again, though the PA approved the plan in 2002, Israel blocked all the attempts made by BG to conclude a gas export agreement, mainly by insisting to purchase the gas below the market value. Thus, as explained by Victor Kattan, “Israel wanted to negotiate a contract whereby it would only pay \$2 per cubic foot rather than the market price of \$5 to \$7” and the developers were “faced with ultimatum amounting to blackmail: either agree to sell the gas to Israel at below market price or don’t sell it at all.”<sup>58</sup> After successive failures in negotiating the gas field’s exploration and production, BG withdrew from the negotiations with Israel and Egypt in 2007 and subsequently closed its office in Israel in 2008.<sup>59</sup> The last round of negotiations took place in 2011-2012 and involved Israel, the PA and the Office of the Quartet (OQ). Once again, the negotiations failed, despite Israel’s dire need to diversify its sources of energy supply at that time.<sup>60</sup> Today Israel keeps blocking the development of the Marine field, regardless of the country having become a net gas exporter thanks to the discoveries of the Leviathan and Tamar gas fields. Thus, as stated by Kattan, “one can only conclude that Israel continues to block the development of the gas fields as part of its blockade against the Gaza Strip.”<sup>61</sup>

Besides blocking negotiations, **Israel prevents Palestinians from accessing their gas resources by imposing a maritime blockade.** Within the Oslo accords and the 1994 Gaza-Jericho agreement the PA’s maritime jurisdiction

57 Victor Kattan, “The Gas Fields off Gaza: a Gift or a Curse?”, Al-Shabaka, April 24, 2012. <https://al-shabaka.org/briefs/gas-fields-gaza-gift-or-curse/>.

58 Ibid.

59 Susan Power, *Annexing Energy: Exploiting and Preventing the Development of Oil and Gas in the Occupied Palestinian Territory*, 29.

60 Anaïs Antreasyan, “Gas Finds in the Eastern Mediterranean: Gaza, Israel, and Other Conflicts”, 34.

61 Victor Kattan, “The Gas Fields off Gaza: a Gift or a Curse?”.

over its waters goes up to 20 nm for fishing, recreational and economic activities.<sup>62</sup> Nevertheless, it formally allows Israel to forbid maritime traffic in this zone for “security reasons”, which has enabled Israel to reduce this maritime zone from 20 nm to 12 nm in 2002, 6 nm in 2006 when Hamas won the elections in Gaza, and again to 3 nm in 2008 during the Operation Cast Lead against Gaza. This corresponds to the official beginning of the Israeli naval blockade, from which “the Israeli navy controls all maritime routes, and over the years has killed a number of Palestinian fishermen who strayed beyond the 3 mile limit.”<sup>63</sup> According to Susan Power, Head of Legal Consultancy and Advocacy at the Ramallah-based NGO Al Haq, the naval blockade is more related to Israel’s willingness to protect and secure its gas platforms, export pipelines and more generally its economic interests than to any military or security considerations.<sup>64</sup>

In effect, **the naval blockade progressively extended from the discovery of the Mari-B field in 2000.** This gas field, which is located 243 meters below the seabed contiguously to the Palestinian territory, is now depleted and used as an important storage facility for Israeli gas.<sup>65</sup> Since this discovery, “Israel’s navy has forcibly restricted Palestinian access to Gaza’s maritime space to a 6 nm limit from the 20 nm agreed under the Oslo Accords. In essence, Israel has created a 7 nm illegal security zone around Noble Energy’s Mari-B gas field.”<sup>66</sup> Additionally, the naval closures aims at securing the El-Arish gas pipeline, which goes across the oPt’s maritime space, from Ashkelon in Israel to El-Arish in Egypt, and which resulted from an agreement signed in 2005 between Israel and the Egyptian company East Mediterranean Gas (EMG). It is worth mentioning here that the PA was excluded from this agreement, though an inclusion would be required by the Oslo Accords.<sup>67</sup> In February 2008, operational trials of gas had started between Egypt and Israel through the El-Arish pipeline. Consequently, in August 2008, Israel imposed major maritime restrictions on Palestinian waters. In December 2008 it invaded the Gaza Strip, “using the operation as a pretext for the imposition of a naval blockade on the entire Gaza maritime zone”,<sup>68</sup> although the latter directly aimed at securing a pipeline carrying gas to the Israeli market. **The naval blockade thus directly enables Israel to ensure that Palestinian gas resources, in the Marine and the Border fields, remain undeveloped.**<sup>69</sup>

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62 Annex I, article XI.

