Investments to Boost Earnings

Astor Energy

We initiate our coverage with a **Market Outperform** recommendation and **TRY177.80 per share target price for Astor Energy**. **We like the growth outlook of the company** that is supposed to benefit from the immense energy sector investments in Turkiye due to the ongoing investments in electricity production through **i) renewable energy power plants, ii) reconstruction of the earthquake region, and iii) need to renew and improve the efficiency of the distribution and the transfer of electricity across the country**. Moreover, Astor Energy, as a leading manufacturer of transformers in the region, may benefit from the **reconstruction of neighborhood countries suffered from geopolitical tensions**. Adding the US market's potential, export's share in revenue may increase to 50% in the near future from 33.4% currently.

We expect **~USD110 mln capital expenditure that will take place in 2024 and 2025 may result in substantial expansion in revenue base** starting from late 2024. These investments include a **capacity expansion in manufacturing of transformers, production of gas insulated switchgears, expanding the capacity of Solar Power Plant and the investments in manufacturing and servicing the EV chargers**.

Astor Energy currently operates with a net cash position USD86 mln based on 9M23 financials. We expect the **positive FCF to continue due to the strong sector outlook as the company benefits from the live demand that is supposed to remain solid at least by 2030**. Therefore, we expect the company's **NWC/Sales ratio may further improve next year, that is supposedly sufficient enough for capital expenses**.

At a first glance the stock trades at higher multiples than BIST industrial average. Following the completion of these investments we project USD based revenues to more than double in 2025 compared to our 2023FY estimate, bringing down the forward price multiples to attractive levels. According to our projections the stock trades at **2023, 2024 and 2025 P/E multiples of 18.1x, 11.1x and 6.0x**. When it comes to **EV/Ebitda the respective multiples for the upcoming three years are 17.1x, 10.4x and 4.8x**. We give higher priority to the company's growth prospect as the anticipated investments to boost earnings rapidly in a live demand environment, that will double its revenue in hard currency terms in couple of years.

The main risk factors can be listed as i) possible delay in investment plan, ii) the elevated interest rates in local market that may cause an extension in trade receivables duration, iii) further increase of the tension in the region that may cause a delay in the recovery in neighborhood countries and, iv) fast rise in global metal prices may pressure gross profit margin.

Listing Details and View

Bloomberg Ticker	**ASTOR TI**
View	**Market Outperform**
Price per Share, TRY	103.80
Target Price per Share, TRY	**177.80**
Upside	71%
Free Float	21%
Market cap, TRY mln	103,592
Market cap, USD mln	3,448
BIST-100 Index Weight	0.98%
BIST All Shares Index Weight	0.75%
Foreign Share	6.73%
Pension Funds Share	0.15%
Mutual Funds Share	4.85%

Source: Matriks, PhillipCapital Research
Price & Market Cap. as of 15-Jan

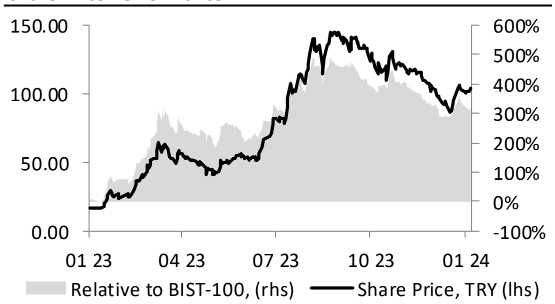
Key Financials, TRY mln	2022	2023T	2024T	2025T
Revenues	7,392	14,046	28,091	56,182
Revenue Growth	134%	90%	100%	100%
Export Share	21%	34%	42%	48%
Gross Profit	2,486	5,267	10,253	20,507
Gross Profit Margin	33.6%	37.5%	36.5%	36.5%
EBITDA	2,164	4,705	9,130	18,259
EBITDA Growth	157%	117%	94%	100%
EBITDA Margin	29.3%	33.5%	32.5%	32.5%
Net Profit	1,827	4,619	9,364	17,313
Net Profit Growth	253%	153%	103%	85%
Net Profit Margin	24.7%	32.9%	33.3%	30.8%
Net Debt	770	-3,143	-8,246	-16,769
Net Debt/EBITDA	0.4	-0.7	-0.9	-0.9
P/E	0.0	18.1	11.1	6.0
EV/EBITDA	0.0	17.1	10.4	4.8

Source: Company Data, PhillipCapital Research

Shareholder Structure	Number of Shares (mln)	Stake
Feridun Gecgel	788	79.0%
Free Float	210	21.0%
Total	**998**	

Source: Company Data

Share Price Performance



Source: BIST, Rasyonet

	1m	3m	6m	1y
Nominal	5.9%	-9.0%	26.7%	530.9%
Relative	2.9%	-10.3%	3.9%	270.9%
Trd. Vol. USD mln	62	74	146	142

Source: BIST, Rasyonet

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Executive Summary

Astor Energy manufactures power transformers, distribution transformers, Medium Voltage (MV) and High Voltage (HV) equipment for electricity generation, transmission and distribution. The company is owned by Feridun Gecgel with 79% share and went public in early 2023 with a free float ratio of 21%.

Exports constituted 34% of revenues in 9M23. More than 40% is targeted

Astor Energy is based in Ankara located on a production facility of 140k sqm land, 105k sqm of which is under single roof. According to the Chamber of Commerce Astor Energy is Turkiye's 128th largest industrial organization according to ISO-500 data for 2022, ranks first among transformer and switching products manufacturers. The company manufactures four main products: Power transformers, distribution transformers, MV/HV equipment and the mechanical factory that feeds these capacities. It has a capacity utilization rate of 65% for power transformers, 97% for distribution transformers, 96% for MV and HV equipment. The mechanical factory can produce machining needs of the company about 90-95% of distribution transformers, 85-90% of power transformers, 95-100% of MV switching products, and 65-70% of HV switching products.

When we look at the company's net sales breakdown, distribution transformers took the largest share with 47% as of 9M23, while power transformers accounted for 28% of net sales, MV switching products made up 18%, and HV switching products made up 1%.

In terms of customer groups, the largest share in net sales is export markets with 34%, while sales to electricity distribution companies constitute 15% of total net sales. While dealers constitute 26% of sales, sales to Türkiye Elektrik İletim A.Ş. constitute 10% of the total.

~USD400 mln contribution to revenues after investments

We expect ~USD110 mln greenfield investment may take place in 2024 and 2025… As the company had USD86 mln net cash, the financing need will be limited in our view.

i) We projected ~USD85 mln CAPEX and ~USD400 mln additional revenue in return. Beside the already announced 60% capacity expansion in distribution transformers, we may see some further capacity expansion in other product lines as high-capacity utilization ratios were already achieved.
ii) 14MW additional solar power capacity. After having invested USD10 mln already in 2023, the contribution to revenues is expected to be USD2 mln.
iii) Manufacturing of GIS (gas insulated switchgear) transformers. USD50 mln contribution to revenues is expected after USD25 capital expenditure.

In sum, these three main investment plans, including a new factory building that will improve the production efficiency, will likely add up around USD400 mln to revenues in 2024 and 2025 according to our view.

~8% CAGR revenue growth in USD terms in the next ten years

Long-term growth pattern is on track… The investment need for electricity generation and distribution is expected to remain strong both in Turkiye and abroad. Demand for electricity is expected to grow 3.3% per annum the next ten years in Turkiye. Not only the need for new grid, but also to improve the efficiency of the existing grid, the demand for transformers is likely to be strong going forward. Turkiye's neighborhood countries are also supposed to invest in electricity infrastructure as they are currently facing with disorder. Given that the global transformer market is expected to grow over 7.0% CAGR by 2032, we think that Astor Energy, a leading player among Turkiye's transformer manufacturers, may benefit around 8% CAGR growth rate starting from 2026 onwards after having completed the intensified investment plans in 2024 and 2025.

2025 P/E and EV/Ebitda multiples are 6.0x and 4.8x

Attractive forward multiples… Based on our 2024 and 2025 earnings forecasts the stock trades at 11.1x and 6.0x P/E multiples following the strong revenue expansion in these two years. On the other hand, respective EV/Ebitda multiples stand at 10.4x and 4.8x. These multiples include around 40% earnings growth in each year 2024 and 2025, following strong earnings growth rates of ~90% y/y in 2022 and ~76% y/y in 2023E.

