

Sustainable Energy Action Plan of Polotsk

Annex №1
to the Sustainable Energy Action
Plan of Polotsk for years 2011-2020

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SECTORS & fields of action	KEY actions/measures per field of action	Responsible department, person or company (in case of involvement of 3rd parties)	Implementation [start & end time]	Estimated costs per action/measure [EUROS]	Expected energy saving per measure [MWh/a]	Expected renewable energy production per measure [MWh/a]	Expected CO2 reduction per measure [t/a]	Energy saving target per sector [MWh] in 2020	Local renewable energy production target per sector [MWh] in 2020	CO2 reduction target per sector [t] in 2020	Cumulated CO2 reduction until 2020 per measure [t/a]	Cumulated energy saving until 2020 per measure [MWh/a]	Cumulated economic saving until 2020 per measure [€/accion]	Cumulated economic saving until 2020 per measure [BYR/accion]	Extra Estimated costs 2011-2020 [BYR/action]	Payback [years]
BUILDINGS, EQUIPMENT / FACILITIES & INDUSTRIES:								112 431	4 993	37 575						
Municipal buildings, equipment/facilities	Introduction of solar thermal facilities in the sports centers and city council public buildings with high hot sanitary water demand. 15 facilities	City Council of Polotsk	2013-2017	114 000	200	200	40				320	1 600	109 642	1 192 356 976	1 239 750 000	8
	Energy auditing of all public buildings of the City Council Building of Polotsk. Implementation of the measures recommended. 100 buildings	City Council of Polotsk the Vitebsk district administration of national department of energy efficiency	2012-2019	60000	574		115				919	4 595	157 336	1 711 032 261	652 500 000	3
	Introduction of the heat recovery and extraction systems with high capacity. 1 building	City Council of Polotsk	2014	1 850	1,45		0,67				5	12	1 562	16 987 621	20 118 750	9
	Modernisation (exchange) of the pumping equipment in boiler houses with the new one. Total number of pumps - 11 items.	City Council of Polotsk	2011-2012	75 988	5 682		2 608,21				23 474	51 141	6 313 251	68 656 603 324	826 369 500	0
	Modernisation of the heat supply network (4,000 m/year).	City Council of Polotsk	2011-2020	4 784 400	408		82				734	3 672	115 344	1 254 362 316	52 139 100 000	374
	Installation of 3 boiler of 3 mWt capacity, with usage of wood chips	City Council of Polotsk	2012	706 287	4 715	4 715	943				6 601	33 005	1 332 954	14 495 878 234	7 680 871 125	5
	Installation of the boilers of smaller heat and electricity capacity in boiler houses: Borovukha, Trounitskaya.	City Council of Polotsk	2015-2018	400 415	4 240		848				1 696	8 480	211 218	2 296 995 750	4 354 513 125	9
Tertiary (non municipal) buildings, equipment/facilities	Introduction of solar thermal facilities in the Hospitals and public buildings with high hot sanitary water demand. 1 Hospital	City Council of Polotsk	2013	22 800	40	40	8				56	280	10 964	119 235 698	247 950 000	17
	Improving the insulation of walls and roofs. 1 hospital	City Council of Polotsk	2013-2014	25 650	96		19				153	764	26 314	286 165 674	278 943 750	8
	Renovation of windows. 1 Hospital	City Council of Polotsk	2015	42 210	124		25				198	992	33 989	369 630 663	459 033 750	10
	Substitution of conventional lights for low-energy lights. 1 hospital	City Council of Polotsk	2012-2014	6 975	11		5,09				41	89	11 958	130 043 166	75 853 125	5
Residential buildings	Improving the insulation of walls and roofs. 1 building	City Council of Polotsk	2015	149 300	143		29				143	715	39 197	426 267 619	1 623 637 500	30
	Renovation of windows. 1 building	City Council of Polotsk	2015	4 942	14		3				14	70	9 837	41 732 494	53 744 250	10
Municipal public lighting	Installation of LED technology in public lighting. The street of Euphrosyne.	City Council of Polotsk	2012	40 000	18		8,26				66	144	19 391	210 880 809	435 000 000	17
	Installation of LED technology in traffic lights	City Council of Polotsk	2012	24 728	63		28,92				231	504	354 144	3 851 313 034	268 917 000	1
	Replacement of the street sodium arc lamps to LED lamps on the central streets of the city	City Council of Polotsk	2016	401 400	165		75,74				303	660	152 797	1 661 665 896	4 365 225 000	11
	Replacement of the 67 street sodium arc lamps to self-contained street lighting	City Council of Polotsk	2016	201 000	38	38	17,44				70	152	35 190	382 686 691	2 185 875 000	23
	Replacement of street decorative lighting with LED lighting	City Council of Polotsk	2016-2017	500 000	32		14,69				44	96	27 280	296 671 905	5 437 500 000	55
