

GenCos

Outlook for 2009

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- We revise 2009 forecasts for Ukrainian power generation companies, accounting for a projected 10% decrease in domestic demand, sticky tariffs in the sector and hryvnya depreciation
- We estimate thermal power plants' output will decline 13% yoy in 2009 (base-case), with the largest drop at Vostokenergo (most utilized in 2008), and smallest at Donbasenergo (DOEN) & Zakhidenergo (ZAEN), which were close to minimum load in 2008
- We expect slight rise in GenCos' profitability, with 9%-16% growth in operating costs and a 9%-21% yoy increase in their average tariffs
- We continue to value GenCos employing economic profit model, based mainly on GenCos' asset base, and estimate the lower bound of the companies' fair values. This approach yields tripledigit effective upsides for GenCos stocks. Taking into account recent market turmoil, we believe GenCos stocks will reveal their value fundamental within a 2-3 year horizon

Key data



Source: Company data, Energobiznes, Concorde Capital

GenCos market summary

	Price	MCap	EV	//S	EV/EI	BITDA		apacity, D/kW	12M target	Implied EV/ Coal capacity	Upside effective	Rec.
	USD	USD mln	2008E	2009E	2008E	2009E	coal units	total capacity	USD	USD/kW		
CEEN	0.64	237	0.3	0.5	7.1	7.2	68	41	3.5	297	421%	BUY
DNEN	60.7	362	0.4	0.7	6.0	8.3	70	49	284.2	298	277%	BUY
DOEN	3.4	80	0.4	0.6	4.8	7.3	64	64	22.6	233	491%	BUY
ZAEN	46.9	600	0.7	1.0	23.3	14.8	151	151	96.6	286	98%	BUY
Average			0.5	0.7	10.3	9.4	88	76		278		
EM peers			3.1	2.7	13.5	9.0		789				
DM peers			2.0	1.9	6.1	5.7		861				



Production forecast for 2009

Dramatic changes in the industrial sector prompted us to downgrade power consumption and production forecasts for 2009: in 4Q08 electricity demand dropped 39%-49% yoy from the metals & mining and chemicals sectors, which accounted for 35% of total internal electricity demand in 2007.

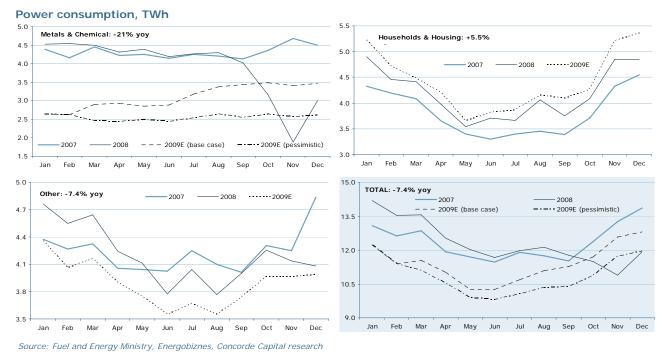
Ukraine's power demand set to slide 7%-12% yoy

Our two scenarios for domestic power consumption in 2009:

- base-case scenario assumes a partial recovery in metallurgy and chemicals in 2H09 (80%-85% of their monthly consumption in mid-2008)
- pessimistic scenario assumes 2009 consumption in these two critical sectors remains at the Dec. 2008 level

We forecast a 5.5% rise in power demand from households in 2009, fueled by both an increase in the use of electrical equipment and by an expected decrease in gas-dependent heat production (and the need to substitute reduced heat supply by electricity in the winter).

In our base-case scenario, we estimate net power consumption at 137 TWh in 2009 (down 7.4% yoy), while in the pessimistic case – 130 TWh (down 11.8% yoy).



Note: numbers represent yoy change in consumption in 2009 under the base-case scenario

We anticipate no changes in the volume of electricity exports in 2009, and estimate gross demand for Ukrainian electricity at 165 TWh in 2009 under the base-case scenario (down 9.4% yoy) and 157 TWh in the pessimistic case (down 13.7% yoy).