Financial Forecasts at a Glance

Key Financial Forecasts in TRYmln

TRY mln	2021	2022	2023T	2024T	2025T
Revenues	3,154	7,392	14,046	28,091	56,182
Revenue Growth	117.7%	134.4%	90.0%	100.0%	100.0%
Export Share in Revenues	18%	21%	34%	42%	48%
Gross Profit	884	2,486	5,267	10,253	20,507
Gross Margin	28%	34%	38%	37%	37%
Operating Expenses	109	401	697	1,330	2,678
Operating Expenses Growth	39.0%	269.0%	73.8%	90.8%	101.4%
Operating Expenses / Revenues	1%	4%	4%	4%	4%
Depreciation	68	80	135	206	430
EBITDA	843	2,164	4,705	9,130	18,259
EBITDA Growth	108.7%	156.7%	117.4%	94.0%	100.0%
EBITDA Margin	26.7%	29.3%	33.5%	32.5%	32.5%
Other Income/Expense	-9	108	400	281	562
Pre-Tax Profit	555	1,978	5,570	11,705	21,641
Tax Expense	37	151	951	2,341	4,328
Net Income	518	1,827	4,619	9,364	17,313
Net Income Growth	129.5%	252.9%	152.8%	102.7%	84.9%
Net Income Margin	16%	25%	33%	33%	31%
Equity	1,099	3,311	9,226	18,589	35,902
Net Debt	976	770	-3,143	-8,246	-16,769
Net Debt / EBITDA	1.2	0.4	-0.7	-0.9	-0.9
Gross Debt	1,270	1,285	690	2,284	4,294
Net Working Capital	1,471	2,833	4,930	7,941	15,881
Net Working Capital/Revenues	47%	38%	35%	28%	28%
P/E			18.1	11.1	6.0
EV/EBITDA			17.1	10.4	4.8
P/B			9.1	5.6	2.9
RoAE	62%	83%	74%	67%	64%

Source: Company Data and PhillipCapital Research

Key Financial Forecasts in USDmln

USD mln	2021	2022	2023T	2024T	2025T
Revenues	354	446	591	815	1,254
Revenue Growth	71.3%	25.9%	32.5%	38.0%	53.7%
Export Share in Revenues	18%	21%	34%	42%	48%
Gross Profit	99	150	222	298	458
Gross Margin	3%	2%	2%	1%	1%
Operating Expenses	12	24	29	39	60
Operating Expenses Growth	9.4%	98.2%	21.2%	31.7%	54.8%
Operating Expenses / Revenues	1%	4%	4%	4%	4%
Depreciation	8	5	6	6	10
EBITDA	95	130	198	265	407
EBITDA Growth	64.2%	37.9%	51.6%	33.9%	53.7%
EBITDA Margin	26.7%	29.3%	33.5%	32.5%	32.5%
Other Income/Expense	-1	7	17	8	13
Pre-Tax Profit	62	119	234	340	483
Tax Expense	4	9	40	68	97
Net Income	58	110	194	272	386
Net Income Growth	80.6%	89.6%	76.4%	39.9%	42.1%
Net Income Margin	16%	25%	33%	33%	31%
Equity	123	200	388	540	801
Net Debt	110	46	-132	-239	-374
Net Debt / EBITDA	1.2	0.4	-0.7	-0.9	-0.9
Gross Debt	143	78	29	66	96
Net Working Capital	165	171	207	230	354
Net Working Capital/Revenues	47%	38%	35%	28%	28%
P/E			18.1	11.1	6.0
EV/EBITDA			17.1	10.4	4.8
P/B			9.1	5.6	2.9
RoAE	62%	83%	74%	67%	64%

Source: Company Data and PhillipCapital Research

Valuation

Valuation in USD mln

USD mln	2021	2022	2023T	2024T	2025T	2026T	2027T	2028T	2029T	2030T	2031T	2032T
Revenues	**354**	**446**	**591**	**815**	**1,254**	**1,335**	**1,404**	**1,494**	**1,600**	**1,749**	**1,912**	**2,089**
Revenue Growth	*71%*	*26%*	*33%*	*38%*	*54%*	*6%*	*5%*	*6%*	*7%*	*9%*	*9%*	*9%*
CoGS	255	296	369	518	796	861	905	964	1,032	1,128	1,233	1,348
Gross Profit	99	150	222	298	458	474	498	531	568	621	679	742
Gross Margin	*28%*	*34%*	*38%*	*37%*	*37%*	*36%*	*36%*	*36%*	*36%*	*36%*	*36%*	*36%*
Operating Expenses	12	24	29	39	60	59	66	74	82	91	102	113
Operating Expenses Growth	*9%*	*98%*	*21%*	*32%*	*55%*	*-1%*	*12%*	*11%*	*11%*	*12%*	*11%*	*11%*
Depreciation	8	5	6	6	10	12	17	21	26	30	35	39
EBITDA	**95**	**130**	**198**	**265**	**407**	**427**	**449**	**478**	**512**	**560**	**612**	**669**
EBITDA Margin	***26.7%***	***29.3%***	***33.5%***	***32.5%***	***32.5%***	***32.0%***	***32.0%***	***32.0%***	***32.0%***	***32.0%***	***32.0%***	***32.0%***
Operating Margin	25%	28%	33%	32%	32%	31%	31%	31%	30%	30%	30%	30%
Income from Other Operations	62	36	25	73	73	58	75	91	110	128	155	188
Other Income/Expense	-1	7	17	8	13	13	14	15	16	17	19	21
Pre-Tax Profit	62	119	234	340	483	486	521	562	613	675	751	839
Tax Expense	4	9	40	68	97	97	104	112	123	135	150	168
Net Profit	**58**	**110**	**194**	**272**	**386**	**389**	**417**	**450**	**490**	**540**	**601**	**671**
Net Profit Margin	*16%*	*25%*	*33%*	*33%*	*31%*	*29%*	*30%*	*30%*	*31%*	*31%*	*31%*	*32%*
Net Working Capital	165	171	207	230	354	378	397	423	453	495	541	591
Net Working Capital / Revenues	47%	38%	35%	28%	28%	28%	28%	28%	28%	28%	28%	28%
Net Debt (Cash)	110	46	-132	-239	-374	-416	-515	-625	-747	-892	-1,057	-1,242
Net Debt (Cash) / EBITDA	*1.16*	*0.36*	*-0.67*	*-0.90*	*-0.92*	*-0.97*	*-1.15*	*-1.31*	*-1.46*	*-1.59*	*-1.73*	*-1.86*

Cash Flow	**2021**	**2022**	**2023T**	**2024T**	**2025T**	**2026T**	**2027T**	**2028T**	**2029T**	**2030T**	**2031T**	**2032T**
Cash Opening	25	18	6	111	235	392	451	550	667	812	962	1,144
Net Earnings	58	110	194	272	386	389	417	450	490	540	601	671
Adjustments to Net Earnings	31	18	25	33	48	51	59	66	75	84	95	106
Depreciation	8	5	6	6	10	12	17	21	26	30	35	39
Change in Working Capital	-116	-94	-88	-87	-177	-82	-59	-63	-67	-74	-81	-88
Cash Flow from Core Operations	-26	34	131	218	257	358	417	453	497	551	615	689
Cash from Investment Operations	-21	-11	-30	-58	-50	-67	-70	-75	-80	-87	-96	-104
Free Cash Flow	**-47**	**22**	**102**	**160**	**207**	**292**	**346**	**379**	**417**	**463**	**520**	**585**
Change in Financial Debt	60	4	-21	35	28	-19	-17	-8	-7	-13	0	0
Dividends Paid	0	0	0	0	0	-161	-174	-189	-205	-228	-251	-279
Rights Issue	0	0	75	0	0	0	0	0	0	0	0	0
Cash from Other Financial Operations	-5	-35	-47	-65	-100	-107	-112	-120	-128	-140	-153	-167
Cash from Financial Operations	55	-31	54	35	28	-180	-191	-196	-212	-241	-251	-279
Total Cash Flow	8	-9	155	194	235	112	156	182	205	222	268	305
Cash at the End of the Quarter	33	9	161	306	470	504	607	732	873	1,034	1,230	1,450

USD/TRY Assumptions	**2021**	**2022**	**2023T**	**2024T**	**2025T**	**2026T**	**2027T**	**2028T**	**2029T**	**2030T**	**2031T**	**2032T**
USD/TRY, eop	13.33	18.70	29.44	40.00	50.00	57.50	62.50	70.00	75.25	80.89	86.96	93.48
USD/TRY, aop	8.91	16.59	23.78	34.45	44.82	53.66	59.97	66.18	72.63	78.07	83.93	90.22

Valuation Assumptions	
Debt Share	1%
Tax Rate	20.0%
Cost of Debt	15.00%
Risk Free Rate	6.50%
Equity Risk Premium	5.00%
Beta	1.10
CoE	12.00%
CoD	12.00%
WACC	**12.00%**

	2024T	2025T	2026T	2027T	2028T	2029T	2030T	2031T	2032T
WACC	12.00%	12.00%	12.00%	12.00%	12.00%	12.00%	12.00%	12.00%	12.00%
Discount Rate	100%	90%	80%	72%	64%	57%	51%	45%	41%
FCFF	160	186	234	248	242	238	236	236	237
Terminal Growth	1.00%								
NPV of FCFF, USD mln	2,017								
Terminal Value, USD mln	2,180								
Net Debt (Cash), USD mln	-239								
Target Mcap, USD mln	**4,436**								
Current Mcap, USD mln	3,448								
Upside, in USD terms	**29%**								
Target Price, TRY per Share @1Y FW USD/TRY: 40.00	**177.80**								
Current Price, TRY per share	103.80								
Upside, in TRY terms	**71%**								

Source: Company data and PhillipCapital Research

We applied USD based discounted cash flow valuation as Astor Energy's revenue generation is mostly linked hard currency. We used 3.50% risk free rate (US 10-year bond rate), 300 bps CDS to incorporate the country risk premium and 5 ppt equity risk premium. These assumptions brought the Cost-of-Equity to 12.00% with using Beta at 1.10 for the stock.

The long-term average US 10-year bond rate is 2.88% and the CDS is 295 in the last 20 years. These long-term averages provide us with some further upside potential.

