

Financing Investment opportunity:

Irrigation project pipeline - Turkey

BUSINESS INVESTMENT SOLAR FARMS PROPOSAL - One



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2024



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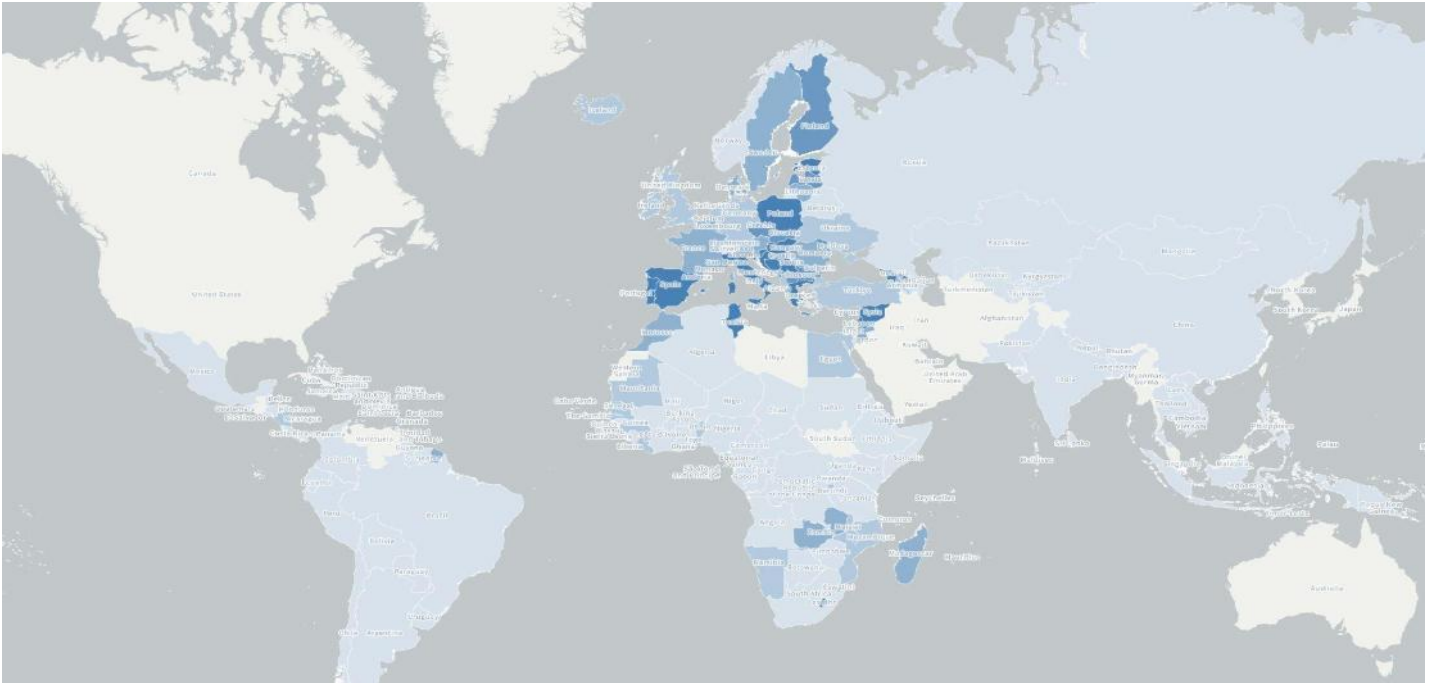
IN|TECS
integrated technologies



Turkey Solar Irrigation projects opportunity

Since 1959 EIB has invested in thousands of companies and projects, both across the EU and beyond.

EIB has funded 263 projects in Turkey



This is an application for funding for the Turkey Solar Irrigation project by PSECC Ltd on behalf of Swiss Joule & InTecs.



