



## Northern Gaza Emergency Sewage Treatment (NGEST) Project (P074595)

MIDDLE EAST AND NORTH AFRICA | West Bank and Gaza | Water Global Practice |  
Special Financing | Investment Project Financing | FY 2005 | Seq No: 30 | ARCHIVED on 29-Jun-2018 | ISR32383 |

Implementing Agencies: Belgium, Swedish International Development Cooperation Agency (SIDA), Palestinian Liberation Organization, French Development Agency-Jerusalem, European Union

## Key Dates

## Key Project Dates

Bank Approval Date:07-Sep-2004

Effectiveness Date:17-Nov-2004

Planned Mid Term Review Date:17-Nov-2006

Actual Mid-Term Review Date:29-Nov-2006

Original Closing Date:31-Dec-2017

Revised Closing Date:30-Jun-2018

## Project Development Objectives

Project Development Objective (from Project Appraisal Document)

The project objectives are to: (i) mitigate the immediate gathering health and environmental safety threats to the communities surrounding the effluent lake at BLWTP; and (ii) Provide a satisfactory long-term solution to the treatment of wastewater for the Northern Government in Gaza.

Has the Project Development Objective been changed since Board Approval of the Project Objective?

No

## Components

Name

EFFLUENT TRANSFER:(Cost \$21.46 M)

TECHNICAL ASSISTANCE TO EFFLUENT TRANSFER COMPONENT:(Cost \$3.37 M)

CONSTRUCTION OF TREATMENT PLANT AND RECOVERY WELLS:(Cost \$45.98 M)

TECHNICAL ASSISTANCE TO CONSTRUCTION OF TREATMENT PLANT:(Cost \$3.71 M)

## Overall Ratings

Name	Previous Rating	Current Rating
Progress towards achievement of PDO	● Moderately Satisfactory	● Moderately Satisfactory
Overall Implementation Progress (IP)	● Moderately Satisfactory	● Moderately Unsatisfactory
Overall Risk Rating	● High	● High



## Implementation Status and Key Decisions

The Project will close on June 30, 2018, and progress on the building blocks of the NGEST wastewater management scheme include the following significant results: (i) the construction of the wastewater treatment plant (WWTP) has been completed, and the contractor is now finalizing the commissioning phase; (ii) a minimum number of infiltration basins (2 out of 9) has been rehabilitated, and are now in use, allowing the treated wastewater to be safely infiltrated back into the aquifer; and (iii) planned under NGEST to monitor water quality in the relevant sections of the aquifer, and to serve as a means to extract water, if necessary, 14 recovery wells have been drilled, equipped and commissioned. These 3 critical building blocks are an integral part of the long-term solution to the treatment of wastewater in Northern Gaza.

## Risks

### Systematic Operations Risk-rating Tool

Risk Category	Rating at Approval	Previous Rating	Current Rating
Political and Governance	--	● High	● High
Macroeconomic	--	● High	● High
Sector Strategies and Policies	--	● High	● High
Technical Design of Project or Program	--	● Substantial	● Substantial
Institutional Capacity for Implementation and Sustainability	--	● High	● High
Fiduciary	--	● Substantial	● Substantial
Environment and Social	--	● High	● High
Stakeholders	--	● High	● High
Other	--	● High	● High
Overall	--	● High	● High

## Results

### Project Development Objective Indicators

► Effluent lake is drained and no longer a threat to the surrounding communities at Beit-Lahia WWTP (Yes/No, Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	N	Y	N	N
Date	29-Oct-2004	31-Dec-2017	15-Jun-2018	30-Jun-2018

#### Comments

While some of the investments (referred to as Part A) were concluded in 2010 with the effluent lake at Beit Lahia being evacuated and



dried, delays in the construction of the new WWTP and clogging of the infiltration basins forced the PWA in March 2016 to resort back to using the lake as a temporary measure to control and manage sewage flows until they can be treated at the new site. Once commissioning of the new WWTP is concluded end of June 2018, drainage of the effluent lake will be initiated once again, and completed over the course of the ICR period. This would explain why the value changes from yes to no over the course of project implementation.

► Wastewater collected and treated in accordance with Palestinian environmental standards suitable for groundwater infiltration and reuse (M3/day) (Number, Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	0.00	25,000.00	16,000.00	25,000.00
Date	17-Mar-2014	31-Dec-2017	15-Jun-2018	30-Jun-2018

#### Comments

While effluent quality has yet to be reached (although it is close) during the commissioning phase, it is very likely that it will once the three treatment lines are fully operational, with a flow of 34,000 m<sup>3</sup>/d.