63 Anaïs Antreasyan, “Gas Finds in the Eastern Mediterranean: Gaza, Israel, and Other Conflicts”, 35.

64 Interview with Susan Power, June 21, 2019.

65 Susan Power, *Annexing Energy: Exploiting and Preventing the Development of Oil and Gas in the Occupied Palestinian Territory*, 50.

66 Ibid.

67 Susan Power, *Annexing Energy: Exploiting and Preventing the Development of Oil and Gas in the Occupied Palestinian Territory*, 13.

68 Ibid., 54.

69 Ibid., 13.

## PART II - EU AND EUMS POLICY: FUNDING INEFFECTIVE INFRASTRUCTURES AND SUPPORTING THE BLOCKADE OF THE GAZA STRIP

Part II analyses how EU and EU member states (EUMS) policies towards the WASH crisis in the Gaza Strip have proved to be largely ineffective due to permanent electricity shortage. An analysis of said policies also reveals the incapacity or unwillingness of international donors to devise crisis resolution scenarios that go beyond the structural constraints of the occupation. Moreover, some European policies, such as the EastMed pipeline project, encourage and participate in perpetuating the Israeli naval blockade of the Gaza Strip.

### Ineffective water facilities conceived within the context of occupation

Since 2006, €149 million have been mobilized by the European Commission to develop energy, water and sanitation services and infrastructures in the oPt.<sup>70</sup> In the Gaza Strip, the EU and EUMS have recently funded three types of WASH and WASH-related infrastructures: wastewater treatment plants, energy facilities to power water infrastructures, and desalination plants.

Out of three new wastewater treatment plants that are under construction in Gaza to gradually replace four pre-existing defective plants, two were partially funded by the EU and EUMS.<sup>71</sup> The first one, the North Gaza Emergency Sewage Treatment (NGEST), whose construction was launched in March 2018, is located in the northern part of the Strip and was conjointly funded by the World Bank, the European Commission and several EU member states such as France, Belgium and Sweden. Its construction now being completed, it should soon serve around 400.000 Gazans. The second plant is located in the middle area of the Strip, close to Gaza City. It was exclusively funded by Germany, through the KfW Development Bank.

A photovoltaic solar field was also recently constructed to supply additional electricity to the Southern Gaza Desalination Plant (SGDP), one of the 49 brackish water desalination plants that belong to the CMWU. Thanks to this new source of energy, the desalination plant should reach a capacity of 20 million m<sup>3</sup> per day and then be able to deliver water to 250.000 citizens by 2020. So far, this Short Term Low Volume (STLV) plant, funded by the EU and implemented by UNICEF, could only provide safe freshwater to 75.000 inhabitants in Southern Gaza, with a capacity of 600.000 m<sup>3</sup> per day.

Finally, the main WASH infrastructure project involving European funds in Gaza is the construction of the Gaza Central Desalination Plant (GCDP), which will be completed by 2022. Promoted as the “biggest ever infrastructure project in the Gaza Strip”,<sup>72</sup> it aims at a final capacity of 110 million cubic meters of water per year, and also includes the construction of a North-South water carrier, to transport desalinated water throughout the entirety of Gazan territory. According to Monther Shublaq, General Director of the CMWU, the EU and the Islamic Development

70 European Commission, “Water for Gaza: EU switches on the biggest solar energy field in the Gaza strip to fuel projects providing drinking water to people in dire needs”, August 2, 2018. [https://europa.eu/rapid/press-release\\_IP-18-4769\\_en.htm](https://europa.eu/rapid/press-release_IP-18-4769_en.htm).