When it comes to Cost-of-Debt we applied 15% Cost-of-Borrowing and 20% effective tax rate. So we end up with 12.0% cost-of-debt. Currently the company has net cash position of USD86 mln and gross financial debt-to-market capitalization stands at only 0.6%. Therefore, we work with 12.00% WACC.

We conservatively used 1.0% growth rate in perpetuity in USD terms.

Peer Comparison, USD mln

Company	Ticker	Country	Revenue	EBITDA	Net Income	Trailing P/E	Forward P/E	EV/EBITDA
General Electric Company	GE	US	83.81	12.03	10.59	13.40	27.70	8.78
Siemens Energy AG	ENR	Germany	34.09	-2.50	-4.96	N/A	N/A	-5.69
Mitsubishi Electric Corporation	6503	Japan	35.87	3.81	1.79	16.48	15.02	6.94
ABB Ltd	ABBN	Switzerland	37.33	6.18	4.67	20.07	19.96	11.86
Schneider Electric S.E.	SU	France	39.11	7.39	4.36	24.78	20.49	15.29
Toshiba Tec Corporation	6588	Japan	3.66	0.23	-0.04	64.34	N/A	4.16
Eaton Corporation plc	ETN	US	22.61	4.65	2.99	32.06	23.81	22.03
CG Power and Industrial Solutions Limited	CGPOWER	India	0.91	0.13	0.11	77.28	N/A	54.44
Voltamp Transformers Limited	VOLTAMP	India	0.18	0.03	0.03	26.83	N/A	19.87
DAIHEN Corporation	6622	Japan	1.25	0.13	0.08	14.03	N/A	9.11
Hyosung Heavy Industries Corporation	298040	South Korea	2.99	0.21	0.05	18.72	N/A	9.37

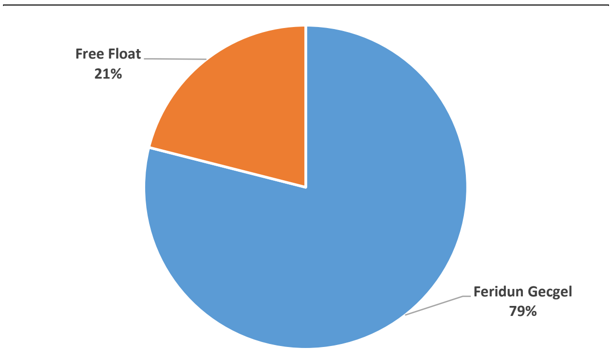
Source: Bloomberg

Shareholder Structure and Trading Pattern after IPO

Astor Energy was listed at Borsa Istanbul in mid-January 2023. IPO was a hybrid model of 62 million share sale of main shareholder, Mr. Feridun Gecgel, and capital increase of 17.41%. Currently, free float ratio is 21% and Mr. Gecgel holds majority stake with 79%.

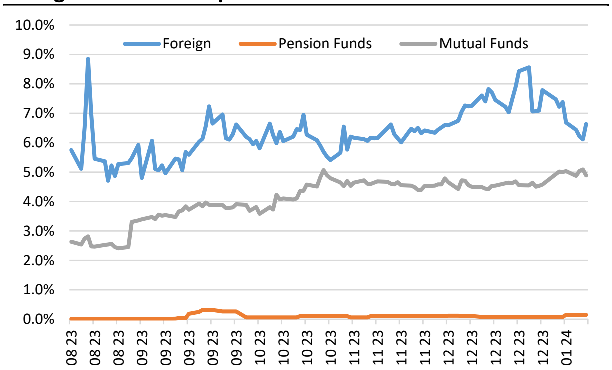
We observed some increase both in foreign investors' and mutual funds' interest since 2023 summer. Foreign investors currently hold 6.73% of free float and local mutual funds hold 4.85% recently. Local pension funds hold a tiny 0.15% of free float. We expect to see rising interest from corporate investors going forward as Astor Energy delivers strong set of financials.

Shareholder Structure



Source: Company Data

Foreign and Local Corporate Investors' Share in Free Float

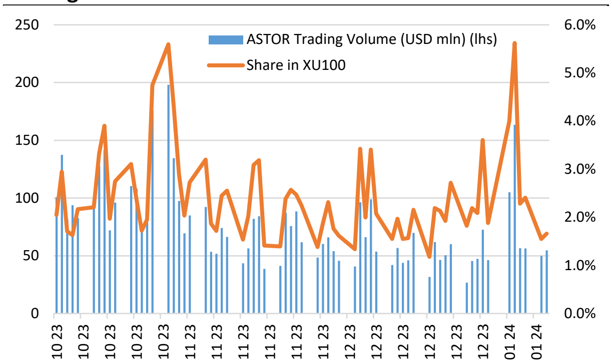


Source: Matriks based on MKK Data

Dominated by local retail investors trading volume remained strong. Average daily trading volume stood at USD76 mln in the last three months corresponding to 2.4% of the average daily trading volume at BIST-100.

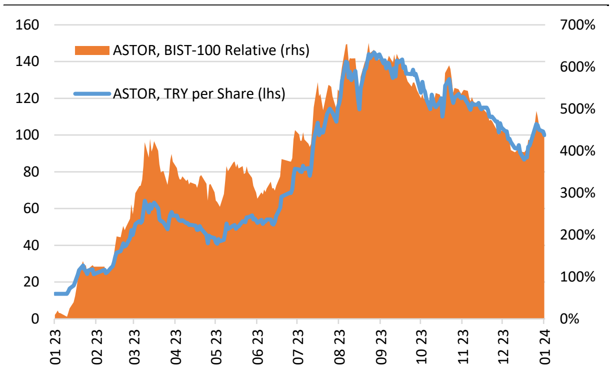
ASTOR delivered strong share price performance following the IPO of the company early next year. Considering Turkiye's intensive investments in renewable energy to diminish the energy dependency, refurbishment of the existing grid to improve the efficiency of the electricity distribution, the organic sustainable growth of the demand for electricity, the need for reconstruction of the earthquake region and finally the infrastructure needs in neighborhood countries call for continuity of the revenue growth in the coming years.

Trading Volume



Source: Rasyonet

Share Price Performance



Source: Matriks and Rasyonet

Current Financials and 4Q23 Estimates

9M23 Financials in Brief

Astor Energy generated USD392 mln sales revenue in 9M23 with 38% gross profit margin and generated USD129 mln Ebitda resulting in 32.8% Ebitda margin. Following the IPO in early 2023 the company had USD86 mln net cash position as of 9M23. Besides, the company generated USD43 mln FCF in 9M23. The Net Working Capital stood at USD152 mln or 28% of revenues according LTM 9M23 financials.

Cash and Financial Debt

Astor Energy had TRY1,375 mln cash (mostly composed of time deposits) and TRY1,608 mln financial investment composed of mutual funds.

Cash & Cash Equivalents, TRY mln, 9M23

Cash	**0**
Demand deposits	**361**
TL	0
FX	361
Time Deposits	**1,014**
TL	678
FX	195
Currency Protected Deposit Scheme	141
Mutual Funds	**1,608**
Total Cash & Cash Equivalents	**2,983**

Source: Company data and PhillipCapital Research

Cash & Cash Equivalents, TRY mln, 9M23

Short and long term borrowings	
Short-term bank borrowings	319
Short-term portion of long-term bank borrowings	165
Short-term finance lease payables	11
Short-term deferred finance lease borrowing costs (-)	0
Short-term financial liabilities	**495**
Long-term bank borrowings	122
Long-term finance lease payables	1
Long-term deferred finance lease borrowing costs (-)	0
Long-term financial liabilities	**123**
Total financial liabilities	**618**

Repayment terms of financial liabilities	
To be paid within 1 year	495
Payable in 1-2 years	61
Payable in 2-3 years	62
3 years and above	0
Total	**618**

Original currency balances and interest rates of bank borrowings	Weighted average effective interest rate (%)	Original currency	TL
Bank borrowings and finance lease payables:			
TL	9.80%	368	368
Euro	4.65%	9	250
Total			**618**

Source: Company data and PhillipCapital Research

Net FX Position

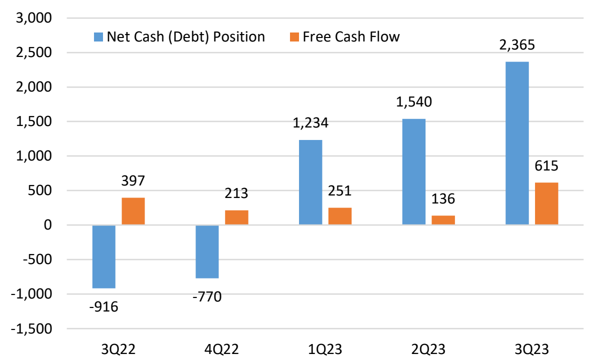
The company, generating one third of its revenues from exports, had USD85.3 mln (TRY2,335 mln) net long FX position as of 9M23. That reported in footnotes every 10% depreciation in Turkish Lira has ~TRY234 mln positive impact on P&L.

Astor Energy recorded USD6.0 mln (TRY133 mln) net FX gain from its core operations in 9M23.

On the financial side the company recorded only USD0.42 mln (TRY9.3 mln) net FX loss in 9M23.