The latest analyses show that the WWTP has already made significant progress in achieving the effluent quality standards as per the operation and maintenance (O&M) contract performance targets. The latest analyses performed in June 2018 during the commissioning period report average concentrations of biochemical oxygen demand (BOD) of 21.3 mg/L (compared with the contractual level of 20 mg/L), a total suspended solids (TSS) concentration of 23.3 mg/L (compared with the contractual level of 20 mg/L) and a total nitrogen (TN) concentration of 55.7 mg/L (compared with the contractual level of 20 mg/L).

It is also important to note that, as per the MoU signed between the PWA and O&M contractor in February 2018, *"during the commissioning period, the contractor will maintain all required testing of inlet and outlet parameters for each process facility and submit the results to the engineer and employer for verification. If, after the process is stable, the tests detect that the plant cannot meet the effluent standard foreseen in the contract, then the employer and the contractor will agree and adapt these effluent parameter to the achieved figures."*

► Less than 5% increase in salinity and nitrate levels at monitoring wells within project site compared to before commissioning the plant (Yes/No, Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	N	Y	N	Y
Date	17-Mar-2014	31-Dec-2017	15-Jun-2018	30-Jun-2018

#### Comments

As per the latest groundwater quality sampling campaign results (up to June 2018), the data point to levels of nitrates between 35 and 90 mg/L. As for salinity, we have, from the same campaign, total dissolved solids (TDS) levels of 1,200-1,600 mg/L and conductivity of 2,000-2,800  $\mu$ S/cm (both used as proxies for salinity). The achievement of this indicator will be assessed once commissioning is completed.



► Establishment of O&M plan, including gradual increases of O&M financing and cost recovery for the NGEST WWTP (Yes/No, Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	N	Y	Y	Y
Date	17-Mar-2014	31-Dec-2017	15-Jun-2018	30-Jun-2018

Comments

The plan received by the Bank includes all of the elements listed in the indicator definition, but its endorsement (and thus long term financing and sustainability) has yet to be confirmed by the PWA. A draft final MoU has been finalized between the stakeholders involved, but it has yet to be signed, due to the recent internal political complications.

In terms of short to medium-term financing, the Palestinian Authority will cover the electricity costs for the next 2 years, and the World Bank will continue to finance, through NGEST (until closing) and a potential budget support operation with the Ministry of Finance, the O&M contract for the full contract period (up to end of February 2020).

► CMWU manages plant so that effluent standards are met at all times (Yes/No, Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	N	Y	N	Y
Date	17-Mar-2014	31-Dec-2017	15-Jun-2018	30-Jun-2018

► Direct project beneficiaries (Number, Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	200,000.00	550,000.00	377,575.00	350,000.00
Date	17-Mar-2014	31-Dec-2017	15-Jun-2018	30-Jun-2018

**Comments**

It is to be noted that there is a mistake with the values entered in the last ISRs for this indicator. As per the restructuring papers since this core indicator was introduced in 2014, the end target is 350,000, and not 550,000.

**Female beneficiaries (Percentage, Custom Supplement)**

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	50.00	50.00	49.10	50.00

**Overall Comments**

See Key Issues for a complete analysis of progress with regards to these indicators.

**Intermediate Results Indicators****EIA, EMP and supplementary ESIA and remedial works studies are completed and their implementation is monitored (Yes/No, Custom)**

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	Y	Y	Y	Y
Date	29-Oct-2004	31-Dec-2017	15-Jun-2018	30-Jun-2018

**North Gaza WWTP with a capacity of 35,000 cubic meters per days is constructed and operational (Yes/No, Custom)**

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	N	Y	Y	Y
Date	29-Oct-2004	31-Dec-2017	15-Jun-2018	30-Jun-2018



► Effluent recovery wells constructed and functional (Yes/No, Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	N	Y	Y	Y
Date	29-Oct-2004	31-Dec-2017	15-Jun-2018	30-Jun-2018

► Volume(mass) of BOD pollution load removed by treatment plant under the project (Tones/year, Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	1,000.00	7,000.00	2,600.00	7,000.00
Date	29-Oct-2004	31-Dec-2017	15-Jun-2018	30-Jun-2018

Comments

With the current effluent quality results and flow being pumped to the WWTP, the associated "tons of BOD removed per year" intermediate indicator has now reached 2,600 tons per year (with a target of 7,000), noting that the flow will continue to increase and that the measured influent BOD is currently lower than the design data. The latter may ultimately lead to the current removal target being difficult to reach. It is estimated that this intermediate indicator could reach up to 5,000 tons per year.