71 Interview with Mahmood Shatat, April 9, 2019.

72 European Commission, “Water for Gaza: EU switches on the biggest solar energy field in the Gaza strip to fuel projects providing drinking water to people in dire needs”.

Bank (IsDB) ensured the vast majority of the funding for this important project.<sup>73</sup> To be precise, to cover the total cost of €562 million, the EU pledged €77 million, France €10 million, and the IsDB €281 million. However, as for now, these funds are not secured and the construction of the plant cannot be launched yet.

According to the project description, the plant will be powered by several sources of energy: one on-site fossil plant, solar panels installed on the roofs of buildings, off-site solar panel plants, and two wind turbines – meaning that renewable energy should cover up to 15% of energy demand. Until these renewable energy sources are developed, an on-site fossil plant will preliminarily ensure 100% coverage for operations. Furthermore, the plant will be equipped with a digester system – a technology that produces digester gas from the decomposition of wastewater sludge, which can be used as an energy source.<sup>74</sup>

Despite the fact that these infrastructures and construction projects look promising at first sight, further research on

**Local actors affirm that the operation of wastewater treatment plants and desalination plants are systematically limited because of electricity shortage.**

their current energy supply chain reveals how limited and unreliable their implementation is on the ground. Local actors affirm that the operation of wastewater treatment plants and desalination plants are systematically limited because of electricity shortage, and that this will

also apply to the GCDP.<sup>75</sup> When it comes to the SGDP, for instance, while the construction of the photovoltaic field might improve its operation, it is so far quite inefficient due to unreliable electricity supplies to power it. Precisely, power shortages as of mid- 2018 have limited the plant's operation to only seven hours per day, amounting to 15% of its capacity. A similar metric will arguably apply to the GCDP, as long as its power supply is not fully self-provided – an objective that even in the best case scenario of development is not attainable (note that current plans aim to replace 15% of supply with on-site renewables). It is worth having a look at the 2018 Final Donor Handbook delivered by the Palestinian Water Authority (PWA),<sup>76</sup> which provides further details about the sources that will supply the on-site fossil power plant. During the two first years of operation, the power supply will be covered by reciprocating engines fired with diesel fuel. Afterwards, a new grid connection from Israel will cover the supply. The reciprocating engines will be maintained as a “back up” but they will be switched from diesel fuel to natural gas firing. If the connection to the electrical grid turns out to be unavailable, the plant will be fully powered by natural gas, which would directly come from Israel as part of the Gas for Gaza (G4G) project. In addition to the simple fact that diesel fuel is not a sustainable supply solution due to its high cost and the risk of frequent shortages, **these different energy supply options maintain the Gaza Strip in a relationship of energy dependency with Israel, which immediately makes the infrastructure's operation unreliable.** They reveal to what extent these development and infrastructural projects fail to overcome the remit of occupation and participate in perpetuating the status quo. Indeed, the main planned option to power the GCDP is to connect it to the Israeli electricity grid; the second option is to supply the plant with natural gas coming from Israel through a gas pipeline, as part of the G4G initiative. This latter directly serves the interests of the Israeli State. Launched by the Office of the Quartet (OQ)<sup>77</sup> in 2014 – the EU became an official partner in 2018 – it aims to connect Gaza to a natural gas pipeline from Israel. Since “the availability of reliable and cost-efficient natural gas in Gaza will allow the Gaza Power Plant to be converted to gas operations, facilitating a significant increase in domestic generation, and reduced dependence on electricity imports”,<sup>78</sup> the

73 Interview with Monther Shublaq, April 9, 2019.

74 Ibid.

75 Interview with Mahmood Shatat, April 9, 2019.

76 Palestinian Water Authority, *Gaza Central Desalination Plant and Associated Works Program: Donor Information Handbook*. [https://ufmsecretariat.org/wp-content/uploads/2018/03/Final-Donor-Handbook\\_-21-Feb-2018-3.pdf](https://ufmsecretariat.org/wp-content/uploads/2018/03/Final-Donor-Handbook_-21-Feb-2018-3.pdf).

77 The Quartet was established in 2002 and comprises the United Nations, the United States, the European Union and Russia.

