Annual Report
2013

RESOURCE EFFICIENT AND CLEANER PRODUCTION CENTRE OF UKRAINE

UNIDO PROJECT: *"Promoting the adaptation and adoption of RECP (Resource Efficient and Cleaner Production) through the establishment and operation of a Cleaner Production Centre (CPC) in Ukraine"- UE/UKR/11/001 and UE/UKR/11/002*

FUNDED BY:

SWISS CONFEDERATION
REPUBLIC OF AUSTRIA

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List of abbreviations

CPC	**Cleaner Production Centre (=RECPC)**
CP	**Cleaner Production**
ChL	**Chemical Leasing**
IE	**International Expert**
IPA	**In-plant assessments**
ISO	**International Organization for Standardization**
NE	**National Expert**
NEFCO	**Nordic Environment Finance Corporation**
NTUU "KPI"	**National Technical University of Ukraine "Kiev Polytechnic Institute"**
RECP	**Resource Efficient and Cleaner Production Programme**
RECPC	**Resource Efficient and Cleaner Production Centre**
SAEE&EM	**State Agency of Energy Efficiency and Energy Management**
SECO	**The State Secretariat for Economic Affairs (SECO) is part of the Swiss Federal Department of Economic Affairs**
SRC	**Swiss Reference Centre**
UAH	**Code of Ukrainian currency (Hrivna) according to ISO 4217**
ULIE	**Ukrainian League of Industrialists and Entrepreneurs**
UNDP	**United Nations Development Programme**
UNEP	**United Nations Environment Programme**
UNIDO	**United Nations Industrial Development Organization**

Content

Background

The UNIDO project "Promoting the adaptation and adoption of RECP (resource efficient and cleaner production) through the establishment and operation of a Cleaner Production Centre in Ukraine" aims at enhancing the resource productivity, competitiveness and environmental performance of industry in Ukraine. It supports the adaptation and adoption of Resource Efficient and Cleaner Production methods, practices, technologies and policies, providing national industries with the necessary tools to facilitate access to national and regional markets with environmentally sound products and improve the ability of national enterprises to successfully negotiate their position in the global market.

The present **5 year project**, supported by the **Swiss Confederation and Republic of Austria,** builds on the results and lessons learned during the implementation of the previous UNIDO project phase for establishing a National Cleaner Production Programme in Ukraine which has been ongoing since 2007.

The Centre

On 29 January 2013, the official inauguration of the project took place at NTUU KPI and in June 2013, the Centre ("Resource-Efficient and Cleaner Production Centre", further referred as RECPC) obtained legal status to facilitate the delivery of technical and educational services to the industrial as well as to municipal organizations.

Founders of the Centre and three main national project partners are: National Technical University of Ukraine "KPI" (http://www.inter.kpi.ua/), Science Park "Kyivska Polytechnika" (http://www.spark.kpi.ua/) and Ukrainian League of Industrialist and Entrepreneurs (http://www.uspp.org.ua/).

A Swiss consortium under the lead of the University of Applied Science and Arts Northwestern Switzerland (FHNW) was selected as Swiss Reference Centre to provide technical support to the Centre in Ukraine. In October 2013, the Swiss Chief Technical Advisor (CTA) was invited to Ukraine to assist the team of the Centre in technical as well as in strategic development.

The Centre is located at the premises of the National Technical University of Ukraine and has a professional team of experts from different industrial sectors and academic background. It follows a sector and regional approach focusing on national priority sectors, namely chemicals, agro-processing, metallurgical and metal processing industries. The target regions are Vinnitsa, Zaporozhe, Kiev, Lviv, Luhansk, Kherson & Crimea.

5 core activities of the Centre:

- *Information dissemination and awareness raising*
- *Training of national experts*
- *Technical assistance and in-plant assessments*
- *Policy advice*
- *Technology transfer and development of financial mechanisms;*

1. Introduction

The present report provides an overview of activities carried out from January to December 2013 in the framework of the UNIDO project: "Promoting the adaptation and adoption of RECP (Resource Efficient and Cleaner Production) through the establishment and operation of a Cleaner Production Centre (CPC) in Ukraine" and highlights results achieved.

1.1. Highlights in 2013

- *29 January – **official inauguration** in Kiev*
- *RECPC registered as **independent legal entity** in June: Steering and Advisory Board meetings held*
- *FHNW selected as Reference Centre and CTA appointed*
- *Regional Focal Points operational in **Kiev, Vinnitsa and Zaporozhe***
- *Cooperation with **Odessa Academy of Food Technology** started*


Серія АВ № 529930

ЄДИНИЙ ДЕРЖАВНИЙ РЕЄСТР ЮРИДИЧНИХ ОСІБ ТА ФІЗИЧНИХ ОСІБ-ПІДПРИЄМЦІВ

ДЕРЖАВНА РЕЄСТРАЦІЙНА СЛУЖБА УКРАЇНИ

ВИПИСКА
з Єдиного державного реєстру юридичних осіб та фізичних осіб-підприємців

ОРГАНІЗАЦІЯ РОБОТОДАВЦІВ КИЇВСЬКА МІСЬКА ІННОВАЦІЙНА ГАЛУЗЕВА ОРГАНІЗАЦІЯ РОБОТОДАВЦІВ "ЦЕНТР РЕСУРСОЕФЕКТИВНОГО ТА ЧИСТОГО ВИРОБНИЦТВА"

Ідентифікаційний код юридичної особи:
38792140

Місцезнаходження юридичної особи:
03056, м.КИЇВ, ПРОСПЕКТ ПЕРЕМОГИ, БУДИНОК 37, КОРПУС 6

Дата та номер запису в Єдиному державному реєстрі юридичних осіб та фізичних осіб-підприємців про проведення державної реєстрації:
11.06.2013, 1 073 102 0000 024611

Under supervision of the Centre **12 RECP assessments in companies from Vinnitsa and Kyiv were successfully finalized** and **18 national RECP experts** in 2 regions were trained and received the UNIDO certificate.
Results of RECP projects at company level in Kiev and Vinnitsa regions:

Total economic savings identified in 2013 brought economic savings of more than **3.3 mln EUR/y** and
- reduction in materials consumption – 4,272 t/y
- reduction in water consumption – 106,708 m3/y
- energy savings – 33,424.8 MWh/y
- reduction of CO2 emissions – 8,666 t/y

1.2. Overview of the results in 2013

Activity	Results in 2013
Cooperation and communication with project stakeholders in the country	 On 29 January 2013, the **official project launching** ceremony took place at the National Technical University of Ukraine with the participation of **more than 200 representatives** from the Ukrainian Government, international organizations, financial institutions, scientific and research institutions, industry and media. The high level event was followed by **the Steering Committee meeting.** On 5 July 2013, the Steering Committee **Working Group Meeting** was organized to discuss semi-annual results of the project. On 9 October 2013, the **first Advisory Board meeting** with the participation of representatives from different ministries, state agencies, the Ukrainian League of Industrialists and Entrepreneurs and Ukrainian Chamber of Commerce was organized to discuss the Board regulations and possibilities for future cooperation on RECP promotion and implementation in the country.

Technical assessments	 **12 in-plant assessments** in Kiev and Vinnitsa successfully finalized. **20 new start-ups** of RECP assessments initiated in September-December. **Special equipment** for in-plant assessments were purchased (nine measurement instruments) **New templates** were developed for IPA assessment reports and applied
Training	 **18 national experts** in Kiev and Vinnitsa trained and certified. **56 new experts** are invited to participate in the project phase 2013-2014

International cooperation	The Centre became an **official member** of the UNIDO Global Network for Resource Efficient and Cleaner Production www.recpnet.org. Representatives of the Centre participated in the **Global RECP meeting**, organized by UNIDO and UNEP in September, in Basel, Switzerland The Centre has provided a contribution to the development of the Knowledge Management System of the RECPnet.
Policy analysis and advice	 In cooperation with the international experts a **quick review of CP related policies** in Ukraine and an in-**depth analysis of gaps** in the Ukrainian legislation were carried out. Several **meetings with the Ministry of the Ecology and Natural Resources** to discuss and jointly revise the legislative documents were organized. On 8 October 2013, **the round table on RECP policies** was organized with the participation of Ministry of Economy and Trade and Ministry of Ecology and Natural Resources of Ukraine, among other state organizations.

