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مؤسسة مياه بيروت وجبل لبنان

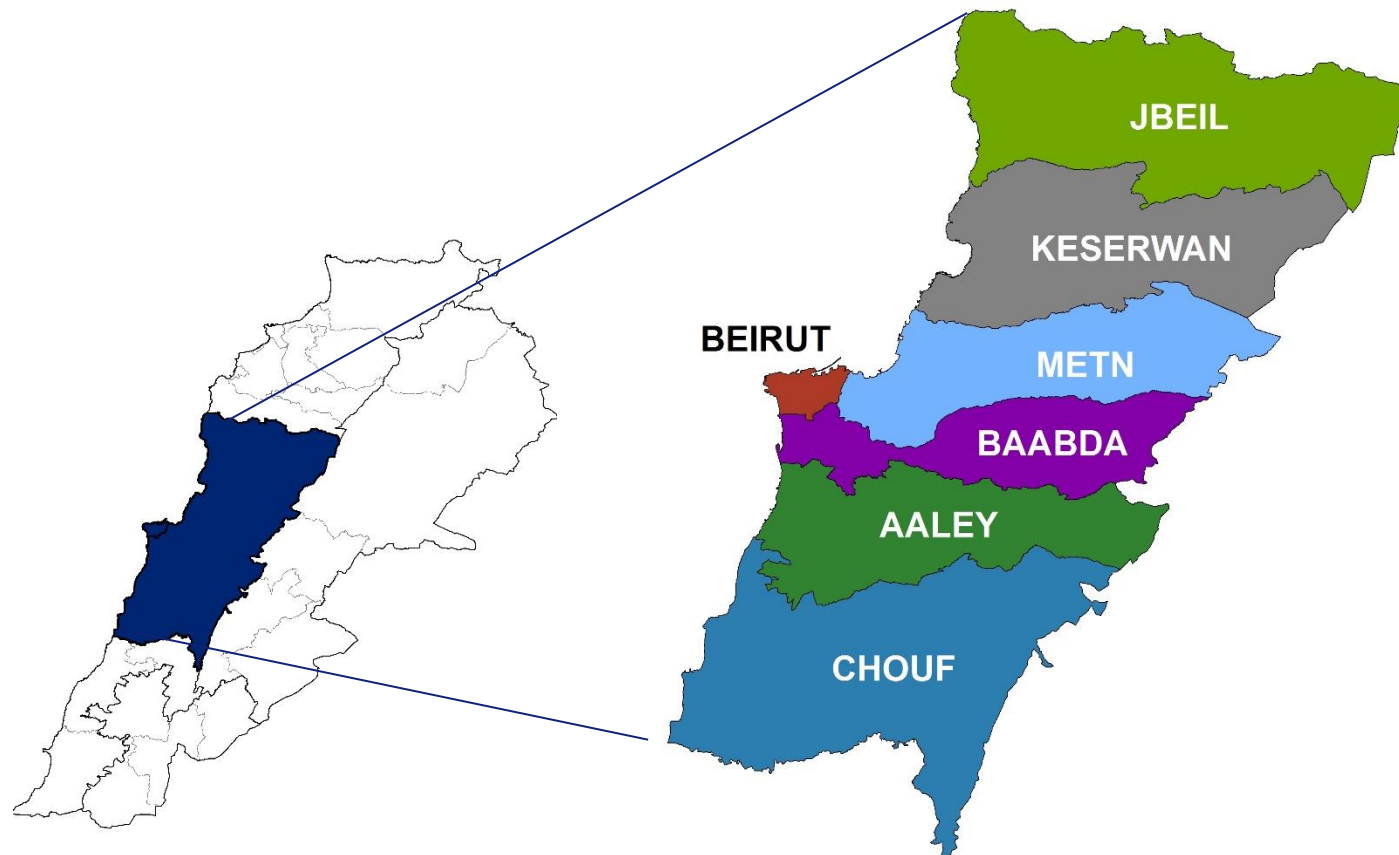
BMLWE

**CURRENT CONDITIONS
COST RECOVERY & FINANCIAL STABILITY**

**Presented by Eng. Ramzi Saliba & Eng. Antoine Zoghby
Beirut - August 2022**