78 Website of the OQ: <http://www.quartetoffice.org/page.php?id=5e1e7ay6168186Y5e1e7a>.

initiative is promoted as the only long-term solution to the existing energy crisis. According to Ariel Ezrahi, the OQ Director of Energy, this natural gas supply will be enough to fully satisfy Gaza's needs in energy. To him the Israeli government, which announced its support to the project in 2015, understood the importance for the Gaza Strip to find a reliable energy supply source within a broader context of water and sanitation crisis.<sup>79</sup>

**In short, the EU and EUMS fund WASH infrastructures which are operating ineffectively, due to final reliance on Israel's energy supply, and Israel's readiness to weaponize their position of supplier for political purposes.** Thus, it is short-sighted to continue investing in WASH infrastructure, when the core problem inhibiting the operation of existing infrastructure is energy supply and dependency. The EU and EUMS effectively address the situation within a depoliticized perspective that refuses to call into question Gaza's energy dependency on Israel, and thus refuses to engage with the core problem of the WASH crisis.

## European complicity with the Israeli naval blockade of the Gaza Strip

In addition to the ineffectiveness of current policy on the WASH crisis, the EU and several EUMS are directly complicit with the naval blockade imposed on the Gaza Strip by Israel, and thus not only ignore the core problem of the crisis (i.e., energy dependency), but also perpetuate the very existence of said problem. In 2017 the EU and Israel entered in an agreement to develop a 2200 kilometre-long undersea gas pipeline to transport Israeli gas to Greece and Italy, from where it would then be transported to the rest of Europe.<sup>80</sup> This project called the EastMed pipeline, was assessed by the European Commission as a "project of common interest" (PCI), which refers to EU cross border infrastructure projects linking the energy systems of EUMS.<sup>81</sup> The pipeline falls under European general objective to diversify their energy supply sources, i.e. finding alternatives to Russian gas.<sup>82</sup> From the Israeli side, Europe represents a secure long-term buyer to export gas from the Leviathan field. Furthermore, the gas project brings Israel closer to the EU, and increases its leverage in future trade negotiations. (Baconi, for example, claims that "Israel sees



<sup>79</sup> Interview with Ariel Ezrahi, April 16, 2019.

<sup>80</sup> Ahmad Nafeez, "Pillaging Palestine's gas? EU in danger of complicity in resource grab", May 12, 2017. <https://www.middleeasteye.net/opinion/pillaging-palestines-gas-eu-danger-complicity-resource-grab>.

<sup>81</sup> PCI 7.3.1 adopted under Reg. 347/2013 on guidelines for trans-European energy infrastructure.

<sup>82</sup> Interview with Tareq Baconi, April 21, 2019.

the possibility of European reliance on its exports as a development that could mitigate the threat of closer scrutiny in future trade agreements.”<sup>83</sup>)

The EastMed pipeline, whose realization remains uncertain,<sup>84</sup> violates international law and causes the EU to contradict its commitment to Human Rights and international law. Although the EU argues that the EastMed pipeline would not involve any pillaged Palestinian natural resources (since the gas would theoretically hail exclusively from the Leviathan field), any Israeli gas infrastructure is connected to the storage facility Mari-B.<sup>85</sup> As explained above, this storage facility, which is an integral part of any Israeli gas export plan and which is surrounded by a 7 nm illegal security zone, is one of the main reasons behind the maintenance of the naval blockade on Gaza, which prevents Palestinians from accessing their own natural resources and which implies regular lethal attacks on Gaza fishermen by the Israeli navy.