Conferences and Round Tables	 **Two final conferences:** in Kiev and Vinnitsa to present the results of the RECP assessments and raise the awareness on activities of the Centre were organized. Participation at **a number of national and international thematic events**, among them: • The round table with the Ukrainian agricultural associations • International seminar and fair "Saving the Climate Together" (October, Kiev). • II International Forum for Sustainable Business Development "Green Mind" (October, Kiev) – as **a partner of the forum.** • 

Financial mechanisms	 **Cooperation agreement between the UNIDO and IFC** (on cooperation in Ukraine) was signed. **Joint trainings** with the IFC team in Kiev were carried out. Technical evaluation of two companies has been finalized and **identified financial proposals** revised by the IFC. **Cooperation with NEFCO** was intensified. The Centre assisted the company Promgaztechnology Ltd to prepare and submit a business plan for the NEFCO credit line.
Gender mainstreaming	 The **gender study** was conducted. The **RECP staff received training** on gender issues and a focal point was set-up. **The gender report** with the analysis of the current project status and with proposals for gender mainstreaming was elaborated.

Information on RECP	 A new **website of the Centre was developed** and now available in **3 languages** under www.recpc.kpi.ua. Number of information materials and publications related to the RECP activities in Ukraine were developed and distributed.
Toward Financial Sustainability	Centre starts an IPA service provision on commercial basis at company level. ***On-going projects on the commercial basis with the Centre:*** **Mogilev-Podolskiy Machine Building Plant** **Kalinivsky machine building plant** **Mayak** **OJSC "Kombinat stroyindustrii"** **OJSC "Beton ot Kovalskoy"** ***Potential customers of the RECP options on the commercial basis:*** **OJSC "Ukrgraphit"** (TOR agreed with Company; Contract prepared) **Tripillya cardboard factory** (Services agreed; Contract is preparing) **Concern "Yaroslav"** **Brovary Concrete Plant** **Illintsi sugar plant**

➔ The management of the Centre has analyzed the **progress made towards the Work plan 2013** and also drawn up some conclusions on **lessons learnt** from all key activities (below).

2. Progress made towards the Work plan 2013

The work plan 2013 was taking as a basis the plan of the PD, but adapting it to the given conditions (delay with the registration, financial difficulties etc). The work plan targets are less ambitious than those which are highlighted in the PD for the second year of the project. The work plan 2013 was approved by the donors; that is why it can be used here for the analysis of the annual progress made.

The implementation progress is presented in the table below:

Outcome	*What was planned in the Work plan 2013*	*What was achieved*
1.1 Operation	- **1** launching ceremony	**1**
	- **3** Steering Committee meetings	**2**
	- **1** Advisory Board meeting	**1**
	- **13 recruitments** for the year (see the Work plan)	**11 recruitments**
	- **Establishment of working places**: 2 rooms +1 meeting room	**3 rooms +** 1 meeting room in Kiev. 1 room + 1 meeting room in Zaporozhe
	- **Office equipment** to be purchased	**Office equipment** have been purchased
	- **Registration of the Centre**	**State registration completed**
	- **Business strategy**	**Numerous meetings and discussions took place**, but the development of the business plan is postponed
	- **Internal regulations**	**Postponed for the beginning of 2014**
	- **Organizational structure**	**Completed**
	- **Gender mainstreaming report and strategy**	**Gender mainstreaming report and draft strategy elaborated as well as gender platform working group established**
	-	
1.2 Training	**Database of experts**	**Prepared and updated regularly**
	CTA selected	**Appointed**
	Min 10 CP experts involved in each region (3)	**4 CP experts**
	21 Workshops per year (total)	**21 Workshops per year**
	30 certified NEs	**18 certified NEs**
	10 experts trained in the "training for trainers"	**23 experts**
	Training materials improved	**regularly for each event**

	Exchange platform of docs established and used	**+**
	2 seminars on chemicals management	**+**
	3 final conferences	**2 conferences**
	-	**-**
2.1 Awareness raising	**2 contacts per month with industrial and professional associations**	**2 RECP seminars for Association of farmers and small landowners of Vinnitsa region**
	Partnership with 1 bank association and 1 bank	**ProCredit Bank interested but realization of draft action plan is refused due to the economic situation in the country**
	1 calendar of national and regional events	**+**
	Web-site developed	**+**
	2 seminars at exhibitions/fairs	**2 Fairs, 1 Forum**
	1 video spot + 1 longer video	**1 video-spot on RECPC activity within Final Conference in Kiev (11th July 2013). Broadcasting at UTR Channel. Concept of scenario for longer video developed**
	-	**-**
2.2 IPAs	**22 assessments (2012-2013)**	**12 (finalized reports)**
	New agreement template	**+**
	30 IPAs in 3 regions (new)	**20 new initiated**
	Min. 50 travels to regions	**+**
	3 case studies	**2 case studies (Annex 6)**
	Database of companies	**+**

The progress made towards the Logical Framework has been also analyzed, although it is not easy in all cases to estimate a real "progress" (the draft analysis see attached in **Annex 16**)

3. Lessons learnt and ideas for improvements

Activity	Analysis and needs identified:	Recommendations	Conclusions
Work plan implementation	1. In-plant activity: - to develop sustainable procedures for RECP introduction at the enterprises; 2. Trainings: - to strengthen the control over well-timed trainings (workshops) preparation in Kiev region; - to update the RECP handbooks; 3. Awareness raising: - to continue the search for the most efficient forms of cooperation and institutes (the Ukrainian League of industrialists and entrepreneurs, Ministry of Economy, Ministry of Ecology, production departments of local administrations); 4. Define forms of cooperation with SRC	-monitoring RECP options implementation at companies (monthly, Coordinators); analysis of RECP options implementation: number proposed/implemented - to develop the website content, such as success stories about successful cooperation with the enterprises; -weekly control on preparation at stuff meetings (Coordinator, Director); -2 parts of toolkit should be updated; -control and analysis of cooperation: meetings/results (how many companies recommended, programs participated, documents developed); 4.Discuss with SRC proposals (IPA participation at companies level, RECP development, training materials development)	The big complication for work plan implementation is instability of economic situation. In such conditions it is difficult to look for the enterprises that would agree to assessment of their operation. The second aspect is related to a long-standing period of the Centre establishment (which lasts until now).
Team creation	1. Coordination of technical specialists work on certain enterprises is needed (by director, technical director, technical advisor)	Weekly reports at technical stuff meeting (Tuesday); reporting in staff meetings twice per month	The fact that many people work only part time is a challenge.

	3. Strengthening of control over duties implementation by the Centre staff 2. The Centre team is still being formed and in regions it is only regional coordinators working on the project. 3.InVinnitsja region RECP trainees (post-graduate students) do not believe in possibility of RECP options solutions implementation. Probably it is a result of a gap between the topics of scientific works prepared by the post-graduate students and works proposed under the project.	To involve technical specialists for Coordinators support (2 technical specialists at region) A working group has been formed composing lecturers and post-graduate students from VCI[1] in Vinnitsa. They are less ready for conducting works on RECP introduction but there is potential for progress due to their steady interest towards the project.	Creation of efficient working groups of trainees at VNTU[2] and VNAU[3] is a challenge in Vinnitsa region.
Regional expansion	Regional expansion envisages: 1. The necessity of preliminary work for the project expansion in regions (Lviv, Luhansk) 2. There is a luck of special equipment and experience in IPA in regions. Additional support (creation of new opportunities but not at the expense of work quality) as more regions to be involved and more costs should to be anticipated. Unfortunately, the coordinators still do not have good assistants on sites. Centre will try to involve as many experts as possible into the project implementation, but staff does not expect that it will happen soon.	Organization of workshops with local administrations (with assistance of ULIE) – 1 Awareness Raising seminar in region The Centre helps them with methodological support in conducting seminars, assessment of the enterprises, performing measurements, development of the reports. Support in local sites establishment (analysis of financial opportunity for regions)	Work in the regions is performed mostly by the project regional coordinators but not experts
Operation of the Centre	1. Centre operation regular control 2. Improving preparation	1.Conducting of the staff meetings of the Centre team (Monday, 17.30 –	