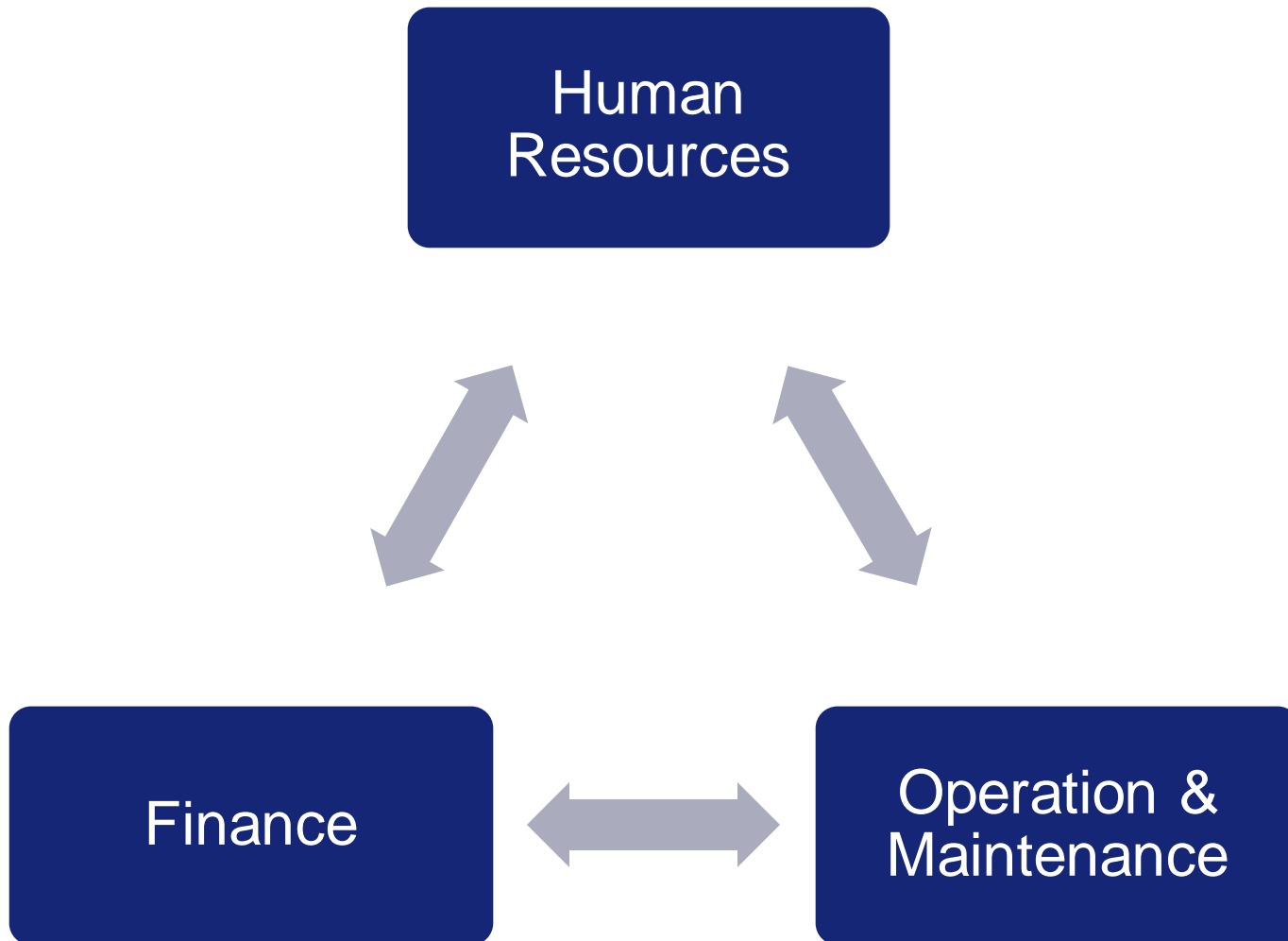
Service Area

- Lebanese Population served:
2,500,000
- Number of residential Units:
580,000
- Number of Subscribers (end 2021):
393,712
- Area:
200,000 Ha