Through the EastMed pipeline, **the EU would benefit from a gas distribution network that relies on the Israeli-imposed naval blockade, which denies Palestinians’ right to exploit their natural resources.** This denial of Palestine’s permanent sovereignty over natural resources should constitute a major concern for the Union, bound to observe the UN position that is clear on the issue. The right to self-determination of the Palestinians, and their right over the exploitation of natural resources, is systematically object of UNGA resolutions.<sup>86</sup> By upholding the project, the Union would thus not only contradict existing UN resolutions, but also contradict its founding principles since the right to self-determination - as defined in Art. 1 of the UN Charter - was incorporated in the Union’s legal order as jurisprudential principle.<sup>87</sup>

Besides its illegality regarding international law, the 12-year Israeli blockade of the Gaza Strip has dramatic consequences on the lives and the rights of Gazan people. Hence, by participating to its perpetuation, the EU directly violates its own claimed principles upon which it is founded, whereas it had engaged itself to promote and respect these values in its own external policies. As it is stated in Article 21 of the Treaty on European Union, “the Union’s action on the international scene shall be guided by the principles which have inspired its own creation (...): democracy, the rule of law, the universality and indivisibility of human rights and fundamental freedoms, respect for human dignity, the principles of equality and solidarity.”<sup>88</sup> In a 2010 report on the interception of a humanitarian aid flotilla by Israeli forces, which led to the killing of 9 people, the UN Human Rights Council qualified the blockade as a “collective punishment of the civilian population of Gaza [that] is not lawful in any circumstance.”<sup>89</sup> Every year, the blockade results in lethal attacks on Palestinian fishermen. In 2012, al-Haq has reported 50 attacks and arrests,

83 Tareq Baconi, “Pipelines and Pipedreams: How the EU can support a regional gas hub in the Eastern Mediterranean”, European Council on Foreign Relations, April 21, 2017. [https://www.ecfr.eu/publications/summary/pipelines\\_and\\_pipedreams\\_how\\_the\\_eu\\_can\\_support\\_a\\_regional\\_gas\\_hub\\_in\\_7276](https://www.ecfr.eu/publications/summary/pipelines_and_pipedreams_how_the_eu_can_support_a_regional_gas_hub_in_7276)

84 Ibid. Baconi explains that commercial and technical issues hinder the construction of the pipeline. Mainly, the high level of capital investment might prevent the gas from being competitive in the international market.

85 Interview with Susan Power, June 21, 2019.

86 For the resolutions of the UNGA, see for instance: General Assembly Resolution, “Permanent Sovereignty Over Natural Resources in OPT and Golan” (A/RES/73/255), December 20, 2018; General Assembly Resolution, “Right of the Palestinian People to Self-determination” (A/RES/73/158), December 17, 2018. For the resolutions of the EU: European Parliament resolution of 29 September 2011 on the situation in Palestine; European Parliament resolution of 17 December 2014 on recognition of Palestine statehood (2014/2964(RSP)).

87 European Court of Justice, Council of the European Union v. Front Polisario, case C-104/16 P, § 88, December 21, 2016.

88 TEU, December 2007. For a more developed perspective on fundamental rights in the EU’s foreign policy, see: Sine Qua Non, “Sine Qua Non’s values or the Union’s values, their protection and enforcement on the international arena”, (Paris: SQN, August 2019).

89 Human Rights Council, *Report of the international fact-finding mission to investigate violations of international law including international humanitarian and human rights law resulting from the Israeli attacks on the flotilla of ships carrying humanitarian assistance*. September 28, 2010, 53.

including 2 that resulted in deaths. The reduction of Gaza fishing zone deriving from the naval blockade, has serious consequences in terms of food security, with an estimated 40% of households to be severely or moderately food insecure.<sup>90</sup> It also participates to the worsening unemployment, since the fishery sector represents a significant source of employment for Gaza's population, and to a decrease in revenues for the fishermen, who currently support 18.250 other people in the Strip.<sup>91</sup> EU policies effectively relying on the above appear incompatible with the Union's self-imposed obligation to uphold basic Human Rights, such as human dignity and the right to life intended as the right to physical and mental integrity.<sup>92</sup> If the intention of the WASH infrastructural support to Gaza is guided by a will to uphold the human rights of the Palestinians in the Strip intended as the right to physical integrity, then this effort is nullified by the active participation of the EU in the upholding of the blockade through the planned execution of the EuroMed pipeline.