[1]Vinnitsa Cooperative Institute
[2] Vinnitsa National Technical University
[3] Vinnitsa National Agrarian University

	for the meetings for effective discussion. 3. Basic procedures need to be enforced for important jobs. The yearly work plan will have to be discussed with the objective to make it well understood. 4. Accounting to be more hands on, and to provide a monthly expenditure report. Region coordinators have to be more involved in important decisions & work. 5. The Centre has been established. The Centre ability to perform tasks is being tested. It is necessary to plan the Centre work for 2014 from more practical aspect with consideration of possible risks. Maybe some of the time plans should envisage alternative options. 6. Organizational work is internal work of the Centre management. But we would like to focus the project management attention on the fact that practical implementation of the project requires more time and additional resources than it may seem at the planning stage.	18.00 – organizational and operational issues; Tuesday, 17.00 – 18.00 – technical issues of the enterprise assessments). Minutes of meetings are maintaining for regular control of solutions adopted Control the preparation of subcontract reports materials: - on regional level; - on individual level; - financial reports. To enhance the efficiency of the Centre operation we should focus our efforts on those companies which demonstrate commitment and readiness to participate in our joint work and provide sufficient support.	
Trainings	1. Optimize cooperation with SRC: 2. Optimize national experts' selection both quantitative and qualitative one. 3. Trainings has to be more practical and specific and not only in the training room 4. Statistics. It should be noted that staff was trying to involve more national experts into the project work; additional efforts	Open discussion to clarify SRC responsibility: - work at the enterprises concerning technical proposals development; - participation in the workshops materials preparation. Selection should be identify ability: -technical analysis; -measuring experience; -professional experience	

	will be taken to involve more national experts. 5. One of the drawbacks seems to be the lack of clear picture of how to use the training platform, possibility to use it for placing training materials and methodologies, exchanging experience. It's not clear how to obtain direct consultations from the experts participating in the project including the Swiss experts.	Develop a mechanism for motivation of the best national experts. We are planning it to be more intensive from January to May. Indentify what topics should be charged for SRC (training on WS, toolkit revising) Organize seminars on regular base in the Centre for exchanging experience on selected projects and regions.	
RECP assessments + implementation	1. Effective application of measuring equipment. 2. Presentation of the results of work with the enterprises on the website 3. Monitoring of operation progress on weekly basis 4. The assessment process should be more projects oriented. The results should be the engine driving the work. Our plan is to follow projects closely after obtaining IPA data. The coordinators to update regularly the Centre about IPA status. They are the ones knowing the best companies and their management 5. Preparation of brief reports on progress of work with the enterprises. We faced the situation when a brief report was not recognized as a justified recommendation, especially, it was not accepted by the enterprise engineering and service departments..	Information on opportunities is placed on web-site On regular base (should be refreshed each week) According to minutes of staff meetings Discussion on technical issues is organized each Tuesday; each day on requirements with experts and Coordinator Keep momentum up. Things that can be done fast should be done first. Options requiring support need coordination: involving the right person at the right moment. In our opinion reports for the enterprises should be more justified and better	There are difficulties with obtaining all necessary data on the enterprise functioning (due to absence or lack of technical control) for appropriate analysis and assessment of the production efficiency. This requires additional time to collect data. This is a common problem for many enterprises. Almost all enterprises which have

		structured. It is necessary to prepare reports for each stage of the project. Information about each discussion or a working meeting of the project team regarding work at the enterprise is provided to the enterprise management	undergone assessment are still not ready for introduction of individual options into their operation. It is explained by economic situation instability and ineffective system of bank crediting of the enterprises (very high interest rate). The enterprises introduce low cost measures or measures which require no additional costs.
Technology transfer	1. Development of the mechanism for interaction with SRC partners to information exchange on possible transfers (technical parameters, financial arrangements etc.). It can be a unique and practice oriented, but it has to be more opportunity driven. We are planning for more practical involvement during and after IPA. 2. Technologies transfer is possible only on condition that enterprises are ready to make investments into proposed options. So far mostly low cost measures are introduced.	Technical requirements on new technologies should be identified and prepared for SRC partners (monthly) Discussion at companies level should be organized by experts to get information on investments and ability of the company to charge finances	There is a certain interest in innovation in Companies; this interest is close relates to new equipment, processes etc. Companies are interesting in both innovation and investments
Financial mechanisms and cooperation with banks	1. Enhancing of cooperation with NEFCO and IFC in such directions:	Regular meetings organized with NEFCO, IFC	The weak involvement of Ukrainian banks in crediting

	- improvement of reports for the enterprises based on local conditions (acceptance of technical proposals, “clarity” of proposals for banks); - preparation of financial credit proposals (based on gained experience on credit terms and the amount of interest rate). 2. Discussing with the IFC the possibilities in Vetropack.	Financial institutions requirements should be clarify; common approach should be set up (report, peculiarity of communications with company) Joint RECPC and IFC seminar should be organized Information on potential clients are delivered on regular basis	projects related to the resource and energy efficiency of SMEs is due to the fact that banks cannot offer credit terms with reduced interest rates. At the same time, SMEs are not willing to borrow expensive credits for resource- and energy-efficient projects. According to the survey in 85% of cases SMEs will finance the resource- and energy efficient projects by own funds and do not ready to take the credits. Banks in Ukraine in recent years have become more oriented to the consumer credit segment. 4. Preparing investment is a time consuming job and it can be done only when companies pay for that.

Stakeholders dialogue	1. Selection of types of cooperation with the stakeholders: - motivation of cooperation and different ways of mutual assistance (preparation of contracts with the enterprises, searching for clients in the industrial sector); - searching for the fund raising and opportunities to participate in state programs.	Communication with stakeholders on regular basis; reflection of this cooperation in indicator: number of meetings/results (number of contracts, companies visits etc)	
Services and business development	1. The necessity to receive "successful examples" of technological proposals (success stories). There are a specific problems with dissemination of technical issues due to the confidentiality of information	Business plan development (till the end of the half year 2014) by GIZ and SBA support; 2 persons in RECPC are involved Monitoring of the RECP options implementation . Increasing capacities of specialists as regards implementation of the Centre proposals: - ongoing analysis of the situation with the implementation (organizational difficulties, financial ones) and selection of the most perspective enterprises and implementation ways; - development of cooperation with the enterprises performing RECP projects.	
Awareness raising and PR	1. Cooperation with mass media should be strengthened.	Relationships with media should be established (TV specific channel, ULIE opportunities will be used); 2 reports for TV should be prepared	
Gender	1. Gender legal framework has been developed for all levels and in all areas however practical	1. Steps made in the Gender direction require enhancing by institutional means	1. Gender integration process at the Center was

	implementation of legal acts is not at appropriate level. 2. Labour policy has limited legal barriers for women however it needs to be improved. 3. Educational system has no legal barriers for women on technical education however in practice it is full of gender stereotyping. 4. Economical activity of women is high enough however it is not relevant to their income and real participation at levels of decision making. 5. Access to credits for women is limited by non-financial barriers related to their social gender roles and stereotyping. 6. Industry has substantial gender disproportions at the labour market as well as the wage gap which usually increases during recession period. 7. The main stakeholders have some knowledge on gender issues however usually it is not enough to fully implement gender components in respective areas. 8. Women's business associations are not developed enough to be promoters of gender transformations in industry 9. The lack of women in industry is one of risk factors for the field as a whole and for the project particularly. 10. The CPC has the potential for addressing gender issues in the frame of the project.	including approval of gender strategy, plan and appointment of gender focal point. 2. Specific character of the Center operation and limited number of experts able to provide practical support in gender policy implementation should be considered; it requires more active involvement of the Center personnel and partners into dissemination of gender related knowledge and skills.	being developed gradually from a "zero" point to receiving systematic knowledge and skills by the Center personnel and implementation of practical steps due to the Center management political will
Use of RECP methodology	1. Methodology placed on the UNIDO website is used as training materials. But methodology is of rather general	1. The elaboration of the national benchmark system should be	

	advisory character and the lack of practical application and engineering approaches. Due to this reason technical staff of the Centre has to adopt it based on own experience of work with various enterprises. 2. The lack of benchmarking is the second problem in RECP methodology implementation. We have to spend more time for searching for information to be used for comparative analysis rather than for work with the enterprises. Information provision needs to be improved. 3. The ecological component is lacking. Currently the enterprises face problems when preparing their reports. We do not collect information on life cycle. We cannot provide information requested in the reports on how carbon impact will be decreased at the enterprises due to the project works performed.	initiated at the level of National Statistic Service 2. Technical staff of the Centre needs additional knowledge on ecological impacts, LCA and RECP technologies	

4. Team of the Centre

The staff of the Centre together with young CP experts from Kiev region

4.1 Overview

In the beginning of the year, **the candidature of the director** of the Centre (Mr. Igor Shylovich) has been approved by the Steering Committee members.

The national staff of the Centre has **grown from 5 persons at the beginning of 2013 to about 20 persons at the end of 2013. The Centre has recruited both new permanent staff and part-time consultants** specialized in different areas to support the Centre in its continuous development. **The office spaces in Kiev were extended** and new office equipment was purchased to organize individual working places for the staff as well as for trainees.