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EXECUTIVE SUMMARY

Request for Quotation - Financing and EPC services

Intecs and Swissjoule and local associates are developing several project initiatives in the Area of Turkey. Within the last year the cost of energy has doubled to power the pumps for irrigating crops as pistachio, corn, grain, rapeseed, produce, cotton or fruit trees. The following document describes to replace power from the grid with renewable Solar power.

The applying irrigation associations received authorization by parliament to re-structure and organize energy supply independently. This is based on the legislation for renewable Energy.

Water for irrigation is pumped out of the reservoir at Atatürk dam and runs in open canals up to 100 km to the plantations. During last mile distribution, delivered amounts are invoiced to the farmers by the applying irrigation association.

Replacing all the power consumed over the vegetation period requires a 100 MWp solar plant. As net metering is offered for the given purpose, the financials are straight forward. 200.000 MWh p.a. are consumed. Cost for this has reached a current rate of 0,1014 \$ / kWh. After obtaining energy license the current rate for off-taking is at the same 0,1014 \$ / kWh. This tariff will be used for paying interest and repay the given loan.

Against this background a Capital Expenditure of 900 \$ / kWp the full payback is possible within 6 Years.

Based on the local legislation an utility has to off-take renewable electricity created, if the installation is furnished with a production license. To utilize this mechanism as a payback warranty to the financier, the utility will accept and has provided a draft of a declaration of assignment of funds directed to the financier.

Declaration of assignment in combination with the transfer of ownership of the SPV, owning the installation, will fully grant the funds to pay back incl. 8% interest.

The below describes a first pilot project of 100 MWp. A second local irrigation association was acquired to install another 100 MWp on the reserved property. Two other associations including extensions will account to a total installation size of 435 MWp in this region only.

Next to a financing solution as described below, a PPP structure for BOT can be discussed. In this case the public partner will receive Shares of the SPV according to the repayment of the debt and reduces the payments for the energy self-consumed. This structure will be provided upon request.

After acquisition of financing for this 1st pipeline, other regions will be acquired with the same blueprint and methodology.

All players are more than committed to replace power from the grid and get independent from all kinds of cost fluctuations.

PSECC Ltd project development charge is 0.5% of total funding.

2. 100 MWp, South of Atatürk Hydroelectric Dam

a. Location of Pumps and Irrigated plots, growers



Place of main electric consumption is at the south eastern part of Lake Atatürk. Water for Irrigation gets pumped with 10 – 12 pumps into the canal providing the southern growing areas with irrigation.



Total length of this part of the canal is 103 km, whereas 38,5 km are underground. On the way to the south the canal is equipped with additional pumps and gates. The basis for the calculation is the growing area and the variety to be irrigated.



In this area farmers grow traditionally mainly pistachio, corn, grain, rapeseed, produce, cotton or fruit trees. This crop strongly depends on watering. Especially in the month from March till last harvesting in November.

b. Location of installation site

To host solar generators of 2 divisions of the water associations the below area is considered as suitable and was reserved for the development.

Land is flat, not used for any agricultural or other activity and needs just a minimum of land preparation. Soil conditions are assumed for simple ramming.



The designated installation has road access and can be reached within a 1-hour drive from Sanliurfa.

The plotted and reserved area can host a total of the 330 MWp applicant 1 & 2 are requesting. Further plots and extensions can be discussed with the land owner. Land lease cost including a reserve are considered in the financial projection.

GPS for Google Earth:

37°40'33.03"N, 39°27'42.62"E

Footprint of the red location: 362 hectares

c. Connection to feed in point

Right of way to the neighboring 154 kV line is granted by the landowner.
Distance from site to powerline is 500 m.

d. Off-taking

As this project and the associated pipeline of projects of other irrigation service providers is clearly in the public interest and supports the stability of the agricultural sector, the off taking utility has offered net metering.

This implies that 100 % of the generated electricity can be evacuated independent from season or demand and can be fully consumed when needed. Net metering does not require any payments or deductions for feeding in or additional cost for consumption.

Considering last year consumption of close to 200.000 MWh, break even for the installation size to fully cover consumption is around 100 MWp for Applicant 1 and the same for Applicant 2.