Number of Villages: 533

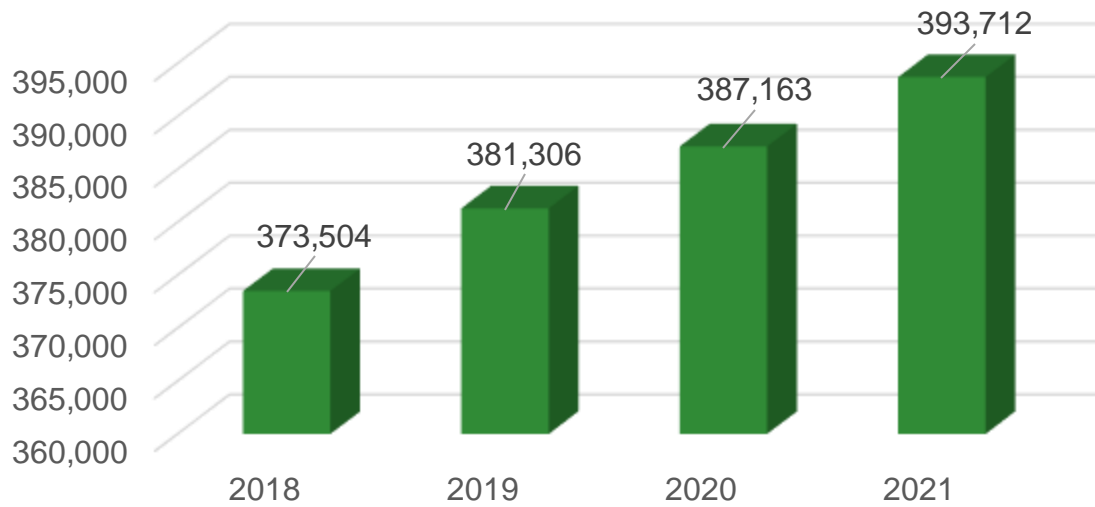
Problem Identification



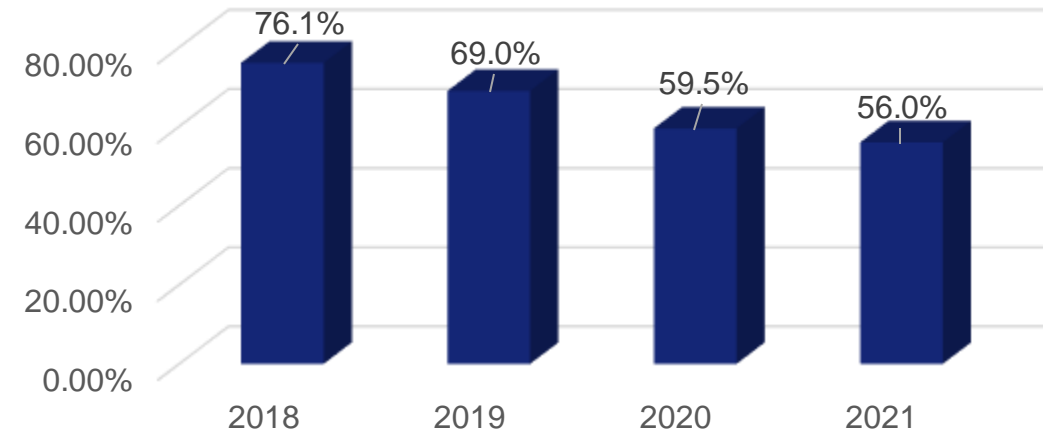
Finance

- **Increasing in Number of Subscribers**
- **Decreasing in Bill Collection Rate**