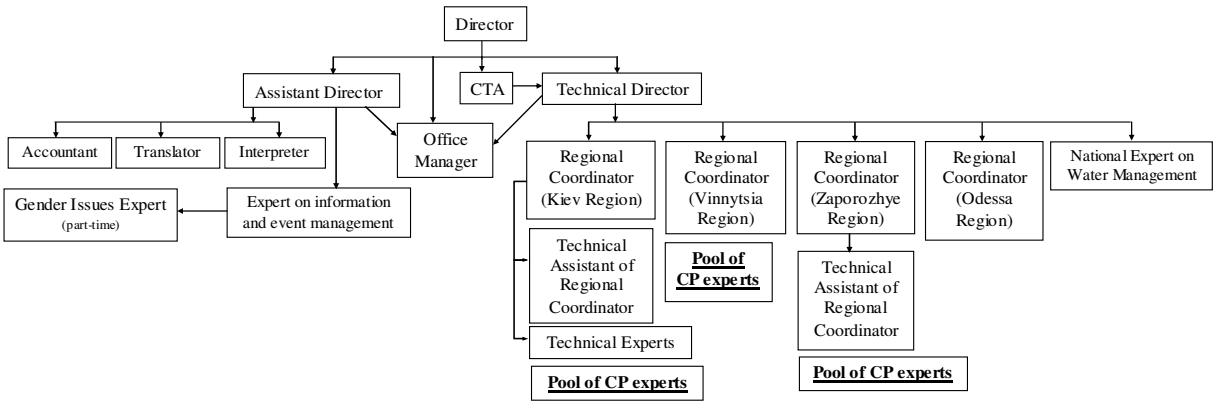
The Centre's recruitment approach aims at involving **young and talented specialists** just as well as very **experienced professionals**, thereby strengthening the capacity for further growth and development of the RECPC team.

The Centre has also established **close cooperation with experts of the Swiss Reference Centre** who provided in 2013 the assistance in areas of technical assessments, trainings, cooperation with financial organizations as well as in RECP policy development.

In October 2013, **the Chief Technical Advisor, a high-level Swiss technical specialist with more than 30 years of industrial experience, has received an annual assignment** at the Centre to assist it with in-plant assessments and with the strategic as well as operation planning. His working place is located in the Kiev office of the Centre.

4.2. Structure of the Centre

The structure of the Centre has been several times reviewed and updated. The **latest organization structure of the team of the Centre** is presented below:



The team of the Centre consists of the **core staff** (most of them are recruited by UNIDO directly) and **subcontracted consultants** (experts from different areas working with the Centre on full as well as part-time basis).

See the list of all recruited experts with details on their professional background and assignment at the Centre as well as the human capacities needs for 2014 in Annexes 14 and 15. The CVs of the subcontracted specialists are available in Annex 2.

4.3. The CTA role in achieving the Centre sustainability

Giustino Rampa was involved in the UNIDO project as a Chief Technical Assistant. He graduated from ETHZ in 1974, Dipl.MaschINg. and IMD (International Institute for Management Development) - Business Programs in 1997, Leadership competence program. Mr. Rampa has skills and experience in Technology Development, Strategic Planning, Renewable Energy, Talent Management, Coaching, Product Development, Food, Solar, Process Engineering, Project Management, Cross-functional Team Leadership, and Engineering. He worked for 33 years in Nestlé Company in 5 different countries.

Duties performance

The CTA has been performing his duties in full volume in compliance with the Center technical tasks. He was deeply involved into the Centre activities related to in-company technical RECP assessments. Having big experience of work in the countries with transitional economy; he understood very well challenges faced by local companies and thus his technical recommendations were of really applicable character, efficient and well accepted by both the companies top managers and managers of middle level.

It was also quite easy for him to establish good communication with the project management.

In addition to technical consulting the CTA also provided useful advice on the Centre administration, planning, personnel management, record keeping, accounting and strategies issues.

Achievements

- Changes in the project vision as regards practical results of the project implementation for local companies, and, correspondingly, the project vision.
- Negotiation of the companies' managers in results based management approach introduction – increase of economic efficiency on the company level and creation of new jobs in the country.
- Improvement of reporting system via its simplification
- Establishment of good partnerships with the Center founding members and project stakeholders.

4.4. Gender mainstreaming

In addition, the Centre has included Gender mainstreaming aspects in the development of the organization. Following the strategy of UNIDO on gender mainstreaming, a gender consultant was recruited for several months to build capacities of the team in gender issues and conduct a gender study.

Discussion with the team on the gender survey

Gender mainstreaming process has been developed gradually from a "zero" point to receiving systematic knowledge and skills by the Centre personnel and implementation of practical steps.

The report of the Gender expert is provided in **Annex 5**. Overview of results is presented below:

Documents updated/developed:

- A Report "Opportunities for introduction of gender equity principles into the RECPC operation in Ukraine" (July).
- Introduction of changes to the Manual on Cleaner Production (Part 1 – 4), Kyiv, 2012 with consideration of gender equity principles.

Gender capacity of the Centre:

- Several training courses and discussions were organized.
- Gender disaggregated statistics were collected and analyzed
- Centre gender focal point was appointed.
- Monitoring, evaluation and planning of tasks after each gender training was performed.
- Draft Gender Strategy was developed.

Partnerships and networking:

- The Centre established partnerships with various structures working in gender equity area – Information and Consulting Women Centre, Gender Strategic Platform, Gender Centre at KPI.

→ Gender aspect will be further considered in the development of the Centre's strategies and future activities on different levels and with different stakeholders: industry, science and the Government.

5. Key activities of the Centre

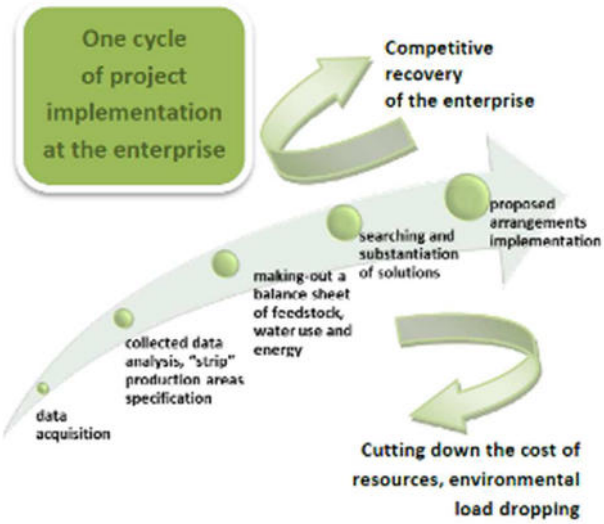
5.1. RECP implementation

5.1.1. Finalization of companies' assessments (started in 2012)

a) RECP assessment, methodology and NCPC approach for working with the companies

The UNIDO approach to the ***Resource Efficient and Cleaner Production (RECP)*** *is represented as preventive integrated strategy of the whole production cycle in order to:*

- *improve the efficiency of feedstock, energy and water use;*
- *decrease of the adverse environmental impact at the expense of reduction of waste output amount and the emission in the sites of their generation;*
- *reduce production deleterious effect on the environment in the course of its life cycle.*



One cycle of RECP project implementation at the enterprise

RECP in-plant assessment of production processes is one of the essential steps of the RECP implementation at company level. ***RECP in-plant assessment*** allows assessing the rationality of use of material and energy resources at the enterprise as well as the cost of unsustainable losses of production. This is accomplished by compiling detailed balance sheets of material and energy flows of technological processes. Another distinctive feature of the assessment is its comprehensive approach to the entire enterprise as a whole.

After RECP in-plant assessment the adoption of any technical solution at the enterprise becomes more professional and reasonable being based on clear quantitative calculations and long-term plans.

The Centre started RECP assessments at 17 companies (**19 RECP pre-assessments have been initiated** including 3 projects in NTUU KPI) **in 2012**. After the pre-assessment phase, at the beginning of 2013 few companies and CP experts from Kiev region demonstrated the lack of commitment and left the project.

New measurement equipment

In total, 12 in-deep assessments were successfully finalized.