If supported by EPC and Financier, the applicants are interested to increase the installation size in a second sequence from 100 to 130 and 100 to 200 MWp respectively.

e. Financials

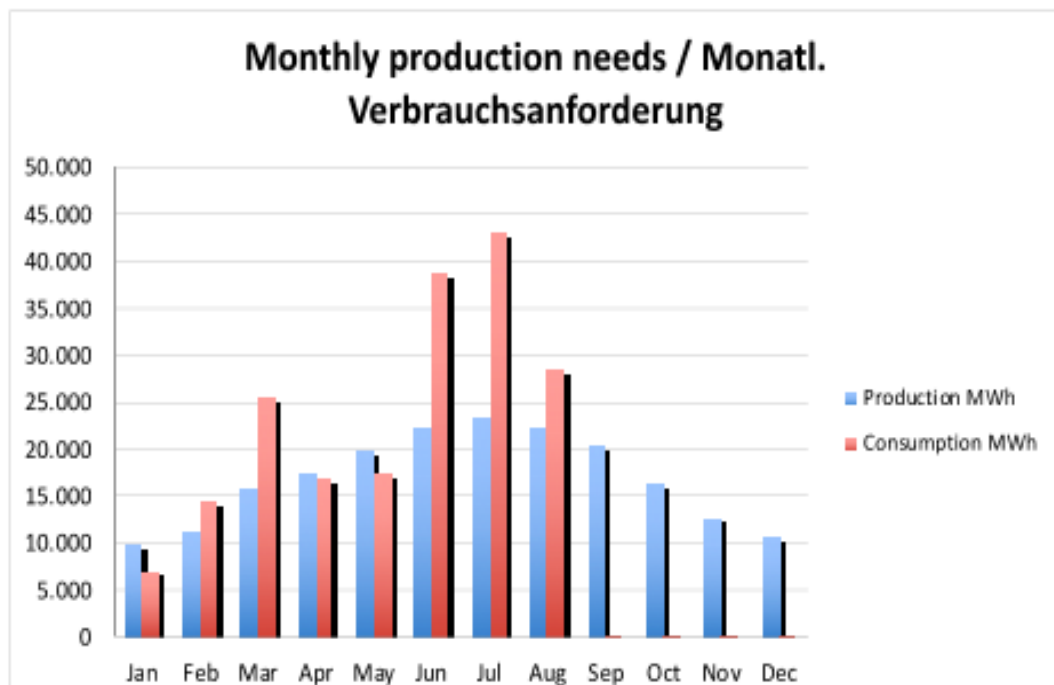
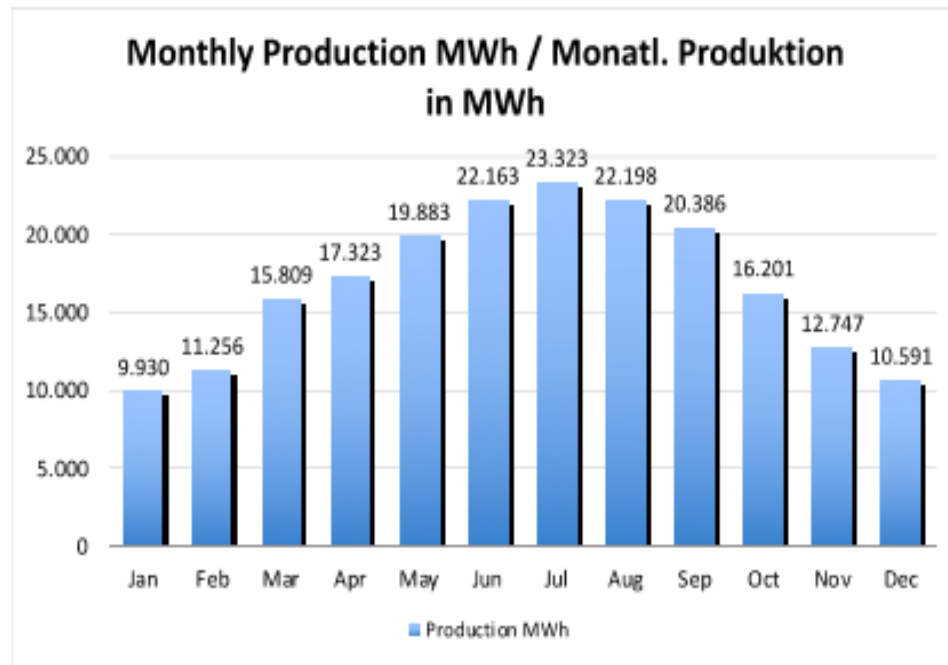
As many other countries also Turkey is facing skyrocketing electricity cost.
The climate conditions in the area require irrigation to support the growths of the crop from March to November. From December to February there was so far just a little need for irrigation.