The paper at hand has already largely demonstrated the consequences of denying Palestinians' right to rely on their natural gas resources. Water scarcity, which partly results from the insufficient operation of desalination plants, prevents Palestinians in Gaza from reaching the WHO personal and domestic hygiene standards. Ineffective wastewater treatment plants lead to the contamination of groundwater, seawater and beaches. Public health issues directly result from the latter, while the energy deficit impedes the operation of health facilities and hospitals.<sup>93</sup> A system that effectively relies on the perpetuation of such hygiene deprivation should deserve greater scrutiny, especially regarding its compatibility with Art. 3 of the Charter, recognizing the right to physical and mental integrity.<sup>94</sup> Similarly, the finalization of the EastMed Pipeline project would contradict with the binding objective to promote "a high level of human health protection (...) in the definition and implementation of all Union policies and activities."<sup>95</sup> Lastly, the environmental crisis in Gaza and Israel stemming from the constant overflow of untreated sewage should be tested against the Union's conventional objective to integrate "a high level of environmental protection" in its policies.<sup>96</sup>

A paradox emerges at this stage of the paper and results from European foreign policy's self-contradictions. **The EU and its member states participate in encouraging Israel to maintain the naval blockade on Gaza, which prevents all Palestinians from accessing their natural gas resources, while at the same time funding and spending millions in infrastructures that end up being largely ineffective because of Gaza's energy dependence on Israel.**

## **PART III - POLICY RECOMMENDATIONS: SUPPLYING THE GAZA STRIP WITH PALESTINIAN GAS RESOURCES**

90 United Nations Office for the Coordination of Humanitarian Affairs, *2018 Humanitarian Needs Overview: Occupied Palestinian Territory*.

91 United Nations Office for the Coordination of Humanitarian Affairs, "Gaza fisheries: fishing catch Increases amid ongoing protection concerns", *The Monthly Humanitarian Bulletin*, April 5, 2018. [https://www.ochaopt.org/content/gaza-fisheries-fishing-catch-increases-amid-ongoing-protection-concerns#ftn\\_ref3](https://www.ochaopt.org/content/gaza-fisheries-fishing-catch-increases-amid-ongoing-protection-concerns#ftn_ref3).

92 Chapter I, Charter of Fundamental Rights of the European Union, 2000.

93 World Health Organization, *Situation report: Occupied Palestinian Territory, Gaza*, July 2019. [http://www.emro.who.int/images/stories/palestine/documents/WHO\\_SitRep\\_July\\_2019\\_.pdf?ua=1&ua=1](http://www.emro.who.int/images/stories/palestine/documents/WHO_SitRep_July_2019_.pdf?ua=1&ua=1).

94 Chapter I, Art. 3, Charter of Fundamental Rights of the European Union, 2000.

95 Chapter IV, Art. 35, Charter of Fundamental Rights of the European Union, 2000.

96 Chapter IV, Art. 37, Charter of Fundamental Rights of the European Union, 2000.

As shown above, present EU foreign policy concerning Gaza's WASH crisis is self-contradictory and ineffective at best, and in violation of UN resolutions, international law, and EU principles at worst. Therefore, Part III examines the possibility for the EU to reshape its policy based on its proclaimed values, and guided by policy effectiveness. In short, it will be argued that the EU should use its political leverage to work towards connecting Gaza to the Gaza Marine field, which could enable whole oPt to reach energy self-sufficiency.

## Connecting Gaza with natural gas infrastructures for a cheaper and reliable electricity production

The EU and EUMS, when it comes to any foreign policy in the Gaza Strip, should abandon a language that is limited to humanitarian aid and technical assistance under the structure of occupation. Both from a humanitarian perspective, and under conditions of efficient use of tax payer money, it is not coherent to maintain Gaza's energy dependence on Israel when a solution aiming at self-sufficiency would be more cost-effective and structurally reliable. Far from leaving politics aside, current engagement of the EU and EUMS in the WASH crisis and connected dynamics appear to be "overtly politicized, just not in favour of the Palestinians."<sup>97</sup> In order to be truthful to its commitments outlined in the Action Plan, the EU should exert its economic and diplomatic power to pressure Israel to let Palestinians exploit the Gaza Marine gas fields.