Total economic savings **identified** in 2013[4] - **more than 3.3 mln EUR/y,** including **savings of:**

- Reduction in materials consumption – 4,242 t/y
- Reduction in water consumption – 106,708 m3/y
- Energy savings – 33,424.8 MWh/y
- Reduction of CO2 emissions – 8,666 t/y

Total economic savings of **implemented** options in 2013 – **more than 2 mln EUR/y**, including savings of:

- Reduction in materials consumption – 2,962 t/y
- Reduction in water consumption – 80,500 m3/y
- Energy savings – 356.5 MWh/y
- Reduction of CO2 emissions – 44.6 t/y

Overview of companies which have been involved in the RECP project **in Kiev region** since 2012:

#	**Company**	**RECP project status**	**Reasons**
1.	State Enterprise "Railway Carriage Repair Works of Darnitsya"	***Finalized***	-
2.	NTUU KPI hostel No. 15	Pre-assessment only	Lack of interest for the trainees to finalize the IPA
3.	NTUU KPI sport-complex No. 24	***Finalized***	-
4.	NTUU KPI study complex No. 18)	***Finalized***	-
5.	Zhazhkov Dairy Plant	Pre-assessment only	Lack of motivation for the trainees to finalize the IPA
6.	Brovary Concrete Plant	***Finalized***	-

[4] Data from 12 finalized IPAs in Kiev and Vinnitsa

7.	Dolce Vita Ltd (dough, pastry production and baking cookies)	-	Company refused to participate in the project
8.	Boguslav Agriculture Machinery Production	Pre-assessment only	Lack of interest for the trainees to finalize the IPA
9.	Boguslav Textile Factory	***Finalized***	-
10.	Trypillya Cardboard Packing Factory	***Finalized***	-
11.	Promgaztechnology Ltd[5]	Pre-assessment and generation of technical options	Trainees left the project after the pre-assessment
12.	JSC Vetropack Gostomel Glass Factory	Final report uncompleted	Lack of interest for the trainees to finalize the IPA
13.	Ecosoft Ltd	-	Company refused to participate in the project

Overview of companies which have been involved in the RECP project **in Vinnitsa region** since 2012:

#	**Company**	**RECP project status**
1.	JSC "Mayak" (produces domestic heaters)	***Finalized***
2.	Illincy Sugar Plant	***Finalized***
3.	Vinnitska kharchosmakova factory (spices, beverages)	***Finalized***
4.	Bakery Unit (Factory) "Phoenix"	***Finalized***
5.	Vinnitsa Aggregate Plant (produce parts to pumps, etc) [6]	***Finalized***
6.	State Owned Company "Vinnitsatranspribor", Metal Processing	***Finalized***

[5] Generated technical options have been used for the development of the business plan for funding by the NEFCO. The case study is presented in Annex 6.

[6] In Annex 7 includes the Chemical Management report on this company. The final report on RECP assessment will be finalized in the beginning of 2014.

b) Description of companies from Kiev and Vinnitsa regions where the RECP assessment was successfully finalized in 2013

	Company name	Short description of the company	CP team responsible
1	JSC "Trypilsky Packing Plant" 	The main activity is production of corrugated cardboard packing. Total staffing: 300 workers. Annual production volume is near 70 000 000 m^2.	1) **CP team supervisor – Mr.Tchaikovsky** 2) CP trainee – Mr. Iu. Gaidaienko 3) CP trainee – Mr. O. Sokolskyy 4) Chief Engineer – Mr. O. Bushin 5) Energy Engineer – Mr. M. Bilichenko 6) Electrical equipment maintenance Director – Mr. G. Skidanov 7) Production scheduling and control department Manager – Mr. A. Kobets
2	JSC "Boguslav Cloth Factory" 	JSC "Boguslavskaya Cloth Factory" is included in the association of PE "Yaroslav", which takes the leading positions in Ukraine as regards production and sale of bed linen, pillows, rugs, blankets, underwear, towels, kitchen utensils and other home textiles.	1) **CP team supervisor – Mr.Tchaikovsky** 2) CP trainee – Ms. K. Pryimak 3) CP trainee – Mr. P. Pozniakov 4) Chief Accountant – Mr. V. Lugovoy 5) Chief Mechanic – Mr. G. Zezetko 6) Textile process department Director – Mr. V. Strychunenko 7) Weaving departmentDirector – Mr. T. Zezetko 8) Finishing shop Director – Mr. M. Karahanyan 9) Sewing shop Director – Mr. I. Lyashenko
3	SC Darnitsa Carriage Repaire Plant	Production operations: • building of freight open wagons of 12-9745 models; • major repairs and modernization of freight 4-axis carriages;	1) **CP team supervisor – Mr.Tchaikovsky** 2) CP trainee – Mr. D. Belanovskyy 3) CP trainee – Mr. K. Tadlya

		• forming and repair of wheel pairs for freight carriages; • repair of light carts of 18-100 models for freight carriages; • manufacturing of spare parts for a railway rolling stock.	4) Chief Energy Engineer – Mr. O. Popovych 5) Chief of central laboratory – Mr. O. Kravchuk 6) Chief metallurgist –Mr. O. Vereta 7) Chief Accountant – Ms. S. Blinkova 8) Environmental Engineer – Ms. M. Molodtsova
4	Brovary Building Constructions Plant 	The area of factory is about 400 000 m^2. Total staffing: 472 workers. Annual production volume is about 57700 m^3 for 2011 and about 42000 m^3 for 2010.	1) **CP team supervisor – Mr.Tchaikovsky** 2) CP trainee – Mr. E. Lytvynets 3) CP trainee – Mr. K. Radchenko 4) CEO – Mr. O. Padiy 5) Chief Engineer – Mr. M. Chepurnyy 6) Chief process – Mr. B. Poligushko 7) Chief accountant – Ms. S. Balabaienko
5	18 Building NTUU "KPI" 	Academic building number 18, which is a complex of buildings that are located in NTU "KPI" at Kyiv, str. Polytechnique, 41. Built 1975-1978, the building area is 36927 m^2. Number of floors: 1 (transition), 3 (Building B), 5 (case A). Number of hours per year: 2416 hours. Number of students: 2530 (full - 2110, part-time - 420). Number of employees: 234 people.	1) **CP team supervisor – Mr.Tchaikovsky** 2) CP trainee – Ms. O. Shevchenko 3) CP trainee – Ms. K. Pietushkova 4) Dean of the faculty – Mr. O. Pavlov 5) Laboratory chief – Mr. S. Ignatiuk 6) Deputy Chief Accountant – Ms. N. Shinkevych 7) Building-service supervisor – Ms. Z. Stashkova
6	24 Building NTUU "KPI" 	It is the center of physical education and sports of the 'KPI'. It contains 2 pools, 2 saunas, 8 sporting halls, shooting-gallery, large stadium, soccer field. There	1) **CP team supervisor – Mr.Tchaikovsky** 2) CP trainee – Ms. M. Shovkaliuk 3) CP trainee – Ms. I. Bilous 4) Chief Engineer – Mr. S. Sotskov

		is a buffet and barbershop in the building.	5) Senior Accountant – Ms. I.Cheboturova
7	OJSC Mayak 	Manufacturing of heat generation devices. The company has a workforce of 230 persons and an average production capacity of 500,000 units (different types of domestic heaters and radiators). The company has galvanic, assembling, press, welding and painting divisions. Assessment of powder coating conducted.	1) **CP team supervisor – Mr.V.Redchik** 2) CP trainee – Mr. V.Redchik 3) CP trainee – Mr. O. Bailo 4) Director, chief of working group – Mr. M. Chshvedchikov 5) Chief Technologist – Mr. O. Kuzmin 6) Chief Designer – Mr. S. Rudyk 7) Chief Power Engineer – V. Pohomiy
8	State-owned company Vinnitsatranspribor 	Company is located on 3.2 hectares of land and has 350 employees. The main products are locking valve devices for carriage cars and containers. Assessment of technology of mechanic treatment and galvanization conducted.	1) **CP team supervisor – Mr.V.Redchik** 2) CP trainee – Mr. O.Kchochotva 3) CP trainee – Ms. O.Foliushnyak 4) Chief Engineer, chief of working group – Mr. S. Shapovalov
9	Private JSC Vinnitska kharchosmakova fabryka 	Companies' products are distributed in 19 regions of Ukraine and it employs 101 persons. Production volume is 190,000 tonnes of kvass per year as well as other food products. Assessment of heat consumption.	1) **CP team supervisor – Mr.V.Redchik** 2) CP trainee – Ms. O.Pushna 3) CP trainee – Ms. O.Dakhnovska 4) Director, chief of working group - Ms. L. Semenyuk 5) Chief Power Engineer – V. Semenyuk
10	Vinnytsia unit plant LLC 	The company produces gear-type pumps, pump parts, hydraulic cylinders and other hydraulic devices. Assessment of technology of cogwheel cutting.	1) **CP team supervisor – Mr.V.Redchik** 2) CP trainee – Mr. I. Lebedev 3) CP trainee – Ms. T. Rumiantseva 4) Chief Engineer, chief of working group – Mr. Yu. Grychshyshyn
11	"Illinetskyi Sugar Factory" Ltd.	Production at a sugar mill plant is organized seasonally. During the peak of the production process, the company employs 230	1) **CP team supervisor – Mr.V.Pavshuk** 2) CP trainee – Mr. V. Bazalitskiy