According to information of the irrigation association the consumption in 2021 was around 197.000 MWh. Current figures show a comparable consumption in 2022.

Whereas the power needed for irrigation was nearly unchanged, the cost of consumption skyrocketed: In 2021 the irrigation association paid around 14 M. \$ or 0,0710 \$ / kWh. In 2022 the association already paid 0,1014 \$ / kWh.

However for the following planning a realistic 0,1014 \$ / kWh shall be considered as the income for the serving (repayment and cost of financing, interest, annuity) of a potential financier.

Assumptions Financial Model: 100 MWp Installation Size



Specification of plant:

Total nominal power:	100.000,00 kWp
Degradation:	0,40%
Blackout loss:	0,00%

Earnings:

Electricity yield / kWp:	2.002 kWh / kWp
Power yield / year:	200.200.000 kWh / year

Feed-in tariff:

Until kW:Currency / kWh:	Inflation:	Cap curr / kWh:
0,1014	0,00%	0,0000
0,0000	0,00%	0,0000
0,0000	0,00%	0,0000
0,0000	0,00%	0,0000
0,0000	0,00%	0,0000

Ending of feed-in tariff:	after 20. year
Feed-in tariff afterwards:	0,0000 cu / kWh
Direct sales per year:	0,00%
Electricity sales price:	0,0000 cu / kWh
Electricity sales price inflation:	0,00%

Earnings by certificates:

Certificate / fed in MW:	1 Certificates / MW
Total certificates:	140.140 Certificates
Sales price / certificate:	5,00 cu / Certificate
Certificate price modification:	0,00%
Minimum certificate price:	0,00 cu / Certificate

Financing:

Annuity:	1
Interest rate with fixed rate:	8,00%
Interest rate after fixed rate:	0,00%
Fixed interest rate until:	
Grace period until:	
Debt ratio:	100,00%
Debt capital:	82.000.000
Credit period:	6 years
First repayment date:	Jan-24
Repayment terms:	3
	semiannual

Running costs:

Maintenance / kWp:	8,00 cu/kWp
Insurance:	0,40%
Management:	370.000
Lease per year:	200.000
Cost inflation:	3,00%

Fiscal aspects:

Amortization period:	15 years
Corporate tax:	0,00%
Other taxes:	0,00%

Start of operations:	Jan-25
Currency:	€
Total contract value:	82.000.000

f. **Securities**

Currently the following securities are envisioned.

1. The applying organization will incorporate an SPV and transfer the ownership of the SPV including the fully commissioned installation itself as a security to the financier.
2. The irrigation association fully administers the IPARD subsidies granted by the EU to the farmers. If farmers are defaulting and are not paying their share of the electricity cost for pumping and irrigation, the association can block the complete IPARD subsidies till full payment. If irrigation invoices are finally not paid, the association can utilize the funds for outstanding payments.
3. After acquisition of the energy production license, the local utility has the legal obligation to off-take the electricity produced by the IPP license holder.
The off-taker has already provided the attached declaration of assignment. With this the utility grants to transfer the earnings of the electricity delivered directly to the financier.