Subscription Progress

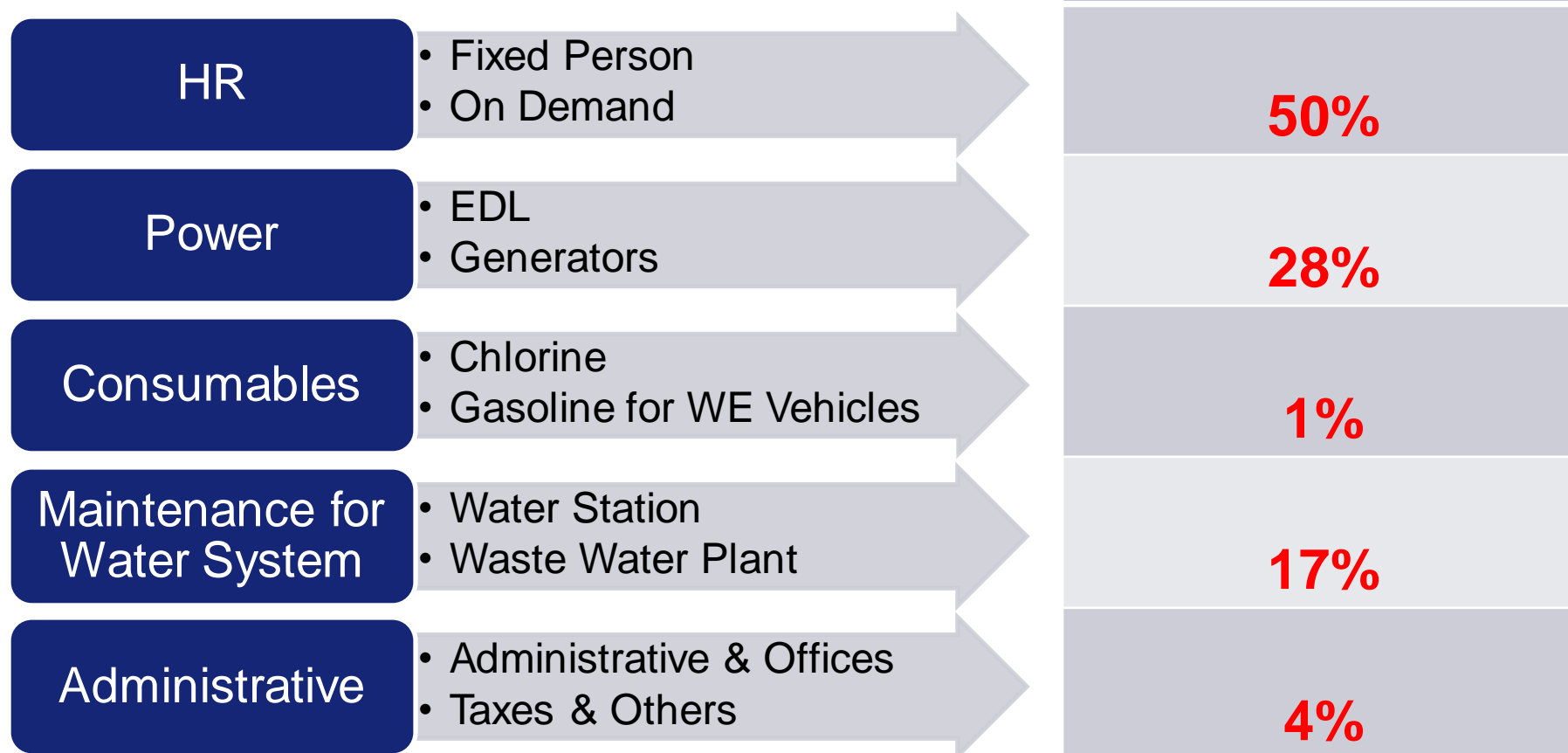


Collection Rate



Operation & Maintenance

➤ Average OPEX for 2018-2021

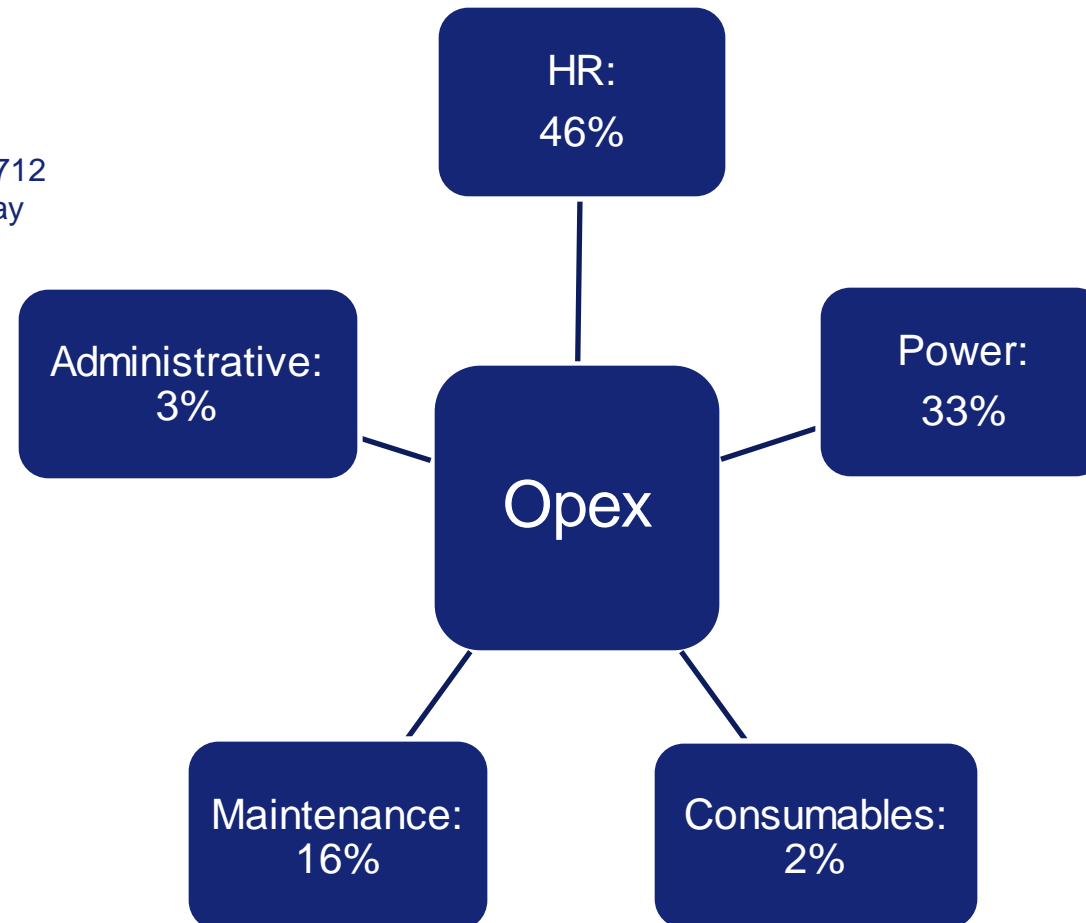


Condition 2021

➤ OPEX for 2021

Exchange Rate Base: **1500**L.L./USD
Transportation Base: **8000**L.L./day

Number of Subscribers (2021) : 393,712
Volume Billed (2021) : 564,391 m³/day
Collection rate :56%