		people with a production capacity of 17,686 tonnes of sugar beets per shift (2.5 months). Sugar production. Assessment of heat consumption.	3) CP trainee – Mr. Redchik 4) Chief Engineer, chief of working group – Mr. G. Grynishyn
12	Company "Phenix" 	Feniks is a small private bakery and produces 463,230 kg of bread products and 1,448 kg of confectionary per year. Assessment of bakery ovens.	1) **CP team supervisor – Mr.V.Pavshuk** 2) CP trainee – Mr. V. Redchik 3) Director, chief of working group – Mr. V. Stashko 4) Members of working group – Ms. O. Gnetko, Mr. O. Lysin

c) Results for each assessment, including consumption and calculated savings, and future prospective for each company /per region (Annex 7)
All summaries of reports are attached in **Annex 7**.

5.1.2. Monitoring of RECP Projects (from previous years)

The team of the Centre in 2013 has carried out a monitoring of the implementation of RECP options in the companies, which successfully participated in the previous phases of the project (2009-2011).

PC "Mayak" and company "Vinnitsatransprylad" (transport equipment) have committed to continue cooperation with the Centre on a new contractual basis. Agreement has been signed with one company - PC "Mayak". The agreement envisages partial payment of services provided.

5.1.3. Follow up projects:

1. KPI, building # 24 (sports complex):
- development of the project on introduction of the heat pump for heating the gym # 2, heat supply to the input ventilation heat exchanger for the pool;
- evaluation of design work cost and search of the company-subcontractor (50 ... 70 thousand UAH), evaluation of the cost of the heat pump introduction, payback period and possibilities of investing from the Fund of the Ministry of Economic Development and Trade (Resolution # 105).

1. **KPI, building # 18 (educational building)**:
- development of technical proposals on facilities modernization in order to reduce heat losses (usage of protective transparent screens – polycarbonate;
- partially overlapping window openings in corridors);
- technical proposals will reduce losses respectively by 60% and 30 % in general for the whole building.

2. **Ltd "Promgaztehnologiya"**:

- monitoring of implementation of the system of laser cutting elements of thermal equipment: gas burners, burner mixers etc., monitoring investment from NEFCO and project implementation management (transfer of process equipment, components etc.).
- development of the template of the business plan for usage at the enterprises.

5.1.4 Lessons learnt from the assessments

1. One of the main difficulties in enterprises assessment was and still remains obtaining of reliable data.

2. The Centre has purchased specialized measurement equipment in summer 2013. Additional measurements during in-plant assessments will result in greater labor intensity and this has to be taken into consideration. Besides, RECP experts from the Centre have to be trained on working with this kind of equipment.

3. It is difficult to establish cooperation with the enterprises. The companies are accustomed to certain approaches while working with outside service companies and expect the same approach from the Centre. They are not in much favor of training. The teams created at the enterprises are formal and not really for the purpose of training on the UNIDO CP methodology. They expect that the Centre will simply resolve their problems and are not much inclined to be involved in the approach the Centre suggests to them.

4. The task of the Centre is not just proposing ready solutions to companies but demonstrating that these proposals have been developed as a result of CP methodology application. After a number of demonstration projects only one enterprise "Mayak" in Vinnitsa expressed its strong commitment to integrate the CP methodology into the company. Probably it'll be also introduced at the "KPI".

5.1.5. Starting new RECP assessments (start-ups) in 2013

The new region (Odessa) has been involved in the project in 2013 following the request of the local stakeholders. The companies of the Odessa region are an interesting target for the project; the region is specialized in the agro processing which is one of the key sectors for the Centre.

In September-December new companies have been involved to the project in Vinnitsa, Zaporozhye, Odessa and Kiev regions.

The information on new companies, pre-assessment status and number of company visits is presented below:

The list of companies in Vinnitsa region

The list of companies in Zaporozhye region

#	Enterprises	Specialization	Agreement with a company	Pre-assessment	Number of visits
1	PJSC "Mogilev-Podolskyi Machinery Plant"	Machine building	Signed	Finished	4
2	PJSC "Kalynivskyi Machinary Plant"	Machine building	Signed	Finished	4
3	Cooperative integrated plant of industry in Nemirov (enterprise of Vinnitsa Consumer Union)	Agro processing. Food.	Signed	Finished	4
4	Private farm “Julia”	Agriculture	Signed	On-going	2
5	Private farmer Laptyev	Agriculture	Signed	On-going	2
6	Layma-Centre Co.	Agro processing	Signed	Finished	4
Total number of visits					**20**

#	Enterprises	Specialization	Agreement	Pre-assessment	Number of visits
1.	RPE ROST Ltd.	Railroad Carriage Cockpit	Signed	On-going	3
2	JSC "Zaporozhye plant of welding fluxes and glass products"	Glass production and production of welding materials	Signed	On-going	3
3	CC “International Airport Zaporozhye”	Transport infrastructure	On-going	On-going	2
4	OJSC “Ukrgraphite”	Non-ferrous production	On-going	On-going	3
5	PJSC "Zaporizhia Ferro Alloys Plant"	Metallurgy	On-going	On-going	2
6	JSC “Zaporozhavtomatika”	Manufacturing of industrial process control equipment	Signed	On-going	3
Total number of visits					**16**

The list of companies in Kiev region

#	Enterprises	Specialization	Agreement	Pre-assessment	Number of visits
1	OJSC "Kombinat stroyindustrii"	Construction material manufacture	Signed	Final phase	4
2	Autoaktiv Co.	Technical services	Signed	Start	2
3	Fastiv Plant of Chemical Machine Building "Red October"	Metal Processing	On-going	Start	1
4	Brovary Dairy Plant	Agro processing	Signed	On-going	3
5	FOP Melnichenko V.V. (Coffee production)	Agro processing	Signed	Start	2
Total number of visits					**12**

The list of companies in Odessa region

#	Enterprises	Specialization
1	Aleksandrovskiy Meat Processing Plant	Agro processing
2	Mikron Ltd	Machine building
3	Belyaevskiy Meat Processing Plant	Agro processing
4	Suneco Plus Ltd.	Alternative energetic solution production
5	Kuyalnik Mineral Water Plant	Beverages

→The final selection of the companies which will be involved in the in-depth assessment will be performed after completion of all pre-assessments. 4 pre-assessed companies in Vinnitsa region are already recommended for the further in-depth assessment.

5.2. Trainings

In 2013 a number of trainings were conducted by the Centre. Some of them were carried out in a close collaboration with international experts from the Reference Centre. Information on all trainings is presented briefly below in tables.

5.2.1 CP trainings in 2013

Training in Vinnitsa

The training activities, following the UNIDO methodology, were combined with IPAs to ensure that the participants gained practical experience in RECP assessments.

	Kiev	**Vinnitsa**	**Zaporozhe**	**Odessa**
Coordinator	Olexiy Tschaikovskiy	Valeriy Redchik	Sergiy Kalachev	Galina Krussir
A short description of	Training course covers following standard topics: pre-assessment at company level, data collection and proceeding, energy and material balances calculation, technical options development			

the training course				
Number of trainings	11 WS conducted	10 WS conducted	3 WS conducted: first visit to company and pre-assessment, data collection, introduction in energy balances calculation	2 WS conducted: company selection and first visit to company, data collection
Teachers	Igor Shylovych, Olexiy Tschaikovskiy, Valery Pavshuk	Valery Pavshuk, Giustino Rampa	Igor Shylovych, Giustino Rampa, Valery Pavshuk	Igor Shylovych, Giustino Rampa, Valery Pavshuk
Materials developed and available for use	Toolkits were published and handed to listeners; Questionnaire on pre-assessment carrying out was developed; examples of presentations and reports were handed to experts	Toolkits were published and handed to listeners; Questionnaire on pre-assessment carrying out was developed; examples of presentations and reports were handed to experts	Questionnaire on pre-assessment carrying out was developed; examples of presentations and reports were handed to experts	Questionnaire on pre-assessment carrying out was developed; examples of presentations and reports were handed to experts
# of CP Trainees participated versus certified[7]	27 participated **14 certified**	20 participated **3 certified**	15 juniors trainees involved	10 juniors trainees involved
How many trainees want to continue working with the Centre?	2	3		
Lessons learnt	Trainings positively influence the trainees' personal motivation, but not a team building. Training materials are sufficient but may be supplemented by reference materials for the individual work.			