Thermal plants face a double-digit drop in demand

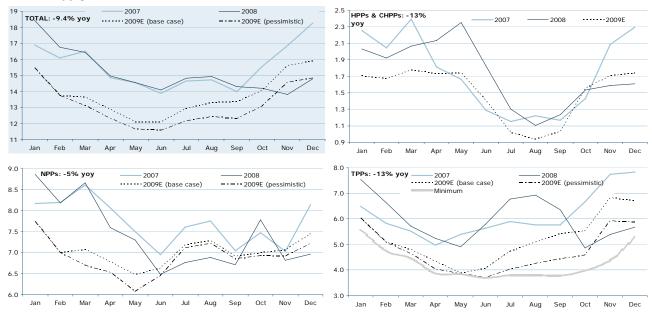
Under our base-case for 2009 power consumption, the largest decrease is expected in 1H09, which, most likely, will affect the most expensive producers: thermal and combined heat & power plants.

We forecast a 6% yoy increase in power supply by hydro power plants, the cheapest producers, and a 36% yoy drop in production by CHPPs, the least cost-efficient producers (mostly gas-fired).

As for TPPs, the bottom capacity load of each plant (as a function of external temperature) is stipulated by the Rules of Wholesale Electricity Market. We estimate TPPs will produce power close to their minimum level in 1H09.

Nuclear power plants will meet the remaining portion of demand in 1H09, and (under the base-case scenario) increase their production in 2H09 by 2% yoy. We estimate total production of power by NPPs at 84.5 TWh in 2009 (-5% yoy).

Power supply, TWh



Source: Fuel and Energy Ministry, Energobiznes, Concorde Capital research Note: numbers represent yoy chance in production in 2009 under the base-case scenario

Scenarios for thermal power plants

In our power consumption base-case scenario, TPPs will decrease production 13% yoy to 62.4 TWh in 2009; and under the pessimistic scenario, we expect a 21% yoy decline to 56.4 TWh.

We also keep in mind an optimistic case for TPPs: if they successfully lobby for a higher load, at the cost of nuclear producers. Two key arguments can be considered by the regulator for realization of this scenario:

- A drop in demand for TPPs directly leads to decreased demand for energy coal, which with the drop-off in demand for coking coal would put additional stress on the mining sector. This could lead to additional budget financing for the still very subsidy-dependent coal sector, leading to higher budget outflows
- The decommissioning dates of Ukraine's NPP units are fast approaching (2010 onward), so it seems reasonable for the regulator to use the temporary drop to halt the units for reconstruction in order to prolong their service life



GenCos: Winners & losers

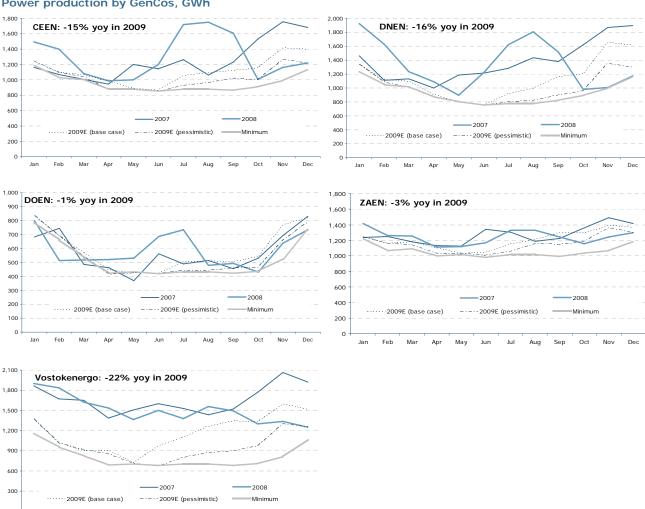
While we expect TPPs to work close to their minimum load for most of 1H09, the largest yoy drop in production will be at companies that worked far above the minimum level in 1H08. Namely, Vostokenergo will become the main loser in 2H09, while Donbasenergo is likely to turn into the biggest winner (assuming its Slavyansk TPP will not have technical problems, which spoiled its performance in 1Q08).

