



EGAS

ESMP: NG Connection for Dakahliya (Aga, Bilqas, Nabaroh, Mansoura, Mit Elkorama and Gogar)



Petrosafe
EcoCon Serv
ENVIRONMENTAL SOLUTIONS

Annex 5: IMPACT ASSESSMENT

The impact of each activity on each receptor was assessed according to magnitude on a scale of -10 to 10, where negative values indicate a negative influence on the receptor, and importance on a scale of 0 to 10, which encompasses the probability of occurrence, frequency of the impact etc. The numbering system is used as a relative measure, where more negative numbers correspond to impacts having a higher negative magnitude. Susceptible receptors and corresponding activity are deduced and addressed if both magnitude and importance are of minor severity. As per the following table:

		Project Phases																								Assessment																												
Receptor Category	Component	Activities	Construction																				Operation	Construction		Operation																												
			M	I	M	I	M	I	M	I	M	I	M	I	M	I	M	I	M	I	M	I	M	I	M	I	M	I	M	I	M	I	M	I	Magnitude	Importance	Magnitude	Importance																
PHYSICAL	Soil	Soil Degradation				-3	2			-2	2							-2	2																-7	6	0	0																
		Soil Pollution			-2	1	1					-1	1																						-10	9	-10	1																
		Landscape			-2	2	-3	5			-2	5			3	5			-2	5																-3	27	0	0															
	Air	Emission of Gases	-2	2			-2	2			-3	2	-1	2	-4	4			-3	1	-1	2	-4	4			-2	2							-2	3	-24	24	0	0														
		Emission of dust	-4	3			-4	3			-6	6	-1	2			-6	4			-6	6	-1	2												-3	3	-37	33	0	0													
	Water	Surface water pollution																																				-3	3	-3	3	0	0											
	Noise	Background noise level	-2	2	-2	3	-4	1			-6	6	-4	4	-2	4	-4	2	-6	3	-4	4	-2	4	-4	2	-4	4											-3	3	-45	40	0	0										
BIOLOGICAL	Flora	Trees and plants	-1	1			-2	1																																-2	2	-5	4	0	0									
	Fauna	Dogs, Cats, Pigeons	-1	1	-1	2	-2	1			-2	3	-2	1			-2	1			-2	3	-2	1																			2	2	-14	16	0	0						
SOCIO-ECONOMIC		OHS Workers	-2	2	-3	4	-2	1	-6	6	-5	4	-6	2	-7	2	-4	4	-5	4	-6	2	-7	2	-4	4	-8	8	-8	8	-3	2	-8	4									-2	2	-86	52	0	0						
		Infrastructure and underground utilities																																															-2	2	-8	8	-2	2
		Traffic	-3	2			-2	1			-6	2					-3	1			-6	1																												-23	8	0	0	
		Community Health , Safety & Security	-2	2	-1	1	-1	2			-5	5	-2	2	-2	3	-4	2			-5	5	-2	2			-4	2																									-47	36
		Total	-17	15	-11	13	-26	20	-6	6	-42	39	-16	13	-16	14	-20	19	-40	34	-16	13	-16	14	-20	19	-15	15	-14	12	-5	5	-12	6	-20	21	-16	5	-312	266	-16	5												
		Average	-2	2	-2	2	-2	2	-6	6	-4	4	-3	2	-3	3	-3	3	-4	3	-3	2	-3	3	-3	3	-4	4	-7	6	-2	2	-6	3	-3	3	-5	2	-24	20	-1	0												

Further, the **Buroz** Relevant Integrated Criteria and is used to determine the total importance, I, of the impact for each activity on all receptors and of the project overall.

On the basis of the value of the importance of impact, I, obtained, the severity of the impact of an activity is assessed.

Criterion	Definition	Scoring Scale
Intensity (IN)	Degree of destruction of activity on receptor	1 (lowest)-12 (highest)
Extension (EX)	Theoretical area of influence of the impact	1 (localized) – 8 (widespread)
Momentum (MO)	Period of time for manifestation of the impact	4 (immediate: <1 year) – 2 (medium: 1-5 years)- 1 (long term: > 5 years)
Persistence (PE)	Duration of the effect of the impact	1 (fleeting, < 1 year), 2 (temporary, 1-5 years), 4 (permanent, >5 years)
Reversibility (RV)	Possibility of returning to pre-activity initial conditions by rebuilding or natural means	1 (short term, < 1 year)- 2 (medium term, 1-5 years) – 4 (long term, > 5 years or irreversible)
Recoverability (MC)	Possibility of reconstruction with corrective measures	1 -2 (full and immediate recovery)- 4 (partial recovery and medium term)- 8 (unrecoverable)
Synergy (SI)	Reinforcement ability of manifested effects	1(No synergy of actions on a receptor) -2 (moderate synergism)-4 (high synergy)
Accumulation (Ac)	Progressive increase of the effect	1 (no cumulative effect)-4(cumulative effect)
Effect (EF)	Directionality of impact-the cause (action)-effect (impact)	4 (direct)- 1 (indirect)
Frequency (PR)	Regularity of manifestation of the effect	4 (continuous) – 2 (irregular)-1 (periodic)
Importance of Impact (I)	$I = \pm (3 \times IN + 2 \times EX + MO + PE + RV + SI + AC + EF + PR + MC)$	

The table below is based on the Buroz's Relevant Integrated Criteria:

Activities Receptor	Construction																	Operation and maintenance
	Transport of equipment/ machinery- truck driving	Temporary storage/unloading of equipment and materials	Site preparation: Area delineation & Fencing	Working in outdoor environment	Excavation: intermediate pressure network	Pipe laying (PE100)	Welding PE100	Backfilling	Excavation: low pressure PEB0 connections	Pipe laying: low pressure connections	welding PEB0	Backfilling	Household installation-carbon steel pipe threading	Household installations and working at heights	Appliance conversion	Leakage testing: pneumatic	Waste Generation	Gas network processing
Type of impact																	-	
Intensity (IN)/12	3	3	3	7	9	7	6	5	9	7	6	5	5	7	5	6	6	7
Extension (EX)/8	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	4	1	4
Momentum (MO)/4	3	4	3	0	4	0	0	0	4	0	0	0	0	0	0	0	4	4
Persistence (PE)/5	1	3	2	1	4	4	4	1	4	4	4	1	2	1	1	1	4	1
Reversibility (RV)/4	1	1	1	1	4	4	4	1	4	4	4	1	1	1	1	1	1	1
Sinergy (SI)/4	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	4	2
Acumulation (AC)/4	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	4	1
Effect (EF)/4	1	1	1	4	4	4	4	4	4	4	4	4	1	1	1	4	4	3
Frequency (PR)/4	4	1	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	1
Recoverability (MC)/8	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	2	1
Importance of impact (I)	26	26	27	39	52	42	39	30	52	42	39	30	28	33	27	39	47	43
Sub-Average (I)	36.4																	43.0
Total-Average (I)	39.7																	

None/ irrelevant	0	25
Minor Severity	26	50
Medium Severity	51	75
Major Severity	76	300