Cost of Power Energy

➤ BMLWE : Generator Status

(Average operation 6h per day)

Total fuel Consumed in 2020 9.500.000 Liters/year	Number of generators	Total KVA	Average fuel consumption	Average cost 1.20 USD/I	Average cost per year For 6h op./day 240days/Year
CHOUF	97	22,870	3,250 l/h	3,900 \$/h	\$5,616,000
BAABDA	46	13,785	1,950 l/h	2,340 \$/h	\$3,369,600
JBEIL	10	3,440	500 l/h	600 \$/h	\$864,000
KESROUANE	34	8,438	1,200 l/h	1,440 \$/h	\$2,073,600
UPPER MATN	11	4,567	650 l/h	780 \$/h	\$1,123,200
COASTAL MATN	23	7,537	1,050 l/h	1,260 \$/h	\$1,814,400
NORTH BEIRUT	14	5,942	800 l/h	960 \$/h	\$1,382,400
SOUTH BEIRUT	21	7,119	1,000 l/h	1,200 \$/h	\$1,728,000
Total Nbr	256	73,698	10,400 l/h	12,480 \$/h	\$17,971,200

Total Estimated fuel consumption 15.000.000 Liters / year

Cost of Power Energy

➤ BMLWE : EDL Status

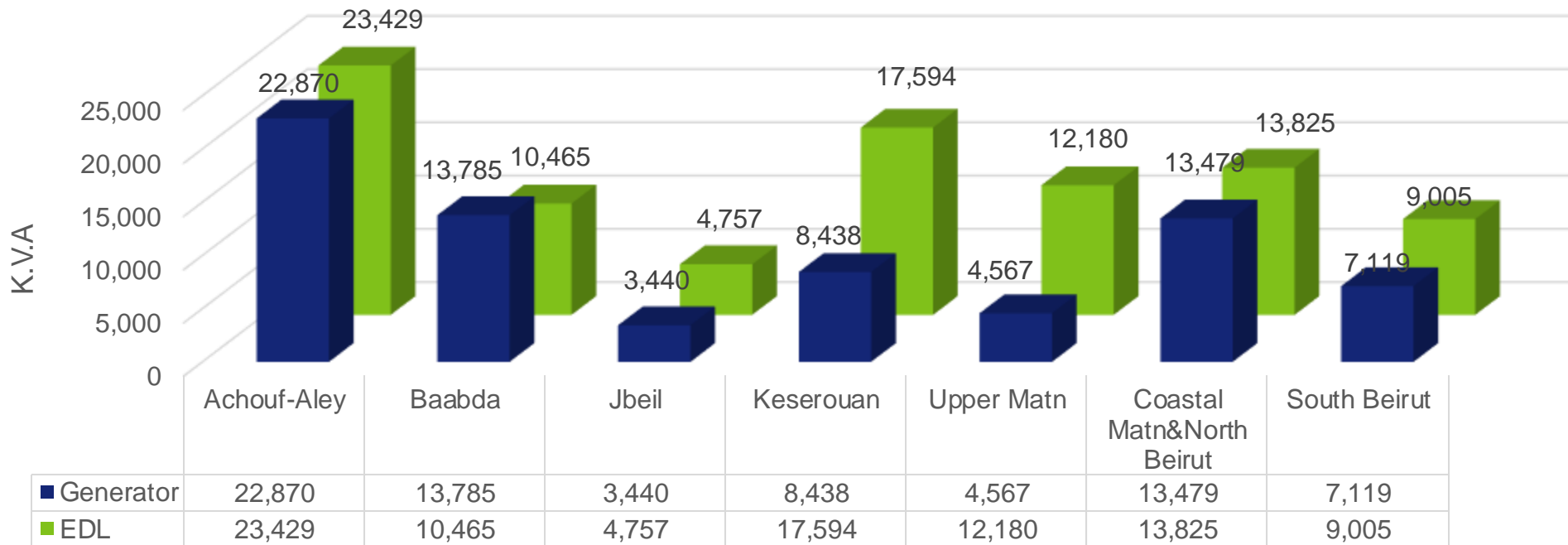
(Average operation 8h to 12h per day)

As per 2020 EDL Bills	Number of EDL Station	Total KVA	Average Consumption KWH/Year	Average cost per year 0.11 \$/Kwh	Forecast cost per year 0.26 \$/Kwh
CHOUF	106	23,429	21,500,000 Kwh/year	\$2,365,000	\$5,590,000
BAABDA	27	10,465	13,500,000 Kwh/year	\$1,485,000	\$3,510,000
JBEIL	23	4,757	6,200,000 Kwh/year	\$682,000	\$1,612,000
KESROUANE	50	17,594	12,600,000 Kwh/year	\$1,386,000	\$3,276,000
UPPER MATN	12	12,180	30,000,000 Kwh/year	\$3,300,000	\$7,800,000
COASTAL MATN	29	13,825	48,500,000 Kwh/year	\$5,335,000	\$12,610,000
NORTH BEIRUT					
SOUTH BEIRUT	20	9,005	7,700,000 Kwh/year	\$847,000	\$2,002,000
Total Nbr	267	91,255	140,000,000 Kwh/year	\$15,400,000	\$36,400,000