GenCos' power production in 1H08, TWh

	Actual	Required	Excess of actual to minimum
		minimum (est.)	
CEEN	7.2	5.8	23%
DNEN	8.0	5.7	40%
DOEN	3.6	3.2	10%
ZAEN	7.3	6.4	15%
Vostokenergo	9.8	5.0	95%
Source: NFRC, Compar	ny data. Concorde	Capital research	

We base our forecasts for 2H09 on two parameters: price efficiency (more efficient Vostokenergo and Dniproenergo will be loaded first) and location of TPPs (Zakhidenergo and Centrenergo, most of whose plants are located in non-industrial areas, will be loaded more during the periods of low industrial demand).

Power production by GenCos, GWh



Source: Fuel and Energy Ministry, Energobiznes, Concorde Capital research



Extra risks/opportunities for listed GenCos

We continue to monitor two main risks/opportunities that could force a forecast revision:

- Equipment failures in particular, this could be a factor for Donbasenergo (see graph on previous page; the company produced electricity below its guaranteed minimum level in February – mainly due to a technical failure at its only unit at Slavyansk TPP)
- Regulator intervention action by the National Electricity Regulatory Commission (to benefit state-controlled GenCos) was taken in 2005 to artificially limit Vostokenergo's output (see our June 26, 2006 GenCos update). With the expected tapering off in domestic power demand, the temptation could be high for NERC to support state companies by setting limits on Vostokenergo



Financials: sales down, profitability up

We expect a slow increase of both tariffs for GenCos and their costs in 2009.

With the emergence of a coal surplus on the market, it is highly unlikely that coal prices will grow in 2009: we expect the average prices for coal (in UAH) to remain at the Dec. 2008 level (average 6% yoy growth over FY09). Gas tariffs could rise 40%-45% yoy, but due to the low share of gas (less than 5% of the fuel mix), its influence on GenCos' operating costs will be low: fuel costs will increase by 8% yoy, on average. We forecast 14%-15% growth in GenCos' fixed operating costs in hryvnyas, which will lead to 9%-16% increases in total operating costs per unit of power produced.

We forecast GenCos' tariffs to grow faster than their costs in 2009, increasing the profitability of all GenCos. We expect the average 2009 electricity tariff for GenCos to be at the level of Dec. 2008, a 9%-21% yoy increase in FY09 tariffs in local currency.

In USD terms, we project GenCos' revenues to fall 30%-40% yoy in 2009 due to devaluation of the local currency (estimated at 40% yoy).

Key forecast summary Production, TWh

	2007	2008E	2009)F		
			Old	New	New, yoy	New/Old
CEEN	15.0	15.6	16.3	13.4	-15%	-18%
DNEN	16.6	16.1	17.9	13.6	-16%	-24%
DOEN	6.8	7.1	7.4	7.0	-1%	-4%
ZAEN	15.3	14.9	15.6	14.5	-3%	-7%
Vostokenergo	19.9	18.1	n/a	14.0	-22%	n/a

Revenue, USD mln

	2007	2008E	2009	9F		
			Old	New	New, yoy	New/Old
CEEN	679	950	1,072	582	-39%	-46%
DNEN	758	1,022	1,187	614	-40%	-48%
DOEN	291	433	516	292	-33%	-44%
ZAEN	716	968	1,169	677	-30%	-42%
Vostokenergo	892	1,093	n/a	637	-42%	n/a

EBITDA, USD mln

	2007	2008E	200	2009F				
			Old	New	New, yoy	New/Old		
CEEN	67	44	48	44	-2%	-10%		
DNEN	80	67	75	49	-27%	-36%		
DOEN	33	35	31	23	-35%	-26%		
ZAEN	46	30	37	47	58%	27%		
Vostokenergo	189	202	n/a	138	-32%	n/a		
Source: Company data.	Energobizi	nes, Concord	le Capital e.	stimates				

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Comparative valuation

Peer comparison yields a wide range of implied prices for GenCos, complicating judgment of their fair values. We continue to rely on our economic profit approach to value the companies' upside potential.

