Reduction of water losses in distribution networks of Moldova, Chisinau, due to reduction of technical losses, theft and detection of faulty metering units

Description of the project, type and schedule of implementation of the "BALANCE" system	
Objective of the project	Installation and wide use of innovative remote metering systems and equipment for controlling the balance of supplied and consumed water in distribution networks, can significantly reduce water losses and methane emissions into the atmosphere.
Description	The loss of water during its transportation and distribution is a significant source of greenhouse gas emissions. Water losses occur in transport networks, water fittings, in indoor networks, because of faulty water meters, because of interference in the operation of meters, with unauthorized connections, when magnets act on the counting mechanism and leakage in the consumer. The project will detect, measure, localize and eliminate losses based on monitoring the daily and hourly consumption balance in transport and in-house networks. There are about **200 thousand** subscribers in **Apa Canal**. The total water loss is **32 million m3** per year. When implementing the BALANCE system, water losses are reduced by 80%, which is a reduction in losses for consumers by **$ 20.0 million** per year. If the electricity consumption is 1.25 kWh per m3 of water, in CO2 equivalent it will be **19,200 tons of CO2 per year** (k=0,6). Additionally, with a water price for the population of $ 0.78 per cubic meter, the savings from loss reduction will be $ 16.5 million per year or $ 82.5 per subscriber per year. With the cost of equipment $ 92 ($ 24 two counters + $ 64 system "BALANCE" + 4 $ work) the payback period of the installation of the metering system will be about **14 months**. **In case of participation in the program of CO2 emission reduction, the installation of the metering system "BALANCE" can be performed exclusively at the expense of the grant and does not require any additional costs from the Apa Canal.**
The program for the implementation of the "BALANCE" system	With a 28-month installation program, you will need to install **6500 D100FC** radio modules and **13,000 meters per month** + balance counters, which will cost **$ 0.6 million per month**. Below is a table of monthly costs for implementing the BALANCE system in Chisinau. For the operation of distribution networks, with a drop in sales of water to 50%, it is necessary to **allocate operating costs** for the maintenance of transport and domestic networks **to a separate article from the tariff**!

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
Expenses (mln.USD)	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	0,6	
Savings (mln.USD)	0,02	0,065	0,11	0,155	0,2	0.245	0,29	0,335	0,38	0,425	0.47	0,515	0,56	0,605	0,65	
Cost per month	0,58	0,535	0,49	0,445	0,4	0,355	0,310	0,265	0,22	0,175	0,13	0,085	0,04	-0,005	-0,5	4,025

Results of the application of the "BALANCE" system	The total project costs for the first 14 months will be 4,025 million USD, and in the next 14 months 4,025 million USD can be returned due to savings on reducing water losses. Apa Canal will receive an automated metering system on the scale of the city of Chisinau and water losses of no more than **6.4 million m3**. **In case of participation in the program of CO2 emission reduction, the Apa Canal can receive the BALANCE metering system solely from a grant, and also obtain savings due to a decrease in water losses of $ 16.5 million per year.**	
Location	Republic of Moldova, Chisinau, **Apa Canal**. Number of subscribers 200 000	
Category	Equivalent of CO2 emissions from water losses	
Current status	PROJECT	
Schedule	Project start date	**2012**
	The duration of the project	28 months (installation of the BALANCE system when checking / replacing meters)
Reduction of GHG emissions (tonnes of CO2 equivalent)		
Before and including 2015 (indicative estimate)		**22,400 tons of CO2**
Operating period 20 years (indicative estimate)		**384,000 tons of CO2**
Finance		
The cost of the grant at the rate of 10 USD / ton of CO2		**4 068 000 USD**
Total investment costs for the system BALANCE (USD)		**4 025 000 USD**
Profit from the project (USD)		**43 000 USD**
Contact Information		
The developer of the project	The company «DJV-COM»	
Mailing address	of.712 left side, 7 Miron Kostin str., Chisinau, Moldova, MD2068	
Internet site	www.djv-com.net, www.djv-com.com	
Phone / Fax	(+373 22) 438341/438334	
Contact person / Position	Dombrovschi Veaceslav, Director	
E-mail	djv-com@starnet.md, office@djv-com.net	