[7] *Requirements for the certification include: completion of IPA and finalization of final report on assessed company


Awarding CP experts

5.2.2 Training of trainers (ToT)

Short description of the course	Main aims: • Training of expert trainers • Methodology and didactics / working with the UNIDO CP toolkit and additional materials and tools • Improving feedback from experts to companies • Introducing a learning management platform
Number of trainings	1
Teachers	Sybille Ganz-Koechlin, Emmanuel Oertlé
Materials developed and available for use (if applicable)	– Paper on energy efficiency case in University in Kiev, Exercise – coffee-machine, – Exercise – RECP Exchange platform-2, – Presentation on MFA, – Task Workshop ToT, – Triple T: Training methodology & didactics
Trainees	**23 participants**. The list of participants attached, **Annex 8**
Result of the course/Lessons learnt	The main conclusions and recommendations are the following: • Usual trainings from the RECP are normally "purely technical" and this ToT could bring other aspects across, such as how to approach the right person from a company in order to get your point across with most efficiency as well as adapting the toolkit for particular situations and contexts. Participants appreciated these additional "soft" skills that might sometimes be as important as the technical content.

	• All the participants were very active and motivated during the training and the general atmosphere was excellent, full of motivation, commitment and willingness to go forward. • The different tools introduced were understood by the participants and might be used in the future in the frame of RECP assessment. • There is a need to further develop and adapt a "trainer package" in Ukrainian language based on the UNIDO toolkit and other sources, in order to improve the efficiency of future training sessions conducted by the RECPC trainers.

5.2.3 Life Cycle Assessment workshop

Short description of the course	LCA workshop´s duration is 2 days. 1st day - an introduction into the LCA methodology for all interested persons from industry, administration and university. 2nd day - WS for a selected group of experts, at least one or two persons from the CP centre. During this WS not only a theoretical insight into the methodology is given but there are practical exercises with LCA software tools and databases and its use for CP framework are discussed.
Number of trainings	**3** (Kiev, Vinnitsa, Odessa)
Teachers	Fredy Dinkel & Thomas Kägi Carbotech company, Basel, Switzerland
Materials developed and available for use (if applicable)	Training materials and presentations can be provided upon a request
Trainees participated	**30 persons**
Result of the course /Lessons learnt	CP experts ready to apply LCA in RECP assessments

5.3. Policy work

Together with the international experts, RECPC worked on collecting relevant information and preparing policy assessment activities, which are planned in the Project Document. It was decided to select Focal points for CP Policy within RECPC and within the Ministry of Economic Development and Trade of Ukraine.

First of all the work plan for the policy related activities was developed:

Action	Milestone
Quick review of environmental policies	15 Feb. 2013 **done**
Template to document existing policies	15 Feb. 2013 **done**
Meeting with Ministry of Economy	7 March 2013 **done**
Revise and confirm action plan	7 March 2013 **done**
Feedback on quick review and template + suggestion of grouping categories	2013- **done**
Overview of international CP policies (Vietnam, Switzerland)	2013 – **done**
Gather all relevant laws, bylaws and documents on policies, strategies or plans at national, regional and municipal level related to CP, industry and environment	2013- **done**
Document existing CP policies according to template	2013- **done**
Presentation of main findings to Round Table on Policy and input for new CP policies	2013- **done**
CP Policy Round Table: - Role of CP Polices to enhance CP with industry - Review of existing CP policies - SWOT analysis of existing CP policies - International benchmarking - Gap analysis - Brainstorm on potential new CP policies for Ukraine	2013- **done**
2-3 Concept papers on new policies (food for thought for forthcoming roundtables)	During 2014
Feedback on concept papers	During 2014

2 Roundtables with policy makers and stakeholders' representatives	2014 – 2015
Report and action plan following roundtable	2014 – 2015
Set up of specific task force to be coordinated by RECPC	2014 – 2015
Specific follow-up and coaching of task force	2014 – 2015

Overview of activities carried out:

Activities done	**When**	**Short Description**
Development of templates and other tools	*May, 2013*	Template for providing legislation analysis was developed by the Swiss expert and adopted to Ukrainian requirements by Vyacheslav Potapenko, a policy expert recruited by Centre.
Policy gap analysis	*August,2013*	Policy gap analysis was developed in close collaboration with the policy expert from National Institute of Strategic Investigations (August 2013)
Organization of the policy round table	*October 8, 2013*	The round table "Prospects for the Development of Resource Efficient and Cleaner Production (RECP) in Ukraine – RECP Legal Framework" was organized with participation of several ministries and state agencies. Speeches were given by the director of RECPC on the topics „Resource efficient and cleaner production - an important component of the green economy and "RECPC experience at the Ukrainian enterprises". The participants discussed the CP National Concept development as well as the RECP National Plan of Action.
Participation in the policy working group organized by other stakeholders	*September 26, 2013* *November 21, 2013*	The Centre participated in the event "On the Way to Green" Ukraine - National Consulting Workshop at Scientific and Research Economic Institute (SREI). The Centre participated in the event "Green resource efficient economy: new challenges and opportunities for economic growth in Ukraine", organized by the Ministry of Economy and Trade. A speech was given by the director of RECPC on the topic "The green industry initiative and platform".

Policy working group initiative	*December 05, 2013*	The Centre has supported the initiative to establish a policy working group with different stakeholders. Working group meeting was organized at the State Institute of Strategic Investigations (representatives of Ministry of Economic Development and Trade (Musina L.), Ministry of Ecology (Trophimenko N.), RECPC Ukraine (Pavshuk V.), National Institute of Strategic Investigation (Potapenko V.)

5.4. Awareness creation

Awareness on the RECP and the Centre has been increased through organization of thematic events as well as the active participation of the Centre in the national and international seminars, fairs, round tables etc.

Final RECP Conference and Award Ceremony in Vinnitsa (03 July 2013)


Round Table with Ukrainian agricultural associations (March 2013)

International seminar and fair "Saving the Climate Together" (12-14 June 2013)

5.4.1 Overview of information dissemination activities:

Topic	What kind of activities	Results + positive impact to the project achieved
Awareness for companies and public sector		
Final Conference "Experience in resource efficient and cleaner production	Organization of the Final Conf.	• Awareness creation on the results of the RECP demonstration projects in the region. • Around **100 of participants**

methodology implementation on **Vinnitsa region enterprises", July 3, 2013**		• Awarding enterprises - participants of the RECP project with UNIDO certificates • About **100 brochures** about the RECPC and 100 brochures about the UNIDO were distributed
Final Conference "Experience in resource efficient and cleaner production methodology implementation on **Kiev region enterprises", July 11, 2013**	Organization of the Final Conf.	• Awareness creation on the results of the RECP demonstration projects in the region • **More than 70 participants**: representatives from industry, government, NGOs, donors, financial organizations and mass media (the link in internet: http://www.youtube.com/watch?v=P7yVIDFPrac) • **20 company representatives** attended the conference. • **About 100 brochures** about the RECPC and 100 brochures about the UNIDO were distributed
The **International Open Seminar** "Saving Climate Together", **June 12-14, 2013**	Participation in the exhibition	About **100 brochures** about the RECPC were distributed
V International Investment Business Forum on Energy Efficiency and renewable energy hosted by the State Agency on Energy Efficiency and Energy Saving of Ukraine, **November 5-8, 2013**	Participation at the Ukraine-Finnish Roundtable "Energy Efficient contracts"	**50 brochures** about the RECPC were distributed (Presentation Panel "Innovative technologies, energy efficiency projects and investment decisions")
XI International Water Forum AQUA Ukraine-2013, **November 5-8, 2013**	Participation in the exhibition	**50 brochures** about the RECPC were distributed
International forum "Green Mind", October 15-17, 2013 (Kyiv)	Ecological Forum, Co-organization and Participation	**6 presentations on RECP**. Moderation of the RECP session. **100 brochures** about the RECPC, **100 brochures** about RECP project implementation at company level, 100

