



**The aspects of energy efficiency and renewable
energy in Joint Implementation Projects of
Ukrainian portfolio**

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Some results of Initial Report of Ukraine

- **Assign amount units for commitments period**
 - **4604,2 млн. т. CO₂ экв**
- **AAUs reserve for for commitments period**
 - **2092,0 млн. т. CO₂ экв**
- **AAUs surpluses for for commitments period**
 - **~ 2500,0 млн. т. CO₂ экв**



Initial Report Review

- The Initial Review Report of Ukraine (FCCC/IRR/2007/UKR) was published 13 December 2007 on UNFCCC website
- Ukraine is eligible to use Kyoto Protocol mechanisms in 2008
- Established National Environmental Investment Agency of Ukraine has obligation to develop procedure and mechanism for participation of Ukraine in global carbon market



1.1. Joint Implementation Projects Approval Process

CABINET OF MINISTERS OF UKRAINE

adopted the Resolution “On Approval of the Procedure for Consideration, Approval and Implementation of Projects Aimed at Anthropogenic Emissions Reduction or Greenhouse Gas Absorption Increase Pursuant to Kyoto Protocol to the United Nation Framework Convention on Climate Change” dated February 22, 2006 N 206



1.2. JI Project Approval Process

- **JI Unit:** UNFCCC Implementation Division of the Ministry of Environmental Protection of Ukraine fulfils the function of the JI office
- **National JI Policy:** the requirements to the PIN and PDD are determined by Resolutions of the Ministry of Environmental Protection of Ukraine that was registered by Ministry of Justice of Ukraine



1.3. JI Projects Approval Process

- It was issued two resolutions of the Ministry of Environment Protection of Ukraine (MEP) in which were determined the Requirements to the PIN and PDD contents and which were registered in Ministry of Justice of Ukraine 2 August 2006 (according procedure State Registration Procedure).
- PIN – MEP: 17.07.06 № 341, Ministry of Justice: № 341 – 925/12799
- PDD – MEP: 17.07.06 № 342, Ministry of Justice: № 342 – 926/12800



1.4. JI Projects Approval Process.

- Procedure consists of two steps:
- 1. Preparation PIN with request for the Letter of Endorsement to the Ministry of Environmental Protection of Ukraine.
- 2. Preparation PDD with request for the Letter of Approval to the Ministry of Environmental Protection of Ukraine.



2.1. Requirements to the Letter of Endorsement

- Information about entity activity and its' financial state, scope of the JI Project
- Idea of the JI project
- Preliminary estimation base scenario and emission reduction
- Preliminary additionality assessment
- Preliminary estimation of the influence for environment



2.2. Barriers To Getting the Letter of Endorsement

- Unsatisfactory financial state of the proponent
- Project description details or other faults removal are required (resubmission is possible)
- Principal impossibility to accept the project as JI (resubmission is impossible)



2.3. Reasons of principally rejection a JI project

- Financial state of the proponent can not be submitted
- Proponent field activity is far of the JI project subject
- JI project doesn't excepted local community
- Potentially ERUs investment very low of the JI project cost



2.4. General Requirements to a JI Project

- Facilitating to sustainable development
- Avoid negative environmental impacts
- Meet social-economic needs local community
- Response State strategy policy in field activity

3.1. JI projects pipeline

JI projects	Quantity
JIP submitted to the Ministry of Environmental Protection of Ukraine	82
JIP submitted to JISK	16
JIP which have got the Letter of Approval	12
JIP which have got the Letter of Endorsement	70
Total investments, Billion €	3,67
Expected ERUs, million ton CO₂ eqv (for period 2008-2012)	92,9