Besides being close to shore and technically simpler to exploit than Tamar and Leviathan,<sup>98</sup> the Marine fields have been deemed as economically feasible (in 2000 and 2002), with an investment cost for their development estimated between \$250 and 1200 million.<sup>99</sup> The reserves of the two wells are estimated to be 1,4 tfc, which could be sufficient to meet Palestinian needs for the next 25 years.<sup>100</sup> As Anaïs Antreasyan puts it, "the estimated reserves of the Gaza fields are modest compared to others, but from the perspective of a West Bank PA teetering on the brink of bankruptcy, and an impoverished Gaza suffering constant cuts in gas supplies and rising prices dictated by Israeli middlemen and transaction costs, the reserves are huge."<sup>101</sup>

Natural gas from Gaza Marine, which could potentially be transported through existing Israeli infrastructures located north of the Gaza Strip in Ashkelon, could be used to generate electricity both in Gaza and in the West Bank, where a large proportion of energy demand remains unmet.<sup>102</sup> Besides fuelling GPP with natural gas instead of diesel gas, which will considerably reduce the cost of electricity generation, as well as reliably powering Gaza desalination and wastewater treatment plants, the 2012 report of the Palestine Investment Fund estimates between \$2500-7000 million in direct revenues. It would also save the PA around \$560 million a year in terms of energy costs.<sup>103</sup> Supplying electricity to the West Bank and the Gaza Strip via Gaza Marine offshore field appears as a way to take action against Gaza's isolation, through the development of a more unified Palestinian energy system. Cooperation between the

97 Ramona Wadi, "Humanitarian Aid is Overtly Politicized, Just Not in Favor of the Palestinians", The Palestine Chronicle, December 21, 2018. <http://www.palestinechronicle.com/humanitarian-aid-is-overtly-politicized-just-not-in-favor-of-the-palestinians/>.

98 Tim Boersma, Natan Sachs, "Gaza Marine: Natural Gas Extraction in Tumultuous Times?", Washington: Foreign Policy at Brookings, February 2015, 2.

99 Sara Badiei, Vivien Foster, Roger Coma-Cunill, *Securing Energy for Development in the West Bank and Gaza*, (Washington DC: World Bank Group, June 30, 2017).

100 Interview with Susan Power, June 21, 2019.

101 Anaïs Antreasyan, "Gas Finds in the Eastern Mediterranean: Gaza, Israel, and Other Conflicts", 43.

102 Tim Boersma, Tim, Natan Sachs, "Gaza Marine: Natural Gas Extraction in Tumultuous Times?", 9.

103 Simon Henderson, "Natural Gas in the Palestinian Authority: The Potential of the Gaza Marine Offshore Field", Washington: The German Marshall Fund of the United States, March 2014, 9.

PA and Hamas would also be fostered, as it is safe to assume that Hamas authorities know that in the current state of affairs, no international firm would accept to deal with them, and would consequently have to accept that the PA manages the modalities of the gas production.<sup>104</sup> For the PA, on the other hand, the exploitation of the Gaza Marine represents an energy supply alternative that would benefit Palestinian economy as a whole and directly serve the PA's ambition to move towards less economic dependence on Israel. It would of course require continuous diplomatic mediation by outside actors like the EU to help coordinate this relationship.

