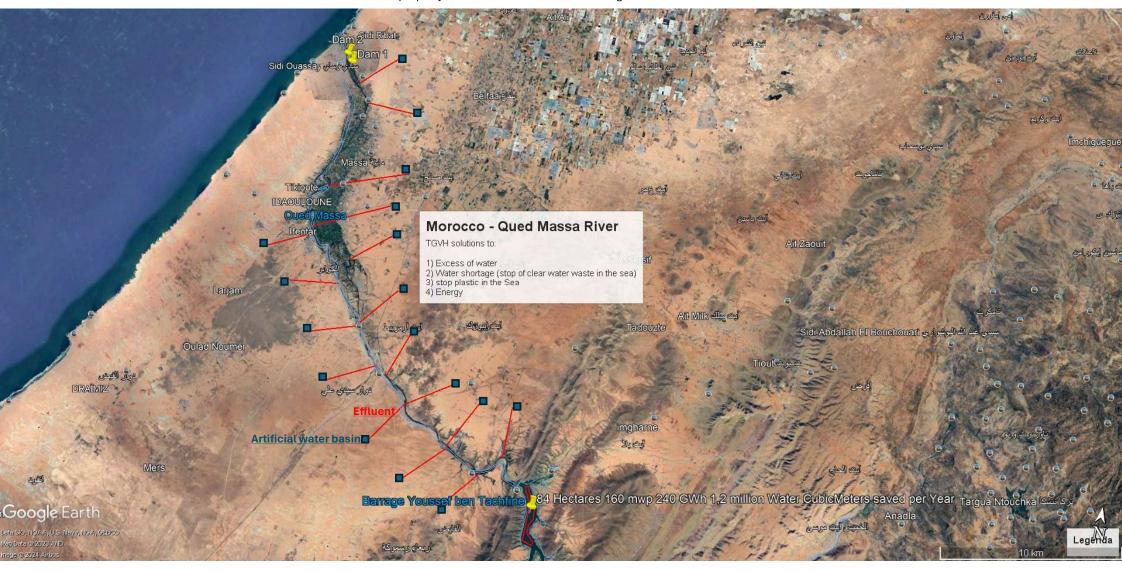
# MOROCCO Water and Energy «DFSP» Solutions to

**D**rought, **F**loods, **S**alinity back to Rivers, **P**lastic in the Sea

# **TGVH case study for Qued Massa River**

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# **Project details**

		average	!		
	#	lenght		Cost x KM	Investment
Effluents	8.000	3,0	Km	630.000€	1.890.000€
(average #80 p	er River)	wide		€ 20/CM all incl.	Effluents
Estimed extra water disseminated in Land		3,5	meters		Total investment
and aquifers, not wasted in Sea		depth			15.120.000.000€
30.000.000.000	CBM per year	3,0	meters	'	
on average rain in Morocco		Total CM	Water valorisation 0,10/CM		3.000.000.000€
155.000.000.000 <b>CBM per year</b>		10,5	savings indamage	es by Drought and floods	3.000.000.000€
Water basin	8.000	area	•		
		50.000	sqm		
		3	meters		Water basins
Tot. Storage CM	1.200.000.000	150.000	MC storage	Cost x Unit	Total investment
saving by ESFPV CM	480.000.000	150.000	MC removed	3.000.000€	24.000.000.000€
.saving 30 Years CM	14.400.000.000			€ 20/CM all incl.	
				Cost x Unit	Dams
Dams	200	100 Rivers	average	400.000€	Total investment
		80	Total/River	800.000€	160.000.000€
				Cost x MW	Investment
FPV by ESFPV	8.000	8	MWp	460.000€	3.680.000€
Total GWh	96.000	12	GWh	110.000€	ESFPV made in Morocc
Morocco Energy needs on 2045		71,20€	PPA/MWh	350.000€	other FPV components
GWh	120.000	Revenue b	y PPA		FPV
(Including Hydrogen)		854.400€	Early/unit		<b>Total investment</b>
		6.835.200.000€	Total Yearly		29.440.000.000€
20,00 € LCOE		48,70€	48,70 € PPA share to investment payback		
22,50 € PPA10% to investors		4.675.200.000 € Yearly to investment payback		Total investments	
					68.720.000.000€
Workunits		48.200	]	Equity 10% int. Rate	37.853.749.604€
			<b>.</b>	Debt 3% int. Rate	78.928.865.956€
	Cost Zero	116.880.000.000€	<<< 25 v	/ears total >>>	116.782.615.561€

# Results at zero cost for Morocco

# no incentives – no subsidies direct positive result >6 bln Euro per Year

## Timing to full deploy 15-18 Years - to block most of damages from Climate change

### **Estimated numbers and results for Morocco**

100 Rivers, 8.000 Effluents (average #80 x River), 8.000 Water basins, 200 Dams

>30 billion Water CBM per Year from Rivers to Land and storage saved/no more in the Sea

>480 mln CBM yearly saved by ESFPV (>14 billion CBM in 30 Years ESFPV life)

>64 GWp

>96 TWh (average 30 Years)

>48.000 Workers for decades (set up + maintenance)

>116 billion Euro direct GDP (expected double with undirect GDP)

>3 billion saved per year (damages by Drought and Floods)

# Avaiable to a demo plant/test in a river with: 1 Effluent, one Water basin, one ESFPV plant and two dams

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