

Reducing electricity losses in Moldova's distribution networks by reducing technical losses, theft and identifying 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 electricity supplied and consumed in electricity distribution networks, allows to significantly reducing energy losses and methane emissions into the atmosphere.																	
Description	<p>The loss of electricity during its transportation and distribution is a significant source of greenhouse gas emissions. Electricity losses occur in transformers, power lines, in the electricity meters themselves, in neutral wires with unbalance in phases, with unauthorized connections, with poor contacts in the distribution network and faulty equipment of the consumer.</p> <p>The project will detect, measure, localize and eliminate losses based on monitoring the balance of daily and hourly consumption in medium and low voltage networks. The loss due to the electricity metering unit is determined by analyzing the hourly profiles of electricity consumption.</p> <p>In Red Union Fenosa about 807 thousand subscribers. Total electricity losses in 2009 amounted to 326 million kWh. When implementing the BALANCE system, the energy losses are reduced by 80%, which is a decrease in losses for 807,000 consumers by 260 million kWh. In the CO2 equivalent, it will be 130 000 tons per year.</p> <p>In addition, at an energy cost for the population of 122 dollars per 1000 kWh, the savings from loss reduction will be \$ 31,720,000 per year or \$ 39.31 per subscriber per year. If the cost of equipment is 100 USD \$ (balance meter + BALANCE system + works), the payback period of the metering system installation will be about 30 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 will not require any additional costs from Red Union Fenosa.</p>																	
The program for the implementation of the "BALANCE" system	With a 5-year program for installing equipment for 807,000 meters, it will be necessary to install 13450 radio modules D100FC per month + equip the distribution networks with balance counters, which will cost \$ 1.4 million per month. Below is a table of monthly costs for the implementation of the BALANCE system on the scale of the Republic of Moldova.																	
Month	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32		
Expenses (mln.USD)	1,4	1,4	1,4	1,4	1,4	1,4	1,4	1,4	1,4	1,4	1,4	1,4	1,4	1,4	1,4	1,4	1,4	
Savings (mln.USD)	0,05	0,15	0,25	0,35	0,45	0,55	0,65	0,75	0,85	0,95	1,05	1,15	1,25	1,35	1,45	1,55		
Cost per month	1,35	1,25	1,15	1,05	0,95	0,85	0,75	0,65	0,55	0,45	0,35	0,25	0,15	0,05	-0,05	-0,15	20,3	
Results of the application of the "BALANCE" system	<p>The total project costs for the first 30 months will amount to 20.3 million USD, and in the next 30 months it will be possible to return 20.3 million USD due to savings on reducing energy losses.</p> <p>Red Union Fenosa will receive an automated metering system on the scale of the Republic of Moldova and energy losses of no more than 66 million kWh.</p> <p>In case of participation in the program of reduction of CO2 emissions, Red Union Fenosa can receive the BALANCE metering system solely from the grant and also save by reducing energy losses of US \$ 31 720 000 per year.</p>																	
Location	The Republic of Moldova. Red Union Fenosa. Number of subscribers 807 000																	
Category	Equivalent to CO2 emissions from electricity losses																	
Current status	PROJECT																	
Schedule	Project start date										2012							
	The duration of the project										5 years (installation of the BALANCE system for verification / replacement of meters)							
Reduction of GHG emissions (tonnes of CO2 equivalent)																		
Before and including 2017 (indicative estimate)												325 000 tons of CO2						
Period 20 years - until 2032 (indicative estimate)												1 950 000 tons of CO2						
Finance																		
The cost of the grant at the rate of 10 USD / ton of CO2												22 750 000 USD						
Total investment costs for the system BALANCE (USD)												20 300 000 USD						
Profit from the project (USD)												2 450 000 USD						
Contact Information																		
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