GenCos' market multiples

	EV/S		EV/EBI	ΓDA	EV/Capacity		
	2008E	2009F	2008E	2009F	coal-fired	total capacity	
CEEN	0.33	0.54	7.1	7.2	68.4	41.3	
DNEN	0.39	0.66	6.0	8.3	69.7	49.2	
DOEN	0.39	0.59	4.8	7.3	64.0	64.0	
ZAEN	0.72	1.04	23.3	14.8	151.2	151.2	
Average	0.46	0.71	10.3	9.4	88.3	76.5	
Peer average							
DM peers	2.0	2.1	5.7	5.6		861.4	
EM peers	3.1	2.7	13.5	9.0		789.4	
OGK-5 [*]	1.2	1.2	8.9	6.7		176.4	

Source: Bloomberg, Company data, Concorde Capital calculations

Implied upsides by peer average

		EV/S		EV/EB	ITDA	EV/		
		2008E	2009F	2008E	2009F	Capacity**		
	DM peers	657%	390%	-25%	-30%	1531%		
CEEN	EM peers	1129%	520%	121%	34%	1392%		
	OGK-5 [*]	333%	150%	35%	-9%	208%		
	DM peers	445%	249%	-6%	-37%	1265%		
DNEN	EM peers	777%	339%	139%	10%	1150%		
	OGK-5 [*]	216%	84%	54%	-22%	171%		
	DM peers	854%	563%	41%	-51%	2639%		
DOEN	EM peers	1492%	756%	388%	50%	2401%		
	OGK-5 [*]	416%	208%	184%	-18%	372%		
	DM peers	202%	124%	-88%	-72%	544%		
ZAEN	EM peers	392%	184%	-49%	-45%	489%		
	OGK-5 [*]	71%	14%	-71%	-64%	19%		

Source: Bloomberg, Company data, Concorde Capital calculations ** Note: Only coal-fired capacity of GenCos is accounted for

Peer multiples

•	EV/S	3	EV/EBI	ΓDA	EV/Capacity
	2008	2009	2008	2009	USD/kW
Boralex	2.0	2.2	5.7	5.6	1000
Drax Group	1.3	1.2	4.4	4.3	814
International Power	2.7	2.3	7.1	6.0	725
NRG Energy	2.0	2.1	5.2	5.3	558
J-Power	1.9	1.8	8.1	7.4	1209
DM peer average	2.0	1.9	6.1	5.7	861
EGCO	3.6	2.7	5.1	5.5	375
China Power	1.6	1.3	12.9	6.3	254
Datang Power	4.0	3.4	17.3	11.4	1226
Huadian Power	2.1	1.7	18.2	9.1	589
Huaneng Power	2.4	2.1	21.0	11.4	775
NTPC	4.0	3.8	13.9	12.8	1195
CR-Power	3.1	2.5	13.1	9.0	882
Tractebel	4.2	4.1	6.7	6.8	1019
EM peer average	3.1	2.7	13.5	9.0	789
OGK-1	0.7	0.7	7.2	4.8	120
OGK-2	0.4	0.5	7.3	4.9	55
OGK-3	-1.3	-0.9	-11.4	-6.4	-178
OGK-4	0.5	0.7	4.9	4.4	72
OGK-5 [*]	1.2	1.2	8.9	6.7	176
OGK-6	0.4	0.5	4.9	3.6	60
Russian peer average	0.6	0.7	6.7	4.9	97

Source: Bloomberg, Company data, Concorde Capital calculations

*Note: We consider OGK-5 the most appropriate Russian peer to Ukrainian GenCos, as it is the only company whose price was not affected by the July 2008 market overhang due to RAO UES' liquidation (refer to our Nov. 2008 update on GenCos for more details)



Valuation by economic profit (EP) model

We continue to value GenCos by applying an economic profit (EP) model, using conservative assumptions of GenCos' future EP: this approach gives the most weight to the companies' asset bases.

Value = Invested capital + Discounted future economic profit

Compared to our October 2008 industry update, we only upgraded the equipment replacement cost (from 1.5 USD/W of installed capacity to 1.575 USD/W, accounting for inflation rate). Basic assumptions of the model are listed in the appendix.