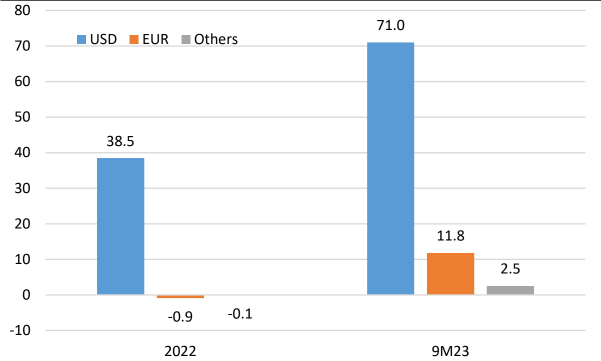
We expect the company to finance its investments partly from its own resources. Therefore, net long FX position may diminish by 2024YE.

Net Cash (Debt) and Free Cash Flow (TRY mln)



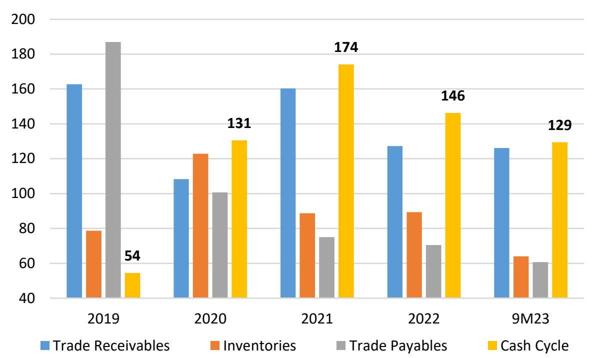
Source: Company Data

Net FX Position



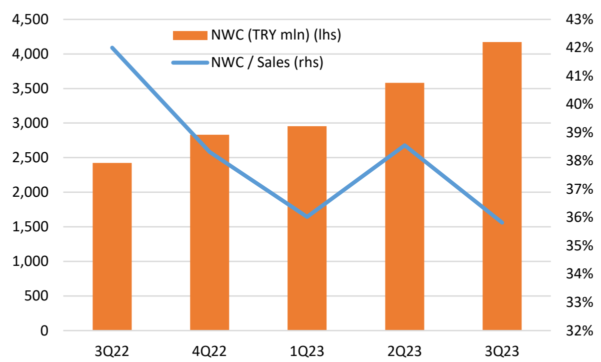
Source: Company data and PhillipCapital Research

Cash Conversion Cycle (days)



Source: Company data and PhillipCapital Research

Net Working Capital



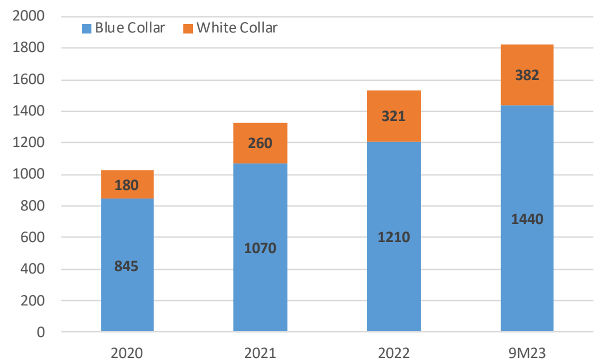
Source: Company data and PhillipCapital Research

Operating Expenses

Astor Energy operates with 1,822 employees as of 9M23. The company has an inhouse R&D center that employs 117 employees, 97 of whom are engineers. More than 88% of the white-collar employees have bachelor's degree and higher.

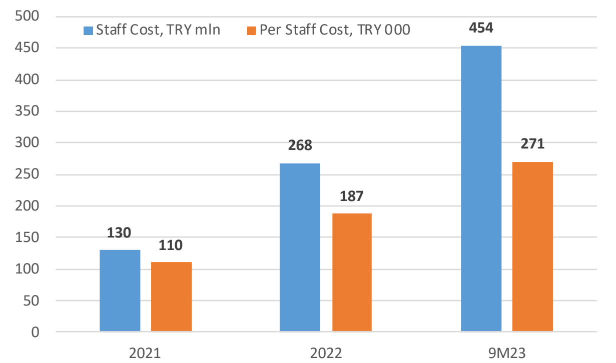
The company has been running its R&D activities since 2009 in order to invest in technical expertise to improve its current product gam and develop new products, by obtaining an R&D center certificate in 2016. That said by the company 97 engineers are employed in R&D center, composing 25% of total white-collar workforce. Astor Energy spent TRY125 mln and TRY150 mln for R&D expenditures in 2022FY and 9M23 respectively.

Staff Size



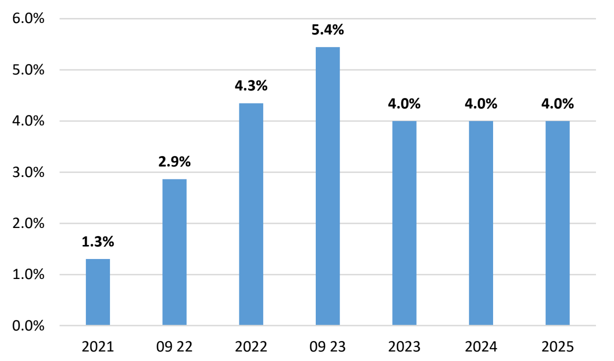
Source: Company Data

Staff Cost



Source: Company Data

Operating Expenses / Revenues



Source: Company Data and PhillipCapital Research

4Q23 Expectations

We estimated USD199 mln revenues in 4Q23, bringing 2023FY revenue to USD591 mln, yielding in 35.3% y/y growth rate in USD terms. We expect a slight drop in gross profit margin but thanks to the deceleration operating expenses we expect a slight improvement in quarterly Ebitda margin to 34.8%, ending up 2023FY at 33.5% Ebitda margin. Astor Energy's CoGS has strong correlation with global metal prices, there is some upside risk to our Ebitda estimate as LME Index skewed downwards in 4Q23.

Near terms estimates both in USD and TRY terms

USD mln	4Q22	1Q23	2Q23	3Q23	4Q23E	9M22	9M23	y/y	2022	2023E	y/y
Revenues	**149**	**100**	**135**	**156**	**199**	**288**	**392**	**36.0%**	**437**	**591**	**35.3%**
Gross Profit	64	31	60	60	72	80	150	88.2%	144	222	53.9%
Gross Margin	*43.2%*	*30.7%*	*44.2%*	*38.1%*	*35.9%*	*27.7%*	*38.3%*		*33.0%*	*37.5%*	
Ebitda	**54**	**26**	**51**	**51**	**69**	**71**	**129**	**80.1%**	**125.5**	**197.9**	**57.6%**
Ebitda Margin	*36.4%*	*26.0%*	*37.9%*	*32.9%*	*34.8%*	*24.8%*	*32.8%*		*28.8%*	*33.5%*	
Net Profit	**39**	**28**	**53**	**53**	**61**	**68**	**134**	**96.1%**	**107**	**194**	**81.2%**
Net Margin	*26%*	*28%*	*39%*	*34%*	*30%*	*24%*	*34%*		*25%*	*33%*	
Net Cash/Debt	-41	64	60	86	107	-49	86		-41	107	
FCF	11	13	7	23	50	6	43		17	92	

TRY mln	4Q22	1Q23	2Q23	3Q23	4Q23E	9M22	9M23	y/y	2022	2023E	y/y
Revenues	**2,766**	**1,894**	**2,798**	**4,191**	**5,163**	**4,626**	**8,883**	**92.0%**	**7,392**	**14,046**	**90.0%**
Gross Profit	1,196	581	1,236	1,598	1,853	1,290	3,414	164.7%	2,486	5,267	111.9%
Gross Margin	*43.2%*	*30.7%*	*44.2%*	*38.1%*	*35.9%*	*27.9%*	*38.4%*		*33.6%*	*37.5%*	
Ebitda	**1,007**	**493**	**1,061**	**1,377**	**1,775**	**1,157**	**2,931**	**153.2%**	**2,164**	**4,705**	**117.4%**
Ebitda Margin	*36.4%*	*26.0%*	*37.9%*	*32.9%*	*34.4%*	*25.0%*	*33.0%*		*29.3%*	*33.5%*	
Net Profit	**727**	**522**	**1,093**	**1,428**	**1,576**	**1,100**	**3,043**	**176.6%**	**1,827**	**4,619**	**152.8%**
Net Margin	*26%*	*28%*	*39%*	*34%*	*31%*	*24%*	*34%*		*25%*	*33%*	
Net Cash/Debt	-770	1,234	1,540	2,365	3,143	-916	2,365		-770	3,143	
FCF	213	251	136	615	1,414	157	1,002		370	2,416	

Source: Company Data and PhillipCapital Research

We also penciled in a slight improvement in Net Working Capital-to-Sales ratio from 35.8% at end of 9M23 to 35.1%, resulting in an improvement in Free Cash Flow in the final quarter of the year. Based on these assumptions Astor Energy's Net Cash position improves from USD86 mln in 9M23 to USD107 mln as of 2023YE.

Thanks to the TRY1.85 bln IPO proceed and the TRY2.4 bln Free Cash Flow, the company will likely have enough capital to finance the necessary capital expenditures that we discuss throughout the report.