3.2. JI projects pipeline. The Types of projects

No	Type of the projects	Project cost млн €	Emission reduction 2008-2012 T t CO ₂ eqv.
1	Industry Technology process modernization	1 626,5	15 647 728
2	Renewable sources of energy	609,7	6 260 992
3	District heating supplying system modernization	459,4	4 652 799
4	Cogeneration	382,3	10 270 440
5	Heating supplier installations rehabilitation	167, 4	1 146 970
6	Coal methane utilization	116,6	22 904 376
7	Utilization landfills' gas	96,7	6 334 992
8	Co-generation on the gas transportation system	43,8	1 930 733
9	Cocks gas Utilization	40,7	1 375 100
10	Utilization methane on the gas transportation system	31.9	12 678 945
11	Catalytic removal of nitrogen	18,1	7 302 925
12	Sewage water methane collection and utilization	5,2	292 950

3.3. JI projects pipeline.

***JIP* which have got Letter of Approval**

1	Switch from wet-to dry process at Podilsky Cement, Ukraine in city Kamyanets Podilsky
2	District heating supplying system modernization in Donetsk Region
3	District heating supplying system modernization in Chernigiv Region
4	District heating supplying system modernization in Crimea
5	Rehabilitation Hydropower Station in Ukraine
6	“Heat and Power Production on Stripped Casing-head Gas at Boryslav”
7	“Mine methane utilization at Coal Mine named after A.F. Zasyadko, Donetsk, Ukraine”
8	Coal mine methane incineration at the ”Pervomaysk Coal Mine”
9	Mine methane utilization at Coal Mine named «Komsomolets Donbasa»
10	Methane Capture at the Dergachi Solid Waste Landfill in Kharkiv oblast
11	Introduction of energy efficiency measures at ISTIL mini steel mill, Donetsk
12	Installation Wind Power with capacity 300 MW at Crimea

3.4. The JI Projects Type and needed investments per ERU

<i>No</i>	<i>Project Types</i>	<i>JI Project Quantity</i>	<i>Investments per ERU</i>
1	Utilization methane on the gas transportation system	3	€ 2.5
2	Catalytic removal of nitrogen	4	€ 2.5
3	Coal methane utilization	11	€ 5.1
4	Utilization landfills' gas	18	€ 6.0
5	Renewable sources of energy	8	€ 14.3
6	Cocks gas Utilization	3	€ 16.0
7	Landfill and sewage methane collection and utilization	1	€ 17.7
8	Co-generation on the gas transportation system	4	€ 22.7
9	Cogeneration	12	€ 37.2
10	District heating supplying system modernization	8	€ 42.0
11	Industry Technology process modernization	7	€ 64.6
12	Heating supplier installations rehabilitation	2	€ 98 / € 273

3.5. JI Projects submitted to JISC

Switch from wet-to dry process at Podilsky Cement, Ukraine in city Kamyanets Podilsky
District heating supplying system modernization in Donetsk Region
Introduction of energy efficiency measures at ISTIL mini steel mill, Donetsk
“Mine methane utilization at Coal Mine named after A.F. Zasyadko, Donetsk, Ukraine”
Reconstruction of LT, „Alchevskcoke” based on new coke technology
Landfill methane capture and flaring at Yalta and Alushta landfills, Ukraine in Crimea
Mine methane utilization at Coal Mine named after Kholodna Balka, Donetsk Region
Installation Wind Power with capacity 300 MW at Crimea
Implementation cogeneration installation LT, „Alchevskcoke”
Landfill methane capture and utilization Poltava landfill
Implementation energy conservation programmer “Mittal Steel Кривой Рог ”
Mine methane utilization at Coal Mine named after “Тchyglovska Hlyboka”
Mine methane utilization at Coal Mine named after №22 “Komunarska”
Mine methane utilization at Coal Mine named after “Komsomolets Donbassa”
District heating supplying system modernization in Chernigiv Region
Mine methane utilization at Coal Mine named after “Komunarska”

3.6. JI Project Approved by JISC

Title	Switch from wet-to dry process at Podilsky Cement
Short description	Preparation of the site, including removal of obsolete installations; Installations of equipment for milling and homogenisation of raw material; Installations of a precalciner and preheater tower; A new kiln for dry cement production; Mothballing of the wet kilns
ERU, t CO ₂ eq	3 023 403 2008-2012
Project cost	140 million €
Project Participants	CRH Finance Limited - Ireland



Energy efficiency potential for Ukraine

- Rational energy efficiency potential forms nearly 60 mln t. per year at necessary investments of 2.5 billion US\$ per year, and nearly 10 billion US\$ per year on the Program as a whole.
- More real potential of energy saving is 20 - 25 mln. t per year.