After signature the utility grants in Paragraph 3 to irrevocably transfer rights and receivables to the assignee until the debt from the financing is paid.

In the unlikely case of default of the Irrigation association, the financier can activate the declaration of assignment. This results in the transfer of the turnover directly to the financier.

Year / Jahr	1	2	3	4	5
	2025	2026	2027	2028	2029
Produktion in kWh	201.811.684	201.005.915	200.203.364	199.404.017	198.607.862
Turnover feed in / Umsatz Einspeisevergü	20.463.705	20.382.000	20.300.621	20.219.567	20.138.837

The declaration of assignment is already designed to fully cover the entire debt (payback and interest) for the full term. After signature it is legally binding and irrevocable for both the IPP and off-taker.

Over the first 5 years of operation the declaration of assignment covers the payback of the full loan incl. an interest of 8%.

Inflation and exchange risk:

Repayment and interest payments are made in local currency. However, the electricity price is adjusted every quarter in accordance with the EPDK publication. This mechanism ensures that the financier is largely protected against risks arising from exchange rates and inflation.

3. 100 MWp, East of Atatürk Hydroelectric Dam

Negotiation with Applicant 2 was started.

A yearly consumption of 200.000 MWh was reported. This can be covered by another 100 MWp solar generator.

Out of economic reasons the 100 MWp plus possible extensions will be hosted on the 362 hectares property in Catli



Irrigation Area of Applicant 2

Therefore the assumptions and financials are identical for the 2nd Irrigation association.

4. Envisioned Pipeline & Extensions

Applicant	Area	Installation Size
1	130 hectares	100 + 30 MWp
2	200 hectares	100 + 100 MWp
3	tbd	20 + 20 MWp
4	tbd	65 MWp
Total		435 MWp

Grasmann 030124

Un-negotiated draft of a letter of assignment provided by the utility.

Finanzierung 100 MWp, Irrigation, 6 Years

	82.000.000	820 \$/kWp	100.000	EPC BOS / Installkosten	730	73.000.000	Carbon credits created	tons	reduction 0.9
Capex / Investitionsausgaben	82.000.000	820 \$/kWp	100.000	EPC BOS / Installkosten	730	73.000.000			
Insurance fee / Versicherung	0	0,0% of debt		Connection, Permits	60	6.000.000	0,8 kg/kWh	161.449.347	161.449
Financing fee / Finanzierungsgebühr	0	0,0% of debt		Reserves, Reserven	30	3.000.000			145.304
Total contract value / Vertragssumme	82.000.000			Total	820	82.000.000			727
Equity of contract value / Eigenkapital	0	0%							
Debt of contract value / Fremdkapital	82.000.000	100%							
Interest rate / Zinssatz	8,0%								
Repayments per year / Raten pro Jahr	2								
Contract period in full years / Vertragszeit	6	Escalator / yes	Inflation	Irradiation / Einstrahlung					
PPA incentive based on purchase cost / PPA	0,1014 \$/kWh	0,00%	3,00%	2,002	PV Sys calc				