Astor Energy: Business, Outlook and Investment Plans

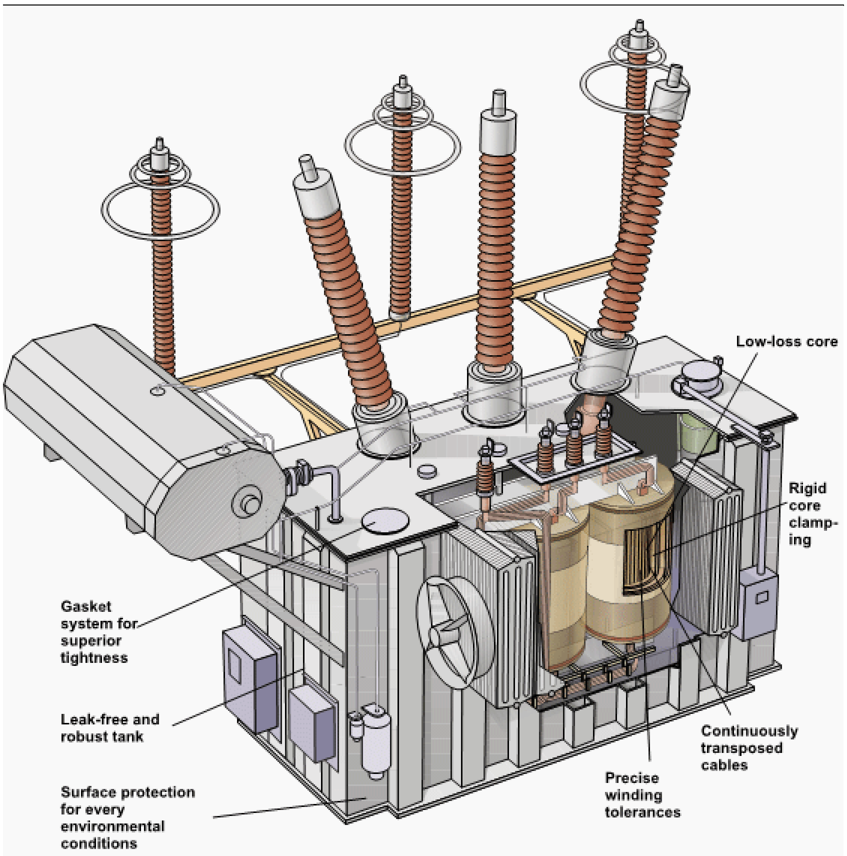
Astor Energy manufactures four main products: Power transformers, distribution transformers, MV/HV equipment and the mechanical factory that feeds these capacities. It has a capacity utilization rate of 65% for power transformers, 97% for distribution transformers, 96% for MV and HV equipment. The mechanical factory can produce machining needs of the company about 90-95% of distribution transformers, 85-90% of power transformers, 95-100% of MV switching products, and 65-70% of HV switching products.

What are Electrical Transformers?

Electrical transformers are machines that transfer electricity from one circuit to another with changing voltage level but no frequency change. Today, they are designed to use AC supply, which means that fluctuation in supply voltage is impacted by the fluctuation in the current. So, an increase in current will bring about an increase in the voltage and vice versa.

Transformers help improve safety and efficiency of power systems by raising and lowering voltage levels as and when needed. They are used in a wide range of residential and industrial applications, primarily and perhaps most importantly in the distribution and regulation of power across long distances.

Basics of Electrical Transformers



Source: https://www.dfliq.net/blog/the-basics-of-electrical-transformers/

Power transformer: Typically used to transmit electricity and has a high rating.

Distribution transformer: This electrical transformer has a comparatively lower rating and is used to distribute electricity.

Electrical Transformer – Efficiency and Losses

An electrical transformer does not employ any moving parts to transfer energy which means that there is no friction and hence no windage losses. However, electric transformers do suffer from negligible copper and iron losses. Copper losses occur due to heat loss during the circulation of currents around the copper windings, resulting in loss of electrical power. This is the greatest loss in the operation of an electrical transformer. Iron losses are caused by the lagging of the magnetic molecules that lie within the core. This lagging happens in response to the alternating of the magnetic flux which results in friction and this friction produces heat which leads of loss of power in the core. This loss can be greatly reduced if the core is constructed from special steel alloys.

The intensity of power loss determines the efficiency of an electrical transformer and it is represented in terms of power loss between the primary and secondary windings. The resulting efficiency is then calculated in terms of ratio of the power output at the secondary winding to the power input at the primary winding. Ideally, the efficiency of an electrical transformer is anywhere between 94% to 96%

Why does Turkiye need for infrastructure?

By the end of 2022, 46% of Turkiye's total electricity capacity and 58% of its gross electricity generation came from fossil fuels. As a country that imports almost all of its oil and natural gas from fossil fuels, Turkiye's dependence on these resources causes it to be directly affected by price increases in global markets.

In the first half of 2023, the earthquake and flood disasters once again highlighted the vital importance of energy supply. These disasters have once again highlighted the need for resilient electricity transmission and distribution lines, and the necessity of planning with the perspective of highly resilient infrastructures.

Turkiye's total installed capacity, which was around 27.3 gigawatts (GW) in 2000, reached 105.7 GW by the end of September 2023. Until 2022, incentives for power plants generating electricity from renewable energy sources and domestic resources played an important role in this increase. The upward trend in Turkiye's total installed capacity continues. In the period between 2012 and 2022, the average annual net increase in installed capacity was 4.6 GW. In this period, the increase in installed capacity was higher than the increase in total electricity demand, and one of the main reasons for this is considered to be the incentives given to renewable energy power plants. The average annual installed capacity of renewable power plants commissioned between 2012 and 2022 was around 3.3 GW.

Development of Renewable Energy Capacity

Source (MW)	2015	2016	2017	2018	2019	2020	2021	2022	2022/10	2023/10
Hydro	25,868	26,682	27,273	28,291	28,503	30,985	31,493	31,571	31,568	31,596
Wind	4,498	5,751	6,516	7,005	7,591	8,832	10,607	11,396	11,303	11,643
Solar	310	833	3,421	5,063	5,995	6,667	7,816	9,425	9,153	11,120
Geothermal	624	821	1,064	1,283	1,515	1,613	1,676	1,691	1,686	1,691
Biomass	345	467	575	739	1,163	1,485	2,035	2,309	2,211	2,440
Total	**31,645**	**34,554**	**38,849**	**42,381**	**44,767**	**49,582**	**53,627**	**56,393**	**55,921**	**58,491**

Source: TEIAS

Targeted Installed Capacity Under the Turkiye National Energy Plan

Resource	2035 (GW)	Share in Renewable Energy Sources (%)	Share in Total (%)
Solar	52.9	43.1%	27.9%
Hydro	35.1	28.6%	18.5%
Wind	29.6	24.1%	15.6%
Geothermal and Biomass	5.1	4.2%	2.7%
Renewables Total	**122.7**	**100.0%**	**64.7%**
Resource	**2035 (GW)**	**Share in Total Gas, Coal and Nuclear (%)**	**Share in Total (%)**
Gas	35.5	53.0%	18.7%
Coal	24.3	36.3%	12.8%
Nuclear	7.2	10.7%	3.8%
Grand Total	**189.7**	**100.0%**	**100.0%**

Source: TEIAS

Development of Electricity Generated from Renewable Energy Sources

Resource (TWh)	2015	2016	2017	2018	2019	2020	2021	2022	2022/10	2023/10
Hydro	67.1	67.2	58.2	59.9	88.9	78.1	55.9	66.8	60.2	52.7
Wind	11.7	15.5	17.9	19.9	21.7	24.8	31.3	34.9	29.1	27.5
Solar	0.1	1.0	2.9	7.8	9.2	11.0	13.9	16.9	18.6	16.6
Geothermal	3.4	4.8	6.1	7.4	9.0	10.0	10.8	11.1	8.4	8.3
Biomass	1.8	2.4	3.0	3.6	4.6	5.7	7.8	9.5	7.5	7.3
Total	**84.1**	**91.0**	**88.1**	**98.7**	**133.4**	**129.6**	**119.8**	**139.2**	**123.8**	**112.5**

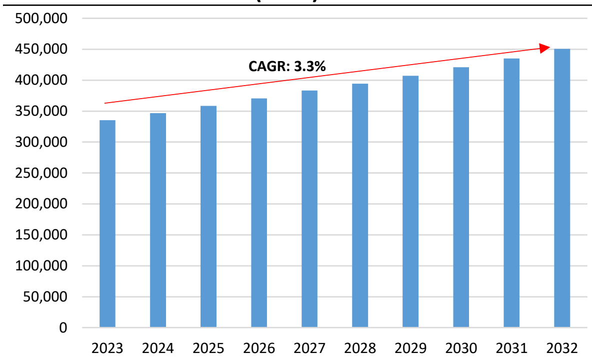
Source: TEIAS

Targeted Electricity Generation Under the Turkiye National Energy Plan

Electricity Generation	2035 (TWh)	Share in Renewable Resources (%)	Share in Total (%)
Wind	90.1	32.4%	17.7%
Hydro	87.9	31.6%	17.3%
Solar	84.0	30.2%	16.5%
Geothermal and Biomass	16.2	5.8%	3.2%
Renewables Total	**278.2**	**100.0%**	**54.8%**
Electricity Generation	**2035 (TWh)**	**Share in Total Thermal and Nuclear (%)**	**Share in Total (%)**
Thermal	173.7	75.7%	34.2%
Nuclear	55.8	24.3%	11.0%
Grand Total	**507.7**	**100.0%**	**100.0%**