In addition, Palestinians would not be the only beneficiaries from the development of an independent source of energy supply. Providing Palestinians with their own natural gas supply would be economically beneficial to the EU and EUMS too since it would reduce Palestinians' need for international assistance, which includes EU aid that overall amounts up to \$6 billion since 1993.<sup>105</sup> It would also bring several advantages to Israel. Most importantly, production from the Gaza Marine fields does not threaten Israel's future energy security, since Leviathan and Tamar's gas reserves contain enough gas to supply the Israeli State for decades.<sup>106</sup> It would also reduce the share of Israel's own natural gas consumed to generate electricity for the Palestinians, who would have their independent energy capacity. Moreover, as explained by Tim Boersma and Natan Sachs, "Israel's gas network suffers from a pressure imbalance, with an especially weak point at Mishor Rotem in the southern part of the network (...) Additional supply in the southern part of the network could thus save Israel considerable investment in infrastructure needed to divert gas southward and balance the network."<sup>107</sup> Finally, **Israeli coast is also affected by untreated sewage that flows into the Mediterranean Sea, due to the ineffective operation of Gaza wastewater treatment plants.** It also affects Israel's groundwater, southeast of Ashkelon, and desalination plants, making the issue a "national security" problem, following a recent Israeli report published in June 2019.<sup>108</sup> According to the report's authors themselves – who completely ignore the possibility of any Israeli responsibility in the present situation – "without urgent, vigorous action, plagues and infections will break out that could cost a great many lives, both in Israel and in Gaza, and no fence or Iron Dome can thwart them". All these different reasons can be put forward by the EU in its diplomatic efforts to encourage Israel to let Palestinians develop their natural gas fields off the Gazan coast.

**In conclusion, to uphold its proclaimed values and to design policies based on the principle of effectiveness, the EU should:**

- Exerting economic and diplomatic pressure on the Israeli government to authorize the development of the Gaza Marine fields in order for Gaza to move from electricity deficit to energy self-sufficiency.
- Encouraging the PA to take the lead of the field's exploitation and ensuring diplomatic mediation between the latter and Hamas in order to build a Palestinian unified energy system.
- Advocating for this solution to Israel by insisting on the environmental damages that result from Gaza's water and sanitation crisis and that lead to serious public health issues outside of the Gaza Strip, in order for the Israeli government to understand the risks for its own population.

104 Interview with Tareq Baconi, April 21, 2019.

105 Tareq Baconi, "Beyond humanitarian quick-fixes for Gaza", European Council on Foreign Relations.

106 Tim Boersma, Natan Sachs, "Gaza Marine: Natural Gas Extraction in Tumultuous Times?", 2.

107 Ibid., 11.

108 Zafir Rinat, "Collapsing Environmental State of Gaza Poses Threat to Israel's National Security, Report Warns", Haaretz, June 3, 2019. <https://www.haaretz.com/israel-news/premium-environmental-state-of-gaza-poses-threat-to-israel-s-national-security-report-warns-1.7328966>.

## Other policy recommendations

- When funding new WASH infrastructures the EU and EUMS should move away from energy supply scenarios, as with GCDP, which rely on a short-term perspective, ignore the core roots of Gaza's water crisis and perpetuate Gaza energy dependence on Israel. These humanitarian interventions represent a direct waste of public funds since such infrastructures end up being largely ineffective.
- The EU could invest in a floating power plant that would be connected to desalination and wastewater treatment plants to provide them continuous supply of energy. For now, such technology, which can be dually powered by oil and gas, could provide a rapid answer to the power supply crisis faced by the Gaza Strip. It is a technology that has been in use around the world, such as in Lebanon, Sri Lanka, Mozambique and Kenya. However regarding its high cost this option can only be considered as a short-term solution. In 2018 Kawasaki Heavy Industries constructed a floating gas power plant with a cost of \$175 million (around €157 million).
- The EU and EUMS should invest more in hybrid renewable energy systems to supply WASH infrastructures, to reduce their reliance on external sources of energy and partially anticipate shortage of energy supply. Recent studies have shown that solar photovoltaic technologies were the optimum option to generate electricity for WASH facilities.<sup>109</sup> In addition, the EU could fund technologies that generate energy from biomass decomposition and conversion. The latter can be used to supply WASH facilities. Such initiatives financed by the EU are already taken place in the West Bank, to meet the increase in electricity demand.<sup>110</sup> For instance, jointly with the World Bank, the EU funded a project launched by the PA to generate electricity from the gas produced from decomposing biomass in Jenin governorate. The cost of such a project amounted to \$9 million (around €8 million).

109 OXFAM, *Final Report: Comprehensive Study of Renewable Energy Sources in Gaza's WASH Sector for Public and Private WASH Facilities*, Nairobi: OXFAM, May 2019.

110 Interview with Mahmood Shatat, April 9, 2019.

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