► One and a half million m3 of effluent drained from the lake to the proposed NGWTP site (Yes/No, Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	N	Y	N	Y
Date	29-Sep-2004	31-Dec-2017	15-Jun-2018	30-Jun-2018

Comments

While the effluent lake at Beit Lahia was drained in 2010, delays in the construction of the new WWTP and clogging of the infiltration basins forced the PWA in March 2016 to resort back to using the lake as a temporary measure to control and manage sewage flows until they can be treated at the new site. Once commissioning of the new WWTP is concluded end of June 2018, drainage of the effluent lake will be initiated once again by infiltration, and the total flow being drained will be re-calculated.



► Wastewater pipeline installed (8 km), terminal pump station and infiltration basins are constructed (Yes/No, Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	N	Y	Y	Y
Date	30-Sep-2010	31-Dec-2017	15-Jun-2018	30-Jun-2018

► Operation and maintenance of the infiltration basins are adequately supervised (Yes/No, Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	N	Y	Y	Y
Date	17-Mar-2014	31-Dec-2017	15-Jun-2018	30-Jun-2018

Comments

Two of the 9 infiltration basins are currently being adequately supervised. Rehabilitation of the remaining 7 has yet to start, and discussions are ongoing on its financing between the PWA and other sector donors.

► The NGWWTP is operated and maintained according to industry standards (Yes/No, Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	N	Y	Y	Y
Date	17-Mar-2014	31-Dec-2017	15-Jun-2018	30-Jun-2018

► Effluent lake partially cleaned and leveled (Yes/No, Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	N	Y	N	Y
Date	17-Mar-2014	31-Dec-2017	15-Jun-2018	30-Jun-2018



► Identified packages are tendered and completed satisfactorily in accordance with the project plan (Yes/No, Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	Y	Y	Y	Y
Date	31-Dec-2013	31-Dec-2017	15-Jun-2018	30-Jun-2018

► A construction manager to supervise the NGWWTP civil works is hired and adequately supervises the work (Yes/No, Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	N	Y	Y	Y
Date	17-Mar-2014	31-Dec-2017	15-Jun-2018	30-Jun-2018

► EA, EMP and supplementary ESIA implementation are adequately supervised (Yes/No, Custom)

	Baseline	Actual (Previous)	Actual (Current)	End Target
Value	Y	Y	N	Y
Date	17-Mar-2014	31-Dec-2017	15-Jun-2018	30-Jun-2018

Comments

See "Safeguards-Environmental Assessment" and "Environmental and Social Risk" sub-sections for details.

Overall Comments









## Data on Financial Performance

### Disbursements (by loan)

Project	Loan/Credit/TF	Status	Currency	Original	Revised	Cancelled	Disbursed	Undisbursed	Disbursed
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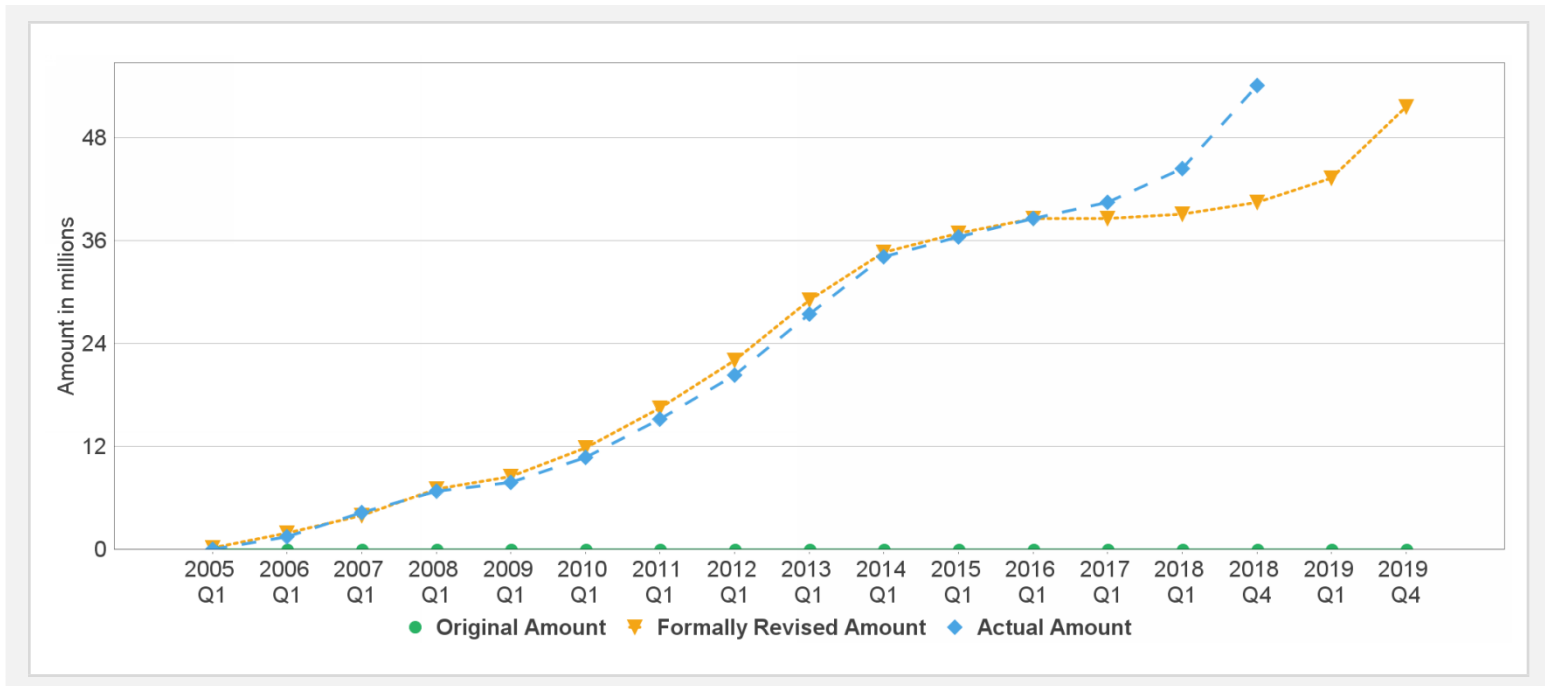