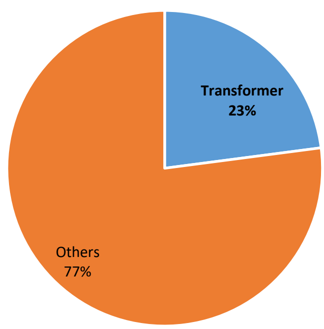
Source: TEIAS

TEIAS Demand Forecasts (GWh)



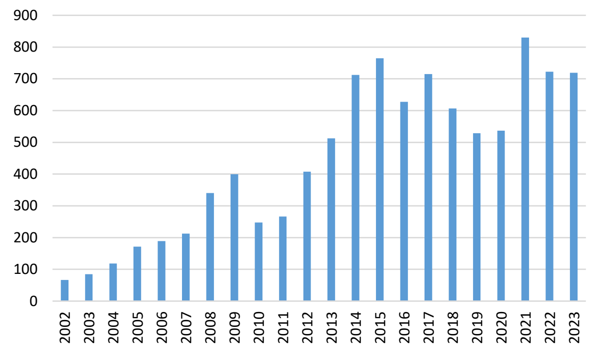
Source: TEIAS 2023-2032 Demand Forecast Report

Share of Transformers in TEIAS Investments, 2022



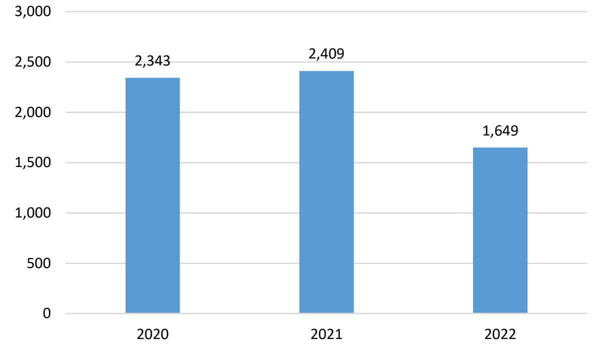
Source: Energy Market Regulatory Authority

TEIAS Investments (USD mln)



Source: TEIAS and PhillipCapital Research

Investments of Electricity Distribution Companies (USD mln)



Source: Energy Market Regulatory Authority and PhillipCapital Research

Astor Energy's long-term growth pattern is on track

i) Growing electricity demand in Turkiye

ii) Refurbishment of Turkiye's electricity grid to increase efficiency of distribution

iii) Renovation of damaged infrastructure, electricity grid and transformers of Ukraine. Besides, there is an ongoing business relationship of the company with Iraq

iv) Astor Energy is already done its order book for 2024, bringing the backlog to ~USD800 mln

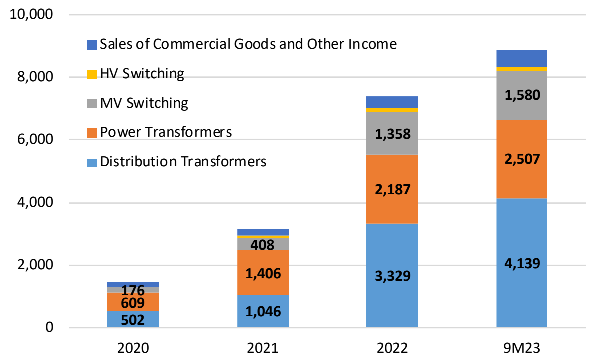
The investment need for electricity generation and distribution is expected to remain strong both in Turkiye and abroad. Demand for electricity is expected to grow 3.3% per annum the next ten years in Turkiye. Not only the need for new grid, but also to improve the efficiency of the existing grid, the demand for transformers is likely to be strong going forward. Turkiye's neighborhood countries are also supposed to invest in electricity infrastructure as they are currently facing with disorder. Given that the global transformer market is expected to grow over 7.0% CAGR by 2032, we think that Astor Energy, a leading player among Turkiye's transformer manufacturers, may benefit around 8% CAGR growth rate starting from 2026 onwards after having completed the intensified investment plans in 2024 and 2025.

The backlog of the company reached ~USD800 mln as of 2023YE. That said by the company order book is completed for 2024, which means that the company will have no issues to sell its products.

When we look at the company's net sales breakdown, distribution transformers took the largest share with 47% as of 9M23, while power transformers accounted for 28% of net sales, MV switching products made up 18%, and HV switching products made up 1%.

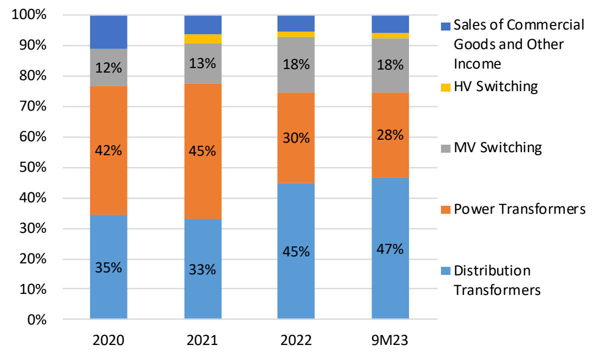
In terms of customer groups, the largest share in net sales is export markets with 34%, while sales to electricity distribution companies constitute 15% of total net sales. While dealers constitute 26% and industrial facilities %14 of sales, sales to Turkiye Elektrik Iletim A.S. constitute 10% of the total.

Revenue by Product (TRY mln)



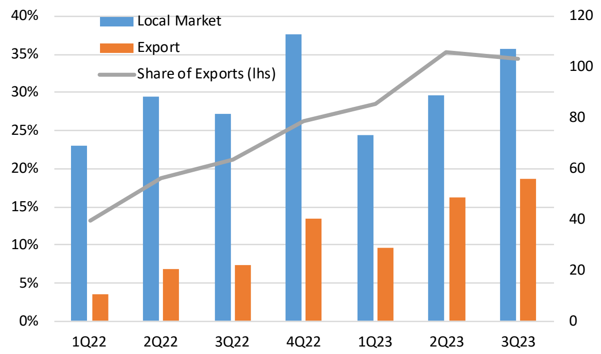
Source: Company Data

Revenue Breakdown by Product



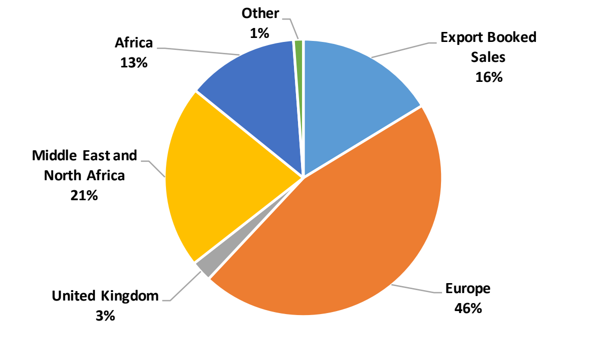
Source: Company Data

Share of Exports have been Increasing (USD mln)



Source: Company Data

Breakdown of Exports by Region, as of 9M23

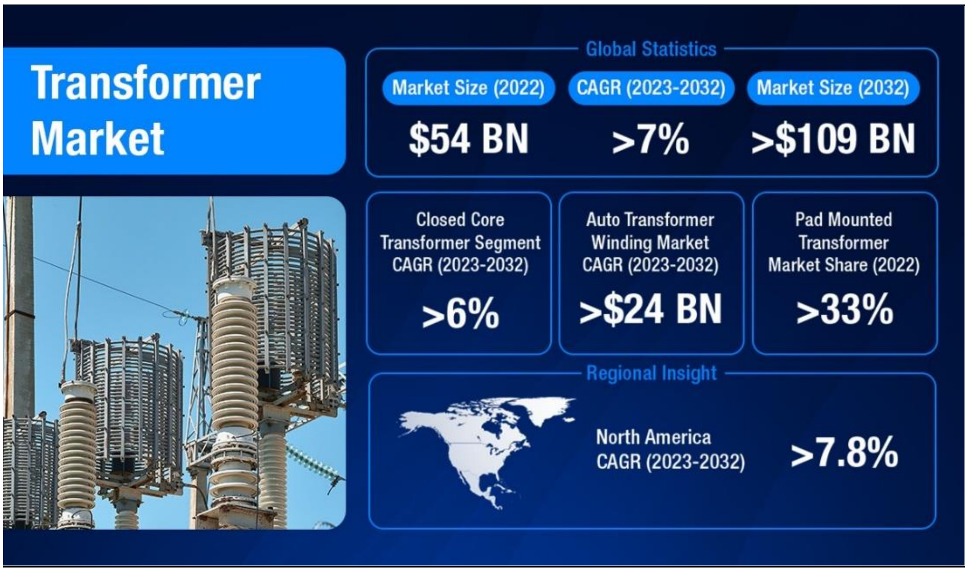


Source: Company Data

According to Global Markets Insights, global Transformer market size was USD54 bln in 2022 and it is expected to reach more than USD109 bln by 2032 with higher than 7.0% CAGR. When it comes to European Transformer market the size was USD9.5 bln according to Global Markets Insights and it is expected to reach USD21.9 bln by 2032 with 8.7% CAGR. Global Power Transformer Market, on the other hand, was USD19 bln in 2022 and expected to grow more than 6.5% CAGR reaching to USD37.5 bln.