Valuation summary, USD mln

	•	preciated) city, MW Adjusted	Value of equipment (invested capital), 12M	Fair value of equipment in 2021	Total discounted EP	Implied EV	Net debt	12M target, USD
CEEN	2,243	783	1,234	5,946	129	1,363	76	3.5
DNEN	2,252	1,020	1,606	5,969	130	1,736	41	284.2
DOEN	446	379	598	1,183	26	623	89	22.6
ZAEN	815	815	1,284	2,162	47	1,331	96	96.6
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Note	Installed capacity adjusted for time in operation	Gas-fired units subtracted; DOEN's two power units accounted with 25% discount	= (3) x 1.575 USD/W [ref. to formula (B) in appendix]	= (2) x 1.575 USD/W x 1.05 ¹¹ [ref. to formula (D) in appendix]	= (5) x 0.0217 [ref. to formula (E) in appendix]	= (4) + (6)		= { (7) - (8) } / # of shares

Source: Company data, NC ECU, Concorde Capital research

Effective upside estimation

	Mid-market,	12M target,	Implied	3M	Upside	
	USD	ŪSD	upside	spread	effective	Rec.
CEEN	0.64	3.5	444%	4.2%	421%	BUY (Maintain)
DNEN	60.7	284.2	368%	19.4%	277%	BUY (Maintain)
DOEN	3.4	22.6	568%	11.5%	491%	BUY (Maintain)
ZAEN	46.6	96.6	106%	4.1%	98%	BUY (Maintain)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Note			= (3) / (2) - 1		$= (4) - (5) - (4) \times (5)$	

Source: Company data, PFTS, Concorde Capital calculations



Appendix: Economic Profit Model

- (A) $EV = Invested\ Capital_{2010} + Sum\ of\ discounted\ EP_{2010\ to\ perp.}$
- (B) Invested Capital $_{2010}$ = Value of remaining (net of depreciation) capacity = Adjusted net capacity \cdot (1 time in operation / full depreciation time) \cdot Replacement cost

Where:

Replacement cost in 2010 is assumed to be 1,575 USD/kW of capacity

Adjusted capacity is the total installed capacity of ZAEN, installed capacity of coal-fired power units of CEEN and DNEN, and installed capacity of DOEN taken with 25% discounts for unit #4 of Starobeshev TPP and unit#7 of Slavyansk TPP (for more details, refer to our Nov. 2008 report).

full depreciation time is taken as 280,000 hrs of operation of a power unit

Sum of discounted EP_{2010 to perp.} is estimated based on the assumption of a zero sum of discounted EPs over 2010-2020, and 1% EP since 2020:

(C) Sum of discounted EP_{2010 to perp.} = 0 + Sum of discounted EP_{2021 to perp.} = Invested capital_{2021*} (ROIC_{perp.}-WACC_{perp.}) / (WACC_{perp} - Growth_{perp.}) * Discount factor

Where

WACC_{perp.} is assumed to be 12%

 $\it ROIC_{\it perp.}$ is assumed to be 13%, which implies EP (ROIC less WACC) in perpetuity at 1%

Growthperp. (sustainable growth in perpetuity) is assumed to be 3% p.a.

Discount factor is estimated assuming 16% WACC over 2010-2021 = 1.16⁻¹¹

Invested Capital₂₀₂₁ is calculated as the fair value of remaining total capacity in 2020 (based on the assumption that remaining capacity will not change over the next 11 years) multiplied by the *Replacement cost* adjusted for an annual inflation rate for equipment of 5% over 2010-2021. Unlike fair value for 2010, this value fully accounts for the gas-fired blocks of CEEN and DNEN, as well as the risky blocks of DOEN:

- (D) Invested capital₂₀₂₁ = Fair value of equipment₂₀₂₁ = Depreciated capacity * 1.575 * 1.05¹¹
- (E) Sum of discounted EP_{2010 to perp.} = Fair value of equipmentl₂₀₂₁ * $(13\% 12\%) / (12\% 3\%) * 1.16^{-11}$

For more details on our assumptions, refer to our November 2008 update on GenCos.



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