P074595	TF-16501	Effective	USD	5.00	5.00	0.00	5.00	0.00		100%
P074595	TF-16844	Effective	USD	3.00	3.00	0.00	2.61	0.39		87%
P074595	TF-54208	Closed	USD	7.80	7.80	0.00	7.80	0.00		100%
P074595	TF-56186	Closed	USD	6.85	6.85	0.00	6.42	0.00		100%
P074595	TF-57109	Closed	USD	7.06	7.05	0.01	7.49	0.00		100%
P074595	TF-57595	Closed	USD	6.53	6.53	0.00	7.68	0.00		100%
P074595	TF-92196	Effective	USD	12.00	12.00	0.00	10.07	1.93		84%
P074595	TF-97081	Closed	USD	7.00	7.00	0.00	7.00	0.00		100%

**Key Dates (by loan)**

Project	Loan/Credit/TF	Status	Approval Date	Signing Date	Effectiveness Date	Orig. Closing Date	Rev. Closing Date
P074595	TF-16501	Effective	08-May-2014	08-May-2014	18-Nov-2014	31-Dec-2017	30-Jun-2018
P074595	TF-16844	Effective	17-Jun-2014	17-Jun-2014	01-Oct-2014	31-Dec-2017	30-Jun-2018
P074595	TF-54208	Closed	27-Oct-2004	27-Oct-2004	17-Nov-2004	30-Jun-2010	30-Jun-2014
P074595	TF-56186	Closed	18-Jan-2006	18-Jan-2006	18-Jan-2006	31-Dec-2009	31-Dec-2013
P074595	TF-57109	Closed	02-Oct-2006	02-Oct-2006	02-Oct-2006	31-Dec-2013	31-Dec-2017
P074595	TF-57595	Closed	07-Dec-2006	07-Dec-2006	07-Dec-2006	31-Dec-2009	31-Aug-2015
P074595	TF-92196	Effective	30-Jun-2008	30-Jun-2008	30-Jun-2008	30-Jun-2012	30-Jun-2018
P074595	TF-97081	Closed	25-Oct-2010	25-Oct-2010	10-Nov-2010	30-Jun-2013	31-Dec-2017

**Cumulative Disbursements**



## Restructuring History

Level Approved on 29-Jun-2012 ,Level 2 Approved on 24-Dec-2013 ,Level 2 Approved on 10-Apr-2017 ,Level 2 Approved on 21-Dec-2017

## Related Project(s)

P091314-GZ-NORTH GAZA SEWERAGE TREATMENT PLANT ADDITIONAL FINANCING ,P117446-GZ-North Gaza Emergency Sewage Treatment Project Additional Financing 2 ,P146037-North Gaza Emergency Sewage Treatment (NGEST) Project - Belgian Additional Financing ,P146065-North Gaza Emergency Sewage Treatment Project - Third Additional Financing