The main drivers of growth are expected to be i) refurbishment demand for given infrastructure, ii) rising infrastructural spending, iii) large-scale renewable integration, iv) increasing demand for electricity, v) escalating demand for reliable and continuous electricity and vi) growing investment toward expansion of electricity networks. When it comes to Europe the main sources of demand are expected to be growing deployment of renewable energy and upgrading of existing grid network.

Global Transformer Market Growth Forecast



Source: *https://www.gminsights.com/industry-analysis/transformer-market*

Europe Transformer Market Growth Forecast

Source: https://www.gminsights.com/industry-analysis/europe-transformer-market

Eight thousand transformers were damaged or disconnected in Ukraine

Ukraine may become an important export market for Astor Energy once piece is reached with Russia. As we discussed below there may be significant to refurbishment of the electricity grid in Ukraine. Astor Energy already signed a sales contract amounting to USD32 mln in May 2023.

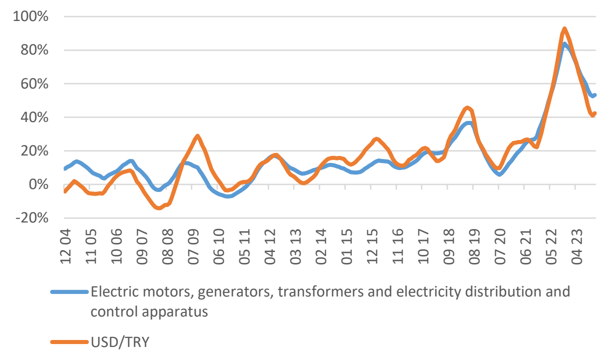
The Ukrainian electricity transmission system includes 23,600 km of overhead lines and 141 substations with a voltage of 110–750 kV operated by the Ukrainian transmission system operator (TSO) National Energy Company (NEC) "Ukrenergo". 25% of transmission substations were located in the territories temporarily occupied by Russia before February 24, 2022 and 12% were occupied after. Due to Russian targeted attacks on transmission system infrastructure, about 43% transmission grids and about 50 % of transmission substations were destroyed or damaged. The electricity distribution systems in Ukraine include more than 800 thousand km of overhead and cable lines with 0.4–150 kV voltage and about 200,000 6-150 kV transformer substations operated by 32 distribution system operators (DSOs). As of the beginning of January 2023, more than one thousand overhead lines (6-150 kV) and more than eight thousand transformers (6-150 kV) were damaged or disconnected due to continuous shelling and hostilities (not including power infrastructure disconnected due to emergencies). At the beginning of 2022, there were 17.7 mln electricity consumers in Ukraine, including 17.2 mln households and 0.5 mln commercial customers. As a result of hostilities, electricity demand decreased by 30-35% compared to 2021.

CoGS impacted from global metal prices

The producer price inflation in transformers has a great correlation with currency volatility. It is obvious that producers can easily pass the cost arising from currency volatility to their product prices. Given the strong demand conditions we do not expect Astor Energy to face with a material pricing problem going forward.

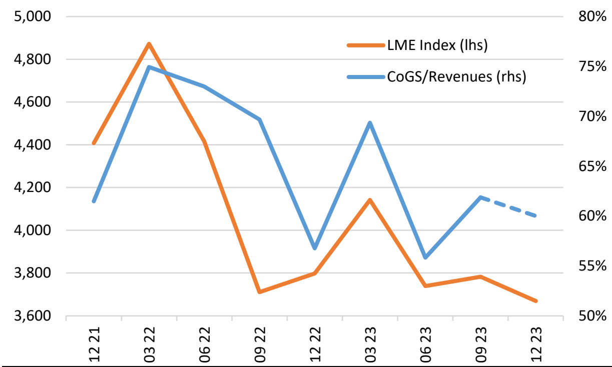
As CoGS is mostly based on raw material prices changes in global metal prices and CoGS/Revenues (or gross profit margin) are highly correlated. Therefore, we may see stronger than expected gross profit margin in 4Q23, creating an upside potential to our earnings forecasts. Due to slow global economic activity, we may see metal prices to be under pressure going forward paving way for stronger gross profit margin in 2024FY in our view.

Product prices can timely response currency volatility



Source: TUIK, CBRT and PhillipCapital Research

CoGS Depends on Global Metal Prices



Source: Company Data, Trading Economics and PhillipCapital Research

Investment Plans of Astor Energy

Nearly USD110 mln greenfield investment may take place in 2024 and 2025 according to our expectations. The company already announced an investment plan in July to expand the capacity of distribution transformer production by 60%, as it operates with 97% capacity utilization as of 9M23. We may see some further capacity expansion in switching equipment due to 96% capacity utilization as of 9M23. According to the company mechanical factory serves 90-95% of distribution transformers, 85-90% of power transformers, 95-100% of MV switching equipment and 65-70% of HV switching equipment. Therefore, we expect a capacity expansion in mechanical factory too. These investments are supposed to meet the soaring demand in our view. The company had USD86 mln net cash position as end of 9M23 that enables the company to finance the investment expenses mostly from internal sources. Following these investments become active we assumed additional USD400 mln to revenues.

i) **We projected ~USD85 mln CAPEX and ~USD400 mln additional revenue in return**. 60% capacity expansion in distribution transformers was already announced by the company. As the company is done with its order book for 2024, we projected around 50-60% capacity expansion in other product lines as well. The company announced a land acquisition in Ankara Industrial Zone. We think this land plot to be developed as production facility in ~2024, leading to capacity increase in all product lines. We assumed ~USD85 mln capital expenditure for these anticipated investments. In return we projected ~USD400 mln additional revenue.

ii) **14MW additional solar power capacity**. After having invested USD10 mln already in 2023, the contribution to revenues is expected to be USD2 mln. That guided by the company every 1MW capacity will likely produce 28k MWh electricity. Astor Energy expects TRY67.5 mln savings thanks to Bala Solar Power Plant investment and sell the electricity to grid exceeding its own need. Moreover, the company expects to become carbon positive, which is likely be positive in couple of years, enhancing the export potential.

Contribution to Revenue by Product Group

Bala Solar Power Plant Investment	
Capacity	14 MW
Investment Amount, USD mln	10.0
Contribution to Revenue, USD mln	2.2
Profit Before Tax, USD mln	2.0

Source: Company data

iii) **Manufacturing of GIS (gas insulated switchgear) transformers. USD50 mln contribution to revenues is expected after USD25 capital expenditure**.

Contribution to Revenue by Product Group

GIS Investment Plan	
Land Size	6.000 m²
Capital Expenditure, USD mln	25
Contribution to Revenue, USD mln	50
Contribution to Pre-Tax Net Income, USD mln	7.5

Source: Company Data and PhillipCapital Research

Astor Energy started to cooperate with Sieyuan Electric Co Ltd. From China in 2020. R&D studies were carried out for 170 kV High Voltage Circuit Breakers under the Astor brand, design and prototype production were realized and prototype product type tests were completed in June 2020 in international laboratories and included in the transmission system of Turkish Electricity Transmission Company (TEIAS) as the first domestic manufacturer.

Both companies signed a contract in early December last year for mass production of "High Voltage Gas Insulated Switchgear Equipment" (GIS) at 170 kV - 245 kV under the Astor brand name. That guided by Astor Energy the investment cost foreseen within the scope of the contract is ~USD25 mln including R&D studies, technology transfer, land, production facility, and test center construction.

With the completion of the investments in 2H24 and reaching full capacity in 2025, this production is expected to contribute positively to an annual revenue of ~USD50 mln.

Thanks to the inclusion of this product group, which has high added value and provides a significant cost advantage for investors, the existing product range of Astor Energy will contribute significantly to the further expansion of its customer portfolio in Turkiye and abroad.

GIS Type Substations can be installed on a much smaller area (~20k sqm for 170 kV AIS Substations and only 5k sqm for 170 kV GIS Substations) compared to Open Switchgear Type Substations (AIS) and provide significant savings in land costs/size, they are compulsorily preferred in places with land problems or where costs are high and their usage area is becoming widespread day by day.

With this investment;

GIS type power transformers, which are one of the main equipment of "Gas Insulated Substations" (GIS), which are becoming increasingly widespread, are already manufactured by Astor Energy. With the production of High Voltage Gas Insulated Switchgear Equipment, which is the other main equipment of GIS Substations and which is not yet manufactured in Turkiye, all of the main electrical equipment in the facility of GIS Type Substations are also manufactured.

Since the mentioned "High Voltage Gas Insulated Switchgear" is also among the main equipment of Mobile Substations, with this product, all of the main electrical equipment of 170 kV-245 kV Mobile Substations will be produced by Astor Energy.

In sum, these three main investment plans, including a new factory building that will improve the production efficiency, will likely add up around USD400 mln to revenues in 2024 and 2025 according to our view.

EV Charging Station Market

Astor Energy has received an EV charging network operation license from EMRA as of June 2022. The company under the "Astor Sarj" brand invested USD10 mln in 2023. The number of sockets has reached 314 in 37 provinces of Turkiye. Since the sector and investment process are new the income from charging operation is negligible and will become significant as of 2025.