Specific operational consumption of energy resources for generation of 1Gkal of heat in the field of district heating

in Ukraine:

185 - 190 kg s.t.

in the countries of EU:

140 - 150 kg s.t.

Over-expenditure of energy resources leads to emissions into the atmosphere correspondingly about 45 g/MJ CO₂, and about 25 g/MJ CO₂

Potential of specific CO₂ emissions reduction in municipal heat energy achieves:
20 g/MJ

SOME JI PROJECTS ON GHG EMISSION REDUCTION AT DH ENTERPRISES, PREPARED BY THE INSTITUTE OF ENGINEERING ECOLOGY

##	Implementation place, Supplier	Rehabilitation of boiler equipment	Rehabilitation of heat supply networks	Implementation of CHP equipment	Cost of project implementation, mln €	Expected effect of project implementation		
		Number of boiler-houses (boilers) under rehabilitation	Length of network under rehabilitation, km	Total capacity, MW _e		Annual fuel saving, ths t s.f.	Reduction of CO ₂ e emission, ths t	
							Annual	2008–2012
1	Autonomous Republic of Crimea, LE “Krymteplocomunenergo”	188 (464 boilers)	43	3	14.5	47.1	120	600
2	Chernihiv region, JSC “Oblteplocomunenergo”	189 (438 boilers)	49	-	11.3	26.6	45	220
3	Donetsk region and city, RME “Donetskteplocomunenergo”	325 (732 boilers)	141.2	10.2	38.0	50.1	140	690
4	Rivne city and region, DE “Teplotransservis” of CHSE “Comunenergia”	10 (33 boilers)	20.8	33,7	17.8	33.9	60	390
5	Vinnitsa city, RSCE “Vinnitsateplocomunenergo”	56 (133 boilers)	71.5	-	5.7	28.8	40	200
6	Dnipropetrovsk city, RCE “Dniproteploenergo”	159 (410 boilers)	1.2	-	4.7	9.3	15	75
7	Khmelnysky city, CCE “Khmelnyskteplocomunenergo”	16 (20 boilers)	115	4	12.5	15.7	30	150
8	Kharkiv city and region, IRC “Teploenergo”	542 (1441 boilers)	-(34.7)	-	15.4	50.4	80	360
9	Zhitomir city, LEHN “Zhitomirteplocomunenergo”	13 (97 boilers)	-	-	0.6	3.9	6.6	33
10	Odesa city, ME “Odesteplocomunenergo”	68 (112 boilers)	72	12.5	26	46	80	400
11	Dnipropetrovsk city, PA “YuMZ”	CHP station (11 boilers)	-	122.2	100.9		150	750
12	Lugansk city, MCE “Teplocomunenergo”	125 (287 boilers)	105	12.5	39.1	17.7	50	180
13	Implementation of CHP units, JSC “Pervomaiskdiselmash”	12 units	-	6.4	2.7		20	100
14	Chernihiv landfill, PE “Techtransservice”	Landfill gas collection and utilization			6.4	13.7	80	400



What is needed for facilitating JI activity ?

- To develop needed guidelines and procedures for:
- baseline methods for different type JI projects;
- JI project monitoring and data report;
- additionality tests;
- uncertainties estimation in baseline;
- for methods for using conservative assumptions;
- GHG units transaction procedure



Thank you for attention

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