		brochures about UNIDO and **70 books on Green Industry**[8] were distributed.
International Energy Forum "Energy Saving and Energy Efficiency", September, 11-13, 2013 (Zaporozhe)	Participation in the Forum	**2 presentations**. **100 brochures** about the RECPC and **50 brochures about the RECPC project implementation** were distributed.
International Ecological Energy Forum "Environment of Ukraine" April, 23-25, 2013 (Kyiv)	Participation in the Forum	**50 brochures** about the RECPC were distributed. Several contacts were established. .
International Business Forum, September 12, 2013 (Simferopol)	Participation in the Forum	**Presentation** on RECP was given. Several contacts were established.
International Conference on Water Issues, November, 28-29, 2013 (Kyiv)	Participation in the Conference	**20 brochures** about the RECPC were distributed.
International Conference «Green resource efficient economy: new challenges and opportunities for economic growth in Ukraine», **November 21, 2013** (Kyiv)	Co-organization and Participation	**75 brochures** about the RECPC, **75 brochures** about RECP project implementation at company level, 75 brochures about UNIDO and **75 books on Green Industry** were distributed.
Awareness for the universities students		
Kiev National University of Architecture and Construction	Project Presentation	**30 brochures** about the RECPC and **30 brochures** about RECP project implementation at company level were distributed. Several contacts were established.
Pereyaslav-Khmelnitskiy University	Project Presentation	**20 brochures** about the RECPC and **20 brochures** about RECP project implementation at company level were distributed. Several contacts were established.
Energy Week in NTUU KPI	Project Presentation	**20 brochures** about the RECPC were distributed. Distribution of **1000 stickers** with logo of the Centre

[8] The publication on the Green Industry Initiative of UNIDO was translated to Russian in close cooperation with the team of the RECP Centre

Odessa national academy of food technologies	Project Presentation	**50 brochures** about the RECPC and **50 brochures** about RECP project implementation at company level were distributed. Several contacts were established.
Zaporozhe National University, Zaporozhe National Technical University	Project Presentation	**50 brochures** about the RECPC and **50 brochures** about RECP project implementation at company level were distributed. Several contacts were established.
Small Academy of Science of Ukraine	Project Presentation	Contacts were established.
Vinnitsa Cooperative Institute	Project Presentation	**10 brochures** about the RECPC were distributed. Several contacts were established.
Vinnitsa National Technical University	Project Presentation	**10 brochures** about the RECPC were distributed. Several contacts were established.
Vinnitsa National Agrarian University	Project Presentation	**10 brochures** about the RECPC were distributed. Several contacts were established.
Awareness for the sectoral organizations		
International Scientific and Practical Conference "BIOENERGY: production of bioenergetic crops, production and use of biofuel", **October, 22-23, 2013**	Participation in the Conference	**Presentation** on RECP was given. Several contacts established.



Awareness raising seminar at Pereyaslav-Chmelnitsky University (June 2013)

Other events where the Centre participated:

Events	**Short description**	**Contribution of the Centre to the event**	**Results achieved**
Round-table of NAER on MoU signing in IA "Ukrinform", March, 2013	Round-table	Discussion, Dissemination of information, Speech	Establishing new contacts
Foresight on Green Industry Growth in Ukraine up to 2020 (Institute of economic development), April 2013	Seminar	Discussion, Dissemination of information	Establishing new contacts
EaPGreen (NISS), May 2013	Kick-off Seminar	Discussion, participation in working group	Establishing new contacts
Seminar PROMITHEUS-4 (EE project), May 2013	Seminar	Participation, Dissemination of information	Establishing new contacts

Seminar EnM in Ukraine (ISO 50001), June 2013	Seminar	Participation, Dissemination of information	Establishing new contacts
II Forum on Organizational Development (Kiev), November 2013	Forum	Participation, Dissemination of information	Establishing new contacts

5.4.2 Information materials prepared

Leaflet

Banner

What kind of materials	Short description	For which purpose	How many printed	How many distributed
Guidelines/Manuals Manual on Cleaner Production. Parts 1-4. Updated	Non-official translation of the UNIDO CP Toolkit	For the trainees	50	Kiev - 15 Vinnitsa - 15 Zaporozhe - 10

				Odessa - 10
General Books/Booklets Booklet about Resource Efficient and Cleaner Production Centre	RECPC activity, project aims	For companies and stakeholders	900	825
Posters				
Poster for Final Conference in Kiev	Invitation word, Name, logo and contacts	For stakeholders	1	1
Poster for Final Conference in Vinnitsa	Invitation word, Name, logo and contacts	For stakeholders	1	1
Poster - Way to Sustainable Development	Name, logo, contacts	For stakeholders, for Fair participants	1	1
Poster RECPC big	Name, logo	For stakeholders	1	1
Poster RECPC logo	Logo	for Fair participants	1	1
RECPC Roll-up	Logo, Name, web-site	For stakeholders	1	1
Training packages Materials for Training for Trainers	ToT Methodology	For trainers and experts	30	30
Handouts	RECPC, RECP steps at company level, UNIDO	For stakeholders	1690	1565
Leaflets				
Joint leaflet with IFC		For stakeholders	200	200
Chemical Leasing		For stakeholders	400	350
About the UNIDO RECP Project		For guests at the inauguration on January 29, 2013	100	100
About the RECPC Programme		For stakeholders	465	440

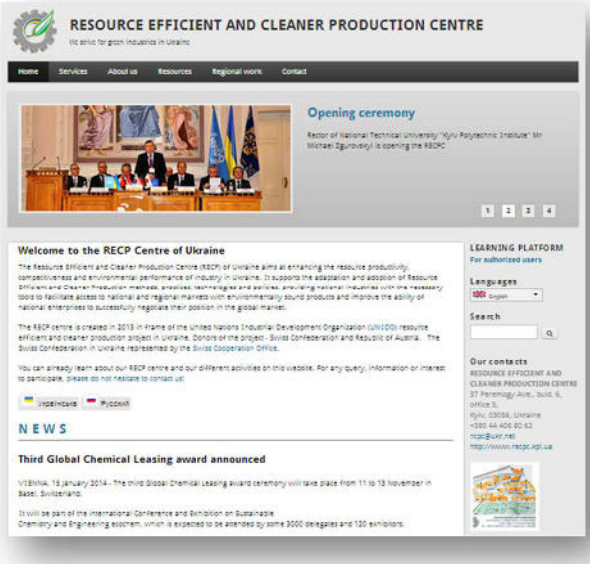
About the UNIDO		For companies	275	250
Press release for the inauguration of RECPC on January 29, 2013		For stakeholders and companies	150	150
Press release fir the the Final Conferences in Kiev and Vinnitsa			200	200
Paper bags: Reducing Resource Consumption – Way to Sustainable Development		For all	200	Kiev - 75 Vinnitsa - 0 Zaporozhe - 0 Odessa - 0
UNIDO green industry initiative –translation of the publication was revised by the team of the Centre		For stakeholders	145	145

Photos of PR materials are attached **in Annex 9**

Website modifications:
The new web-site **was launched on July 28, 2013**

A web site design, structure and content were newly developed. The University provided the "KPI" hosting. The web-site (www.recpc.kpi.ua) is available in 3 languages. It is continuously updated with new information and topics.

The number of visitors of the RECPC web-site for a half-a-year is **more than 1600**



5.5. Financial mechanisms

Ukrainian companies face serious obstacles to introduce resource efficient and cleaner production practices/technologies, including limited access to finance and lack of financial incentive schemes especially within the context of an instable economic situation. When UNIDO established its National Cleaner Production Centre in the Ukraine, the cooperation with development finance institutions - such as the International Finance Cooperation

(IFC) - was deemed of strategic importance.

5.5.1 IFC Cooperation:

In 2013, UNIDO and IFC signed a Cooperation Agreement, the first agreement of its kind, to promote green investments. According to this agreement, the National Cleaner Production Centre in the Ukraine, with UNIDO's support, will carry out Cleaner Production assessments within 12 months in specific target industries, including chemicals, agribusiness, machine building and metal processing. The reports will be reviewed by the IFC to estimate the financial feasibility of the proposed investments and facilitate access to the IFC credit line in the country. The IFC will provide dedicated financing for cleaner production investments directly to large industrial and municipal enterprises that meet investment criteria. It will also extend credit lines to local financial institutions so that they can lend on to medium-size entities that want to make cleaner production improvements.

Main activities foreseen in the agreement:

1. **Build capacity of the CPC** to present its findings to owners and decision makers of private sector companies
2. **Conduction technical assessments** of selected clients, including those that are:

a. Potential recipients of IFC direct finance for CP projects

b. Potential borrowers of IFC partner financial institutions for CP projects

3. **Sharing of IFC's knowledge** in technologies, awareness building and information dissemination to the CPC.