



Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Reform of Municipal Services in Eastern Ukraine



Financing and cash flow
Hypothetical example from Dnipro VK and
Novomoskovsk VK

April 2016



Financing Options

- Own Cash Flow
 - Infrastructure Renewals financed out of Infrastructure Renewals Charge, included in Tariff and cash flow
 - Other investments financed out of Return on Capital and Depreciation incl. in Tariff, but not completely in cash flow
- External Loans - IFIs
 - Low interest rates
 - Long duration
 - Grace periods
- Grants (for instance IFIs, Government, Budget)
- Commercial Loans



Financing Options - DVK

- Major Part of Investments are infrastructure renewals
- Included in tariff and cash flow
- Other investments lower than cash flow from Return on Capital and Depreciation
- All investments can be financed from own cash flow



Financing Options - DVK

- Hypothetical exercise !!

		2016	2017	2018
Sold Water	m ³	66.434.333	66.900.982	67.018.628
Tariff	UAH/m ³	11,35	11,30	11,27
Collection Rate	%	94%	94%	94%
Cash Revenues	UAH	708.623.582	710.760.571	710.103.118
OPEX	UAH	316.020.426	316.941.470	317.913.404
Net Costs Water Ex-/Import	UAH	70.165.147	67.804.228	65.521.851
Depreciation estimated	UAH	9.808.806	21.575.561	32.693.555
Result	UAH	312.629.203	304.439.312	293.974.309
Taxes	UAH	62.525.841	60.887.862	58.794.862
Result after Taxes	UAH	250.103.362	243.551.450	235.179.447
Free CF	UAH	259.912.169	265.127.010	267.873.002
Investments IFR (Cash Expenses)	UAH	182.790.857	182.790.857	182.790.857
Free CF available for other investments/Loan&Interest Pay Back	UAH	77.121.312	82.336.153	85.082.145
Other Investments (Cash Expenses)	UAH	13.385.269	52.544.229	39.569.024
Total Investments (Cash Expenses)	UAH	196.176.126	235.335.086	222.359.881
Surplus/Need Cash	UAH	63.736.043	29.791.924	45.513.121



Financing Options -NVK

- Infrastructure renewals only minor part of investments
- Included in tariff and cash flow
- Other investments higher than cash flow from Return on Capital and Depreciation
- Other investments cannot be financed completely from own cash flow
- External financing necessary
- For short term loan duration from cash flow 100% loan financing cannot be served
- Grant would be necessary
- Under IFI conditions (25 years with grace period and low interest rates) no grant would be necessary



Financing Options - NVK

- Hypothetical exercise !! For illustrative purposes Annuity based loan with two year grace period (repayment starts in 2018) was applied
- Limitations: With grant financing also RAB and tariffs would change again, further iterations necessary

		2016	2017	2018
Sold Water	m ³	2.593.795	2.612.858	2.631.714
Tariff	UAH/m ³	13,15	14,08	15,56
Collection Rate	%	95%	96%	98%
Cash Revenues	UAH	32.412.195	35.326.849	40.123.917
OPEX	UAH	12.497.576	12.837.660	13.177.555
Net Costs Water Ex-/Import	UAH	7.859.392	7.844.082	7.829.426
Depreciation estimated	UAH	1.236.871	5.472.252	10.696.540
Result	UAH	10.818.357	9.172.855	8.420.396
Taxes	UAH	2.163.671	1.834.571	1.684.079
Result after Taxes	UAH	8.654.686	7.338.284	6.736.317
Free CF	UAH	9.891.557	12.810.536	17.432.857
Investments IFR (Cash Expenses)	UAH	4.612.000	4.722.000	4.722.000
Free CF available for other investments/Loan&Interest Pay Back	UAH	5.279.557	8.088.536	12.710.857
Other Investments (Cash Expenses)	UAH	20.125.417	79.985.616	99.763.770
Total Investments (Cash Expenses)	UAH	24.737.417	84.707.616	104.485.770
Surplus/Need Cash	UAH	-14.845.860	-71.897.080	-87.052.913



Financing Options - NVK

Interests		3,00%			
Loan Duration (Annuity)	Annuity Factor	Annuity	Affordable Loan Portion	Required Grant	
25	0,05743	11.478.384	100%	0%	
20	0,06722	12.091.254	90%	10%	
15	0,08377	11.719.980	70%	30%	

Financing Options – NVK - Sensitivity

	11.478.384	0,50%	1,50%	3,00%	4,50%	6,00%
10		20.541.248	21.673.260	23.431.424	25.259.942	27.156.581
15		13.864.189	14.979.488	16.742.829	18.611.104	20.579.662
20		10.526.697	11.641.855	13.434.726	15.365.604	17.425.996
25		8.525.032	9.646.648	11.478.384	13.479.362	15.635.550
30		7.191.279	8.322.625	10.197.464	12.270.623	14.520.687



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Registered offices, Bonn and Eschborn, Germany

Reform of Municipal Services in Eastern Ukraine

15/75 Khreshchatyk Street, 01001 Kyiv, Ukraine

T/F +38 044 495 50 07

E wolfgang.huetzen@gfa-group.de
I www.ims-ukraine.org
I www.giz.de/ukraine
I www.gfa-group.de

Responsible

Wolfgang Hützen

Authors

Richard Schuen

In cooperation with