Comparison Table

➤ Generator – EDL Power Needed

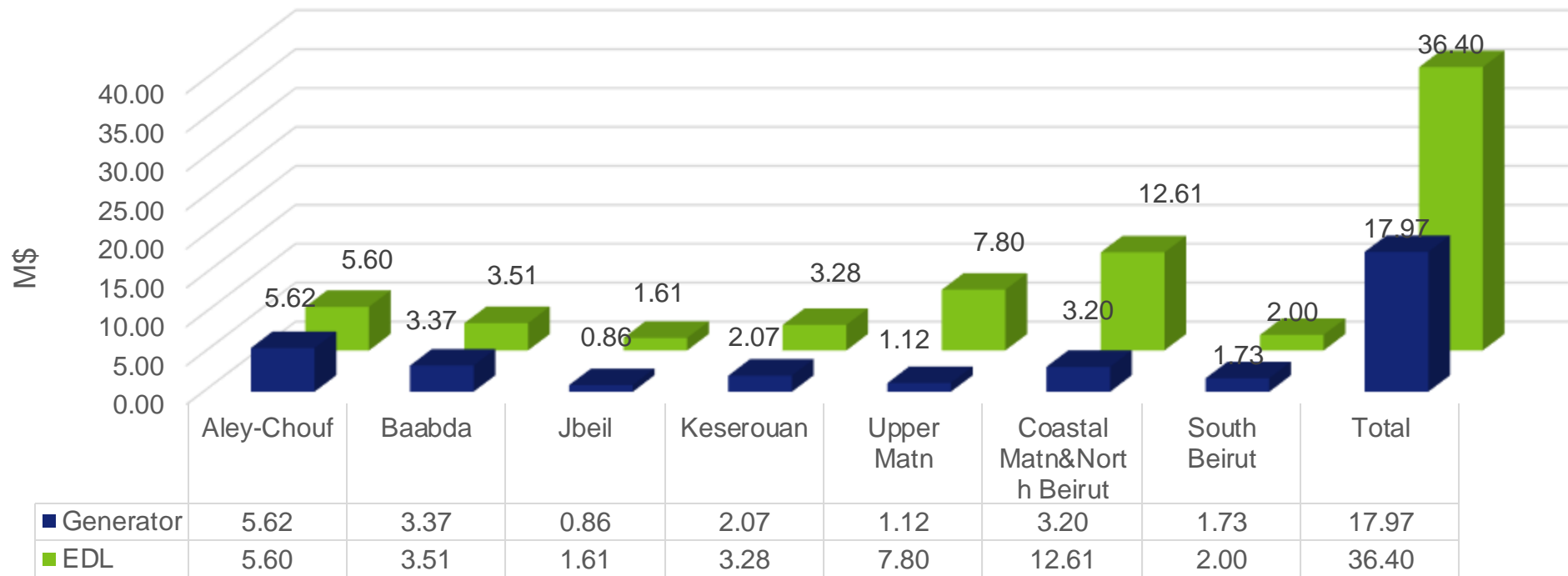
Power in KVA - BMLWE Stations



Comparison Table

➤ Power Expenses 2020

Forecast Power Expenses – BMLWE Stations



Water Resources

➤ BMLWE : Springs , Dams , Wells

	2017			2018			2019			2020		
	(m ³ /day)											
	Springs /Dams	Wells	Total	Springs /Dams	Wells	Total	Springs /Dams	Wells	Total	Springs /Dams	Wells	Total
Jbeil	21,895	5,921	27,816	22,096	5,318	27,414	21,466	5,323	26,789	22,557	5,374	27,931
Kesrouane	67,601	50,762	118,362	63,739	44,871	108,610	90,222	47,363	137,586	95,964	40,805	136,769
Maten H.	32,196	7,649	39,845	32,804	7,447	40,251	41,551	5,188	46,739	40,784	5,591	46,374
Maten L.	79,614	26,072	105,685	75,540	19,641	95,180	87,865	6,863	94,728	90,513	5,843	96,356
Beirut Nord	31,808	22,758	54,565	37,648	8,273	45,921	33,902	25,269	59,171	32,790	32,300	65,090
Beirut Sud	58,409	7,774	66,182	62,586	31,184	93,771	84,818	17,332	102,150	71,038	15,661	86,699
Baabda	39,162	33,384	72,546	39,588	23,947	63,535	54,593	21,390	75,983	53,084	22,136	75,219
Chouf	15,726	2,967	18,693	14,799	3,706	18,505	16,197	4,236	20,433	17,523	4,134	21,658
Iklim	14,877	8,708	23,585	15,866	8,660	24,526	15,159	9,896	25,055	17,041	9,616	26,658
Aley	24,925	9,068	33,993	26,162	9,438	35,600	16,074	8,819	24,893	19,447	5,523	24,970
TOTAL	386,213	175,063	561,272	390,828	162,485	553,313	461,847	151,679	613,527	460,741	146,983	607,724
	204864 280 m³/year			201959 245 m³/year			223937 355 m³/year			221819 260 m³/year		