Year / Jahr	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Produktion in kWh	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Turnover feed in / Umsatz Einspeisungsvergütung	201.811.684	201.005.915	200.203.364	199.404.017	198.607.862	197.814.885	197.025.074	196.238.417	195.454.901	194.674.513	193.897.241	193.123.073	192.351.995	191.583.996	190.819.064	190.057.185	189.298.349	188.542.542	187.789.753	187.039.969
Turnover Certificates	706.341	703.521	700.712	697.914	695.128	692.352	689.588	686.834	684.092	681.361	678.640	675.931	673.232	670.544	667.867	665.200	662.544	659.899	657.264	654.640
Insurance cost / Versicherung	328.000	324.000	319.975	315.950	311.925	307.900	303.875	299.850	295.825	291.800	287.775	283.750	279.725	275.700	271.675	267.650	263.625	259.600	255.575	251.550
Maintenance / Wartung	800.000	824.000	848.720	874.182	900.407	927.419	955.242	983.899	1.013.416	1.043.819	1.075.133	1.107.387	1.140.609	1.174.827	1.210.072	1.246.374	1.283.765	1.322.278	1.361.946	1.402.805
Management / Management	370.000	381.100	392.533	404.309	416.438	428.931	441.799	455.053	468.705	482.766	497.249	512.167	527.532	543.357	559.688	576.448	593.741	611.554	629.900	648.797
Lease / Pachtkosten	200.000	200.000	200.000	200.000	200.000	200.000	200.000	200.000	200.000	200.000	200.000	200.000	200.000	200.000	200.000	200.000	200.000	200.000	200.000	200.000
Opex / Operative Kosten	1.698.000	1.742.940	1.789.228	1.836.905	1.886.012	1.936.593	1.988.690	2.042.351	2.097.622	2.154.550	2.213.187	2.273.582	2.335.790	2.399.864	2.465.859	2.533.835	2.603.850	2.675.966	2.750.245	2.826.752
EBITDA	21.086.539	20.950.628	20.813.732	20.675.808	20.536.815	20.396.708	20.255.441	20.112.966	19.969.237	19.824.202	19.677.812	19.530.013	19.380.750	19.229.970	19.077.613	18.923.621	18.767.933	18.610.487	18.451.218	18.290.060
- Amortization / - Abschreibung	5.466.667	5.466.667	5.466.667	5.466.667	5.466.667	5.466.667	5.466.667	5.466.667	5.466.667	5.466.667	5.466.667	5.466.667	5.466.667	5.466.667	5.466.667	5.466.667	5.466.667	5.466.667	5.466.667	5.466.667
EBIT	15.619.872	15.483.961	15.347.065	15.209.142	15.070.149	14.930.041	14.788.774	14.646.300	14.502.570	14.357.536	14.211.145	14.063.346	13.914.084	13.763.303	13.610.946	18.923.621	18.767.933	18.610.487	18.451.218	18.290.060
- Interest amount / - Zinskosten	6.341.709	6.433.269	6.450.699	6.387.953	6.238.486	6.095.223	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EBT	9.278.164	10.050.693	10.896.365	11.821.189	12.831.663	13.934.819	14.788.774	14.646.300	14.502.570	14.357.536	14.211.145	14.063.346	13.914.084	13.763.303	13.610.946	18.923.621	18.767.933	18.610.487	18.451.218	18.290.060
P/L before tax / Gewinn Verlust vor Steuer	9.278.164	10.050.693	10.896.365	11.821.189	12.831.663	13.934.819	14.788.774	14.646.300	14.502.570	14.357.536	14.211.145	14.063.346	13.914.084	13.763.303	13.610.946	18.923.621	18.767.933	18.610.487	18.451.218	18.290.060
Corporate tax / Unternehmenssteuer	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other taxes / Andere Steuern	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Profit / Loss / Gewinn / Verlust	9.278.164	10.050.693	10.896.365	11.821.189	12.831.663	13.934.819	14.788.774	14.646.300	14.502.570	14.357.536	14.211.145	14.063.346	13.914.084	13.763.303	13.610.946	18.923.621	18.767.933	18.610.487	18.451.218	18.290.060
Accumulated P/L / Kumulierter Gewinn /	9.278.164	19.328.856	30.225.222	42.046.411	54.878.074	68.812.892	83.601.666	98.247.966	112.750.536	127.108.072	141.319.217	155.382.563	169.296.646	183.059.949	196.670.896	215.594.517	234.362.450	252.972.937	271.424.155	289.714.216
Cash Flow / Bargeldumlauf																				
Profit / Loss / Gewinn / Verlust	9.278.164	10.050.693	10.896.365	11.821.189	12.831.663	13.934.819	14.788.774	14.646.300	14.502.570	14.357.536	14.211.145	14.063.346	13.914.084	13.763.303	13.610.946	18.923.621	18.767.933	18.610.487	18.451.218	18.290.060
+ Amortization / + Abschreibung	5.466.667	5.466.667	5.466.667	5.466.667	5.466.667	5.466.667	5.466.667	5.466.667	5.466.667	5.466.667	5.466.667	5.466.667	5.466.667	5.466.667	5.466.667	5.466.667	5.466.667	5.466.667	5.466.667	5.466.667
Available Cash Flow / Verfügbare Mittel	14.744.830	15.517.359	16.363.032	17.287.856	18.298.330	19.401.485	20.255.441	20.112.966	19.969.237	19.824.202	19.677.812	19.530.013	19.380.750	19.229.970	19.077.613	18.923.621	18.767.933	18.610.487	18.451.218	18.290.060
- Repayment / - Rückzahlung	11.132.847	12.041.288	13.023.857	14.086.604	15.236.070	16.479.334	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Free Cash Flow / Freies Bargeld	3.611.983	3.476.071	3.339.175	3.201.252	3.062.259	2.922.152	20.255.441	20.112.966	19.969.237	19.824.202	19.677.812	19.530.013	19.380.750	19.229.970	19.077.613	18.923.621	18.767.933	18.610.487	18.451.218	18.290.060
Free Cash flow account / Kumuliertes r	3.611.983	7.088.054	10.427.230	13.628.482	16.690.741	19.612.892	39.868.333	59.981.299	79.950.536	99.774.738	119.452.550	138.982.563	158.363.313	177.593.283	196.670.896	215.594.517	234.362.450	252.972.937	271.424.155	289.714.216
Debt Services / Schuldendienst																				
Credit sum / Kreditsumme	82.000.000	70.867.153	58.825.865	45.802.008	31.715.404	16.479.334	-	-	-	-	-	-	-	-	-	-	-	-	-	-
- Repayment / - Rückzahlung	11.132.847	12.041.288	13.023.857	14.086.604	15.236.070	16.479.334	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Verbleibende Schulden	70.867.153	58.825.865	45.802.008	31.715.404	16.479.334	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IRR on total investment / interne Verzinsung der Gesamtinvestition	20,78%	Above figures are a rough estimation and subject to a review. Subject to approval and external credit approval. Therefore, not binding.																		
IRR on equity / Verzinsung Eigenkapital	#ZAHL!	All terms and conditions are provided as an indication without any obligation on our part.																		