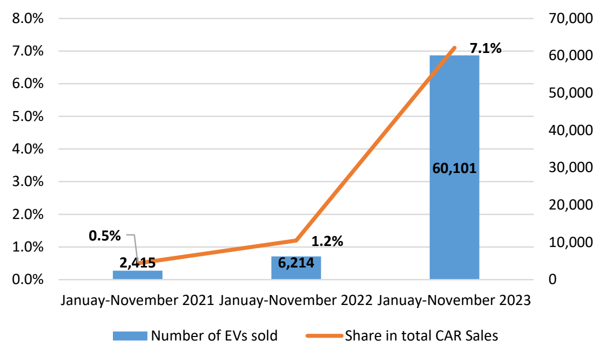
The company simply sells electricity to end users. The number of stations will likely grow fast in tandem with the soaring number of EVs. The number of stations will likely grow fast in tandem with the soaring number of EVs.

In charging stations Astor Energy's equipment is used. Therefore, the company sells its equipment to other companies manufacturing charging stations. Almost 2/3 of the cost of a charging station is composed of Astor Energy's equipment. We see the revenue from this business under the revenue from transformers sale.

According to Global Markets Insights, EV Charging Station market reached to USD26.3 bln in 2022 globally and expected to soar to more than USD280 bln by 2032 with a CAGR of 24.7%. That said by Global Markets Insights acceleration in EV adoption, stringent regulatory framework pertaining emissions and technological advancements are likely to be the main drivers of the growth in EV Charging Station market. The challenges ahead of the industry are the high installation cost and the absence of robust power infrastructure.

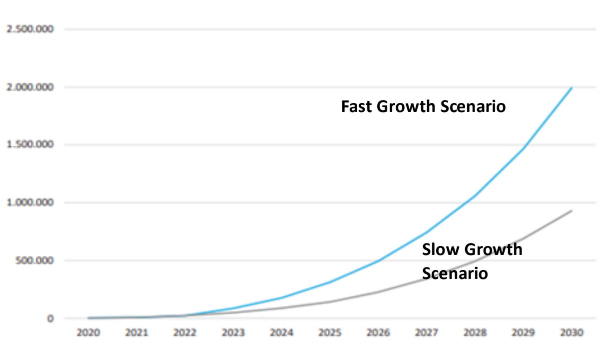
EVs are new to Turkiye but the number of EVs have been expanding significantly in the last couple of years. According to ODD 60,101 EVs were sold in January-November 2023, which was only 6,214 a year ago. So the share of EVs in total car sale reached 7.1% in January-November 2023 from 1.2% a year ago. TOGG, Turkiye's own brand in car manufacturing, run with electricity and mass production will accelerate starting from 2024. Moreover, both the central government and local municipalities have given priority to employ EVs for public transport. Therefore, the need for EV Charging stations will likely expand significantly in the coming years.

Electric Vehicle Sales in Turkiye



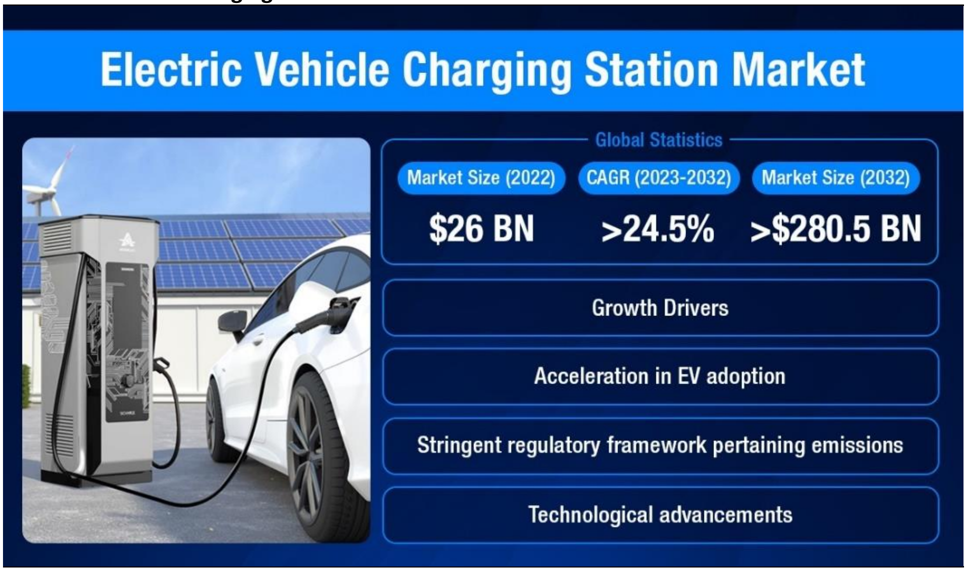
Source: Automotive Distributors' and Mobility Association

Electric Vehicle Market Forecast



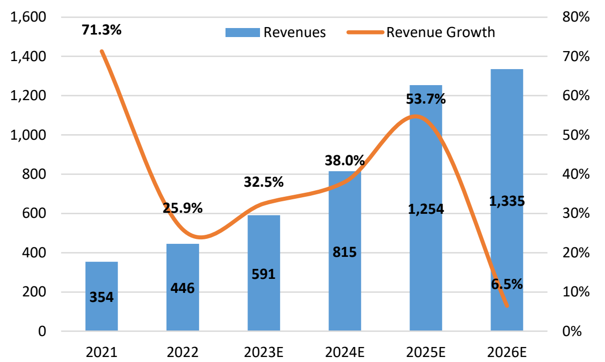
Source: Sabanci University Istanbul International Center for Energy and Climate

Electronic Vehicle Charging Station Market



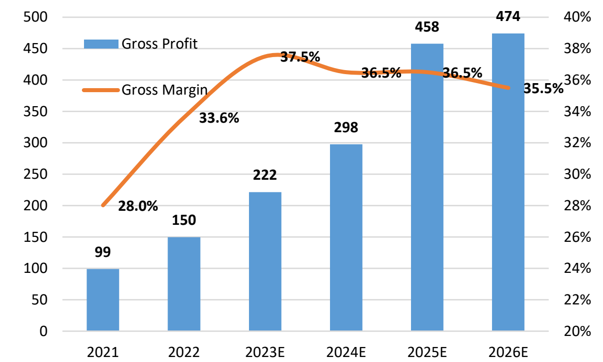
Source: https://www.gminsights.com/industry-analysis/electric-vehicle-charging-station-market

Revenue Forecasts, USD mln



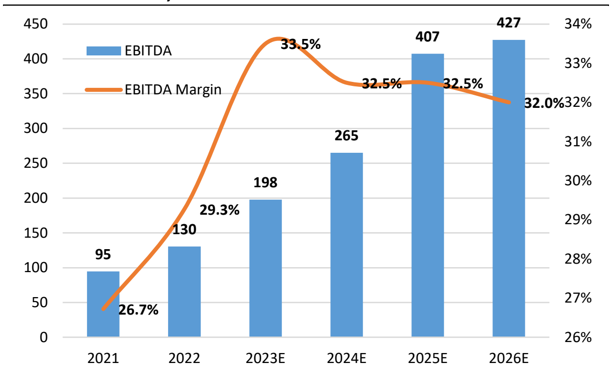
Source: PhillipCapital Research

Gross Profit Forecasts, USD mln



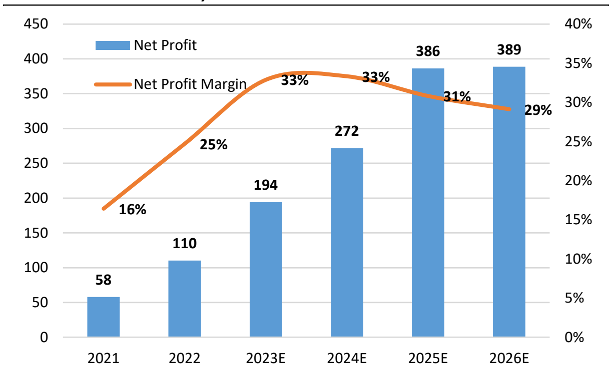
Source: PhillipCapital Research

Ebitda Forecasts, USD mln



Source: PhillipCapital Research

Net Profit Forecasts, USD mln



Source: PhillipCapital Research

Methodology

The target value of a stock represents the value that the analyst expects to be reached at the end of our 12-month performance period.

Outperform (OP)

If this decision is made for a company, it indicates that better returns are expected for the stock compared to the index in the medium and long term. However, this decision does not guarantee that the stock will rise or outperform the index. Any changes in market conditions, developments in the macroeconomy, global economic developments, or news about the company after the report is published can change this decision.

In-Line with Index (IL)

If the decision of "In-Line with Index" is made for the relevant stock, there can be various reasons for this. This decision may have been made if the company's recent data and future estimates do not show significant differences compared to the past. The stock price of the company may be at levels close to what it should be in terms of valuations. Making an "In-Line with Index" decision for a stock does not mean that the stock will not move up or down. Generally, this decision indicates that in the medium and long term, a return similar to the index is expected for the stock. However, every new piece of news and change in market conditions can alter this decision.

Underperform (UP)

If the decision of "Underperform" is made for a stock, it indicates that weaker returns are expected in the medium and long term compared to the index. Even if the "Underperform" decision has been made for a stock, short-term price increases for the stock or short-term technical indicators giving a buy signal are possible. In some cases, even if returns are not expected from the stock in the medium and long term, short-term "Outperform" or "In-Line with Index" returns can be achieved when there is significant news, temporary profit increase news, or developments that will lead to a positive short-term price trend.

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