	Installation of 18 Automatic street light control boxes	City Council of Polotsk	2016-2017	93 333	245		112,46				337	735	208 864	2 271 394 275	1 014 996 375	1
	Energy auditing of lights in 12 streets	City Council of Polotsk	2015	12 000												
	Installation of the light management system in the foyers of the large block houses. 3,500 lamps	City Council of Polotsk	2012-2013	12 500	675		309,83				2 169	4 725	7 269 597	79 056 872 332	135 937 500	0
TRANSPORT:								18 079	0	4 801						
Public transport	Development of a Sustainable Mobility Urban Plan.	City Council of Polotsk	2012-2020	300000	-	-	-				-	-	-	-	-	-
	Implementation of the Sustainable Mobility Urban Plan. (1 year later from study)	City Council of Polotsk	2013-2020	600000	17 777		4 717				4 717	17 777	1 244 421	13 533 074 352	6 525 000 000	0
	Development of a biking system in one year time	City Council of Polotsk	2013	32625000 BYR - 30000 EUROS/year	-	-	-				-	-	-	-	-	-
Private and commercial transport	Cycling lanes construction. 10 km	City Council of Polotsk	2014-2020	761250000 BYR / 70000 €	38		11				84	302	21 113	229 599 679	761 250 000	27
LOCAL ELECTRICITY PRODUCTION:								2 784	696	1 278						
Photovoltaic	Feasibility study to implementation of installation of solar panels	City Council of Polotsk	2013	10875000 BYR - 1000 EUROS	-	-	-				-	-	-	-	-	-
	Installation of internal combustion engines for the generation of electricity from biogas in the new waste treatment plant of	City Council of Polotsk	2016-2017	120 000	696	696	319,46				1 278	2 784	18 314 603	199 171 309 329	1 305 000 000	0
LOCAL DISTRICT HEATING / COOLING, CHPs:								1 836	0	485						
	Renewing the network pipe lines 2000	City Council of Polotsk	2011-2020	2 397 200	204		54				485	1 836	128 520	1 397 655 000	26 069 550 000	168
LAND USE PLANNING:								3 293	0	2 308						
Strategic urban planning	Flow of energy efficient new buildings.	City Council of Polotsk	2017	0	1 098	0	769				2 308	3 293	460 992	0	0	0
Transport / mobility planning	Execution of a Urban Cicing Master Plan	City Council of Polotsk	2014	1087500000 BYR - 1000000 EUROS	-	-	-				-	-	-	-	-	-
PUBLIC PROCUREMENT OF PRODUCTS AND SERVICES:								0	0	0						
Energy efficiency requirements/standards	Introduction of Energy Efficiency Criteria in City Council Tenders of Services	City Council of Polotsk	2012	0	-	-	-				-	-	-	-	-	-
	Introduction of energy saving criteria equipment and energy saving technologies on factories.	City Council of Polotsk	2012	0	-	-	-				-	-	-	-	-	-
	Annual city competitions to identify businesses and institutions that have achieved highest performance indicators of social and economic development, one of them being energy saving indicators that shows how efficiently fuel and energy resources are being used by city businesses and institutions.	City Council of Polotsk	2012	0	-	-	-				-	-	-	-	-	-
	Resolution of the Council of Ministers No. 92 dated 25 January 2010, if an organization has the following characteristics: annual consumption of energy resources is more than 1 thousand TCE, the consumption rate of fuel and energy resources is more than 8% lower than the growth rate of industrial production volumes, it gets an inflation index (pays more) for electricity, heat energy and gas. Monitoring of these parameters is performed by the Polotsk City Executive Committee. Monitoring results: so far, no sanctions have been imposed on any industries of the city	Ministry	2010	0	-	-	-				-	-	-	-	-	-
WORKING WITH THE CITIZENS AND STAKEHOLDERS:								248 994	0	58 134						
Advisory services	Creation of staff allocated for the development of the SEAP and for energy saving actions	City Council of Polotsk	2012	652500000 BYR-600000 EUROS/year	0	0	0				0	0	0	0	652 500 000	-
Awareness raising and local networking	20% emissions reduction commitment for citizens	City Council of Polotsk	2012	326250000 BYR-30000 EUROS	25 468		6 971				55 768	203 744	14 262 080	155 100 120 000	326 250 000	0
	Bicycle working group with	City Council of Polotsk	2012	0	0	0	0				0	0	0	0	0	0
	Voluntary working group with	City Council of Polotsk	2012	0	0	0	0				0	0	0	0	0	0
	Energy club with	City Council of Polotsk	2012	0	0	0	0				0	0	0	0	0	0
	Introduction of energy saving classes into the comprehensive program	City Council of Polotsk	2012	-	-	-	-				-	-	-	-	-	-
	awareness raising campaign with involvement of local	City Council of Polotsk	2012	65250000 BYR- 6000 EUROS	-	-	-				-	-	-	-	65 250 000	-
Training and education	Workshops of energy saving at home	City Council of Polotsk	2012	217500000 BYR-20000 EUROS	1 360	0	64				512	10 880	761 600	8 282 400 000	217 500 000	