Swissjoule FM 100MW D-E Irrigation 820\$, 101,4\$, 8%, FCF 291223.xlsx

CONTRACT OF ASSIGNMENT OF CLAIMS

ASSIGNOR :

ASSIGNEE :

ADDRESSEE :

SUBJECT : The subject is the assignment of the receivables arising and to arise in favor of the assignor (creditor) before the addressee (debtor) to the assignee under the following conditions.

CONDITIONS OF ASSIGNMENT :

1. Assignordeclares, accepts and undertakes that he has irrevocably transferred and assigned the amount of TL (Turkish Lira) of his receivables that have arisen or will arise before the Addressee, to the Assignee, without any consideration.
2. The assignor declares, accepts and undertakes that he/she has a receivable from the addressee as stated above on the date of signing this agreement and that he/she has not previously assigned the receivable subject to assignment to another real or legal person.
3. The assignor hereby irrevocably transfers and assigns all rights and receivables that have arisen and will arise before the above-mentioned addressee to the assignee and hereby declares, accepts and undertakes that he has no rights on the receivable until the debt amounting toTL is paid and that the authority to claim, collect and collecting power has passed to the Assignor
4. In case of any dispute arising between the parties due to the implementation of this contract, the parties declare and accept that the books, records and documents of the assignor are as an exclusive evidence contract.
5. In case of any dispute arising between the parties due to the implementation of this agreement the parties declare and agree that ISTANBUL Courts and Execution Offices are competent and that this article is a jurisdiction agreement/..../....

ASSIGNOR
TITLE-SIGNATURE

ASSIGNEE
TITLE-SIGNATURE