Average Water Produced (Estimated) : 215.000.000 m³/year

COST RECOVERY & FINANCIAL STABILITY For Power Generating Forecast 2023

Fuel Consumption
15.000.000Liters/Year

Cost : 18 M\$

EDL Power
140.000.000Kwh/Year

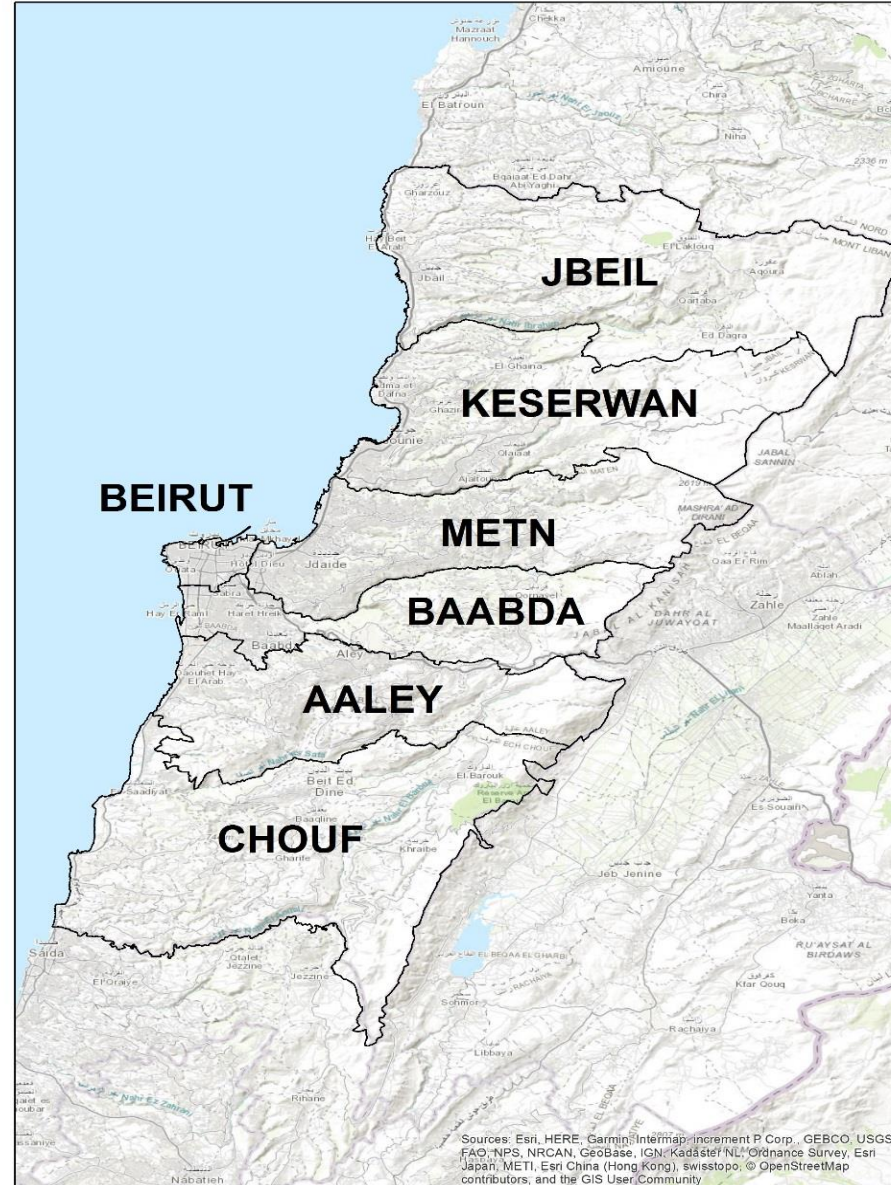
Cost : 36 M\$

Total Power Direct Cost :
54 M\$

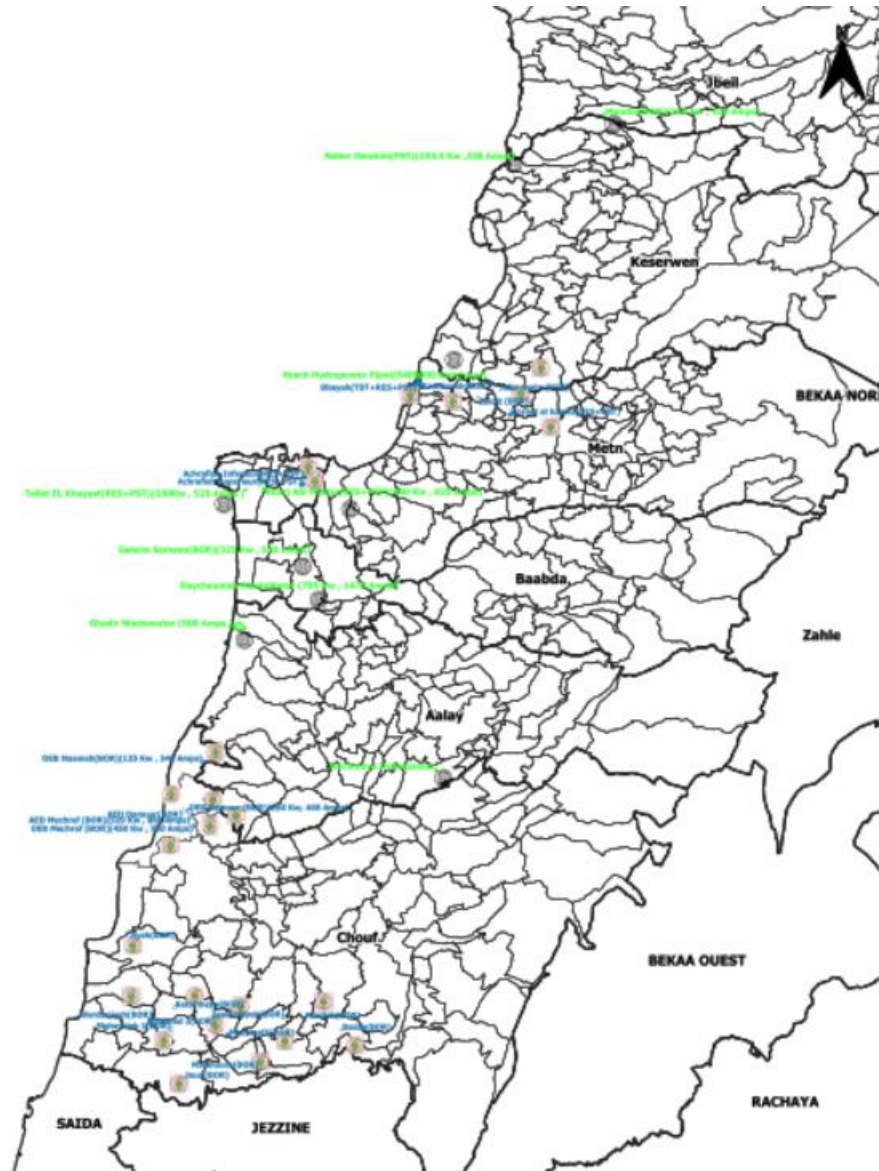
Average Total Water
Produced :
215.000.000 m³/year

Power Impact in Opex
0.25 \$/m³

Planned Energy Investments (2022-2024)



Increase Where Possible EDL Connection Service Line



Implementing Alternative Power sources Projects such as Solarization projects at the level of Pumping and Treatment stations.

ID	Facility	Type	Starting date	Status	Donor	Implementing partner
BML-W-01	El Mechref 2 wells	WPS	2022	Planned	USAID	DAI
BML-W-02	Ain ed Delbeh well	WPS	2022	Planned	USAID	DAI
BML-W-03	Chabrouh	WTP	2022	Planned	USAID	DAI
BML-WW-04	Baadarane	WWTP	2021	Completed	USAID	DAI
BML-WW-05	Maaser el Chouf	WWTP	2021	Completed	USAID	DAI
BML-WW-06	Jdeydeh El Chouf	WWTP	2018	Completed	UNDP	
BML-WW-07	Mazraet Yachough chlorination station	Wreservoir	2021	Feasibility study		BML-WET
BML-WW-08	Aammattour	WWTP	2022	Planned	USAID	DAI
BML-W-09	Bchetfine Pumping Station	WPS	2022	Planned	UNOCHA	Oxfam
BML-W-10	Wardanieh Well Station	WPS	2022	Completed	Private Donation	Municipality
BML-W-11	Barja Jadra Pumping Station	WPS	2022	Study ongoing by Libanconsult	UNDP	
BML-W-12	Kfarmatta Pumping Station	WPS	2022	Study ongoing by Libanconsult	UNDP	
BML-W-13	Kayfoun Pumping Station	WPS	2022	Study ongoing by Libanconsult	UNDP	
BML-W-14	Jyeh Well Station	WPS	2022	Study ongoing by LEBANTRONICS	Municipality	
BML-W-15	Barja Central Pumping Station	WPS	2022	Planned	UNHCR	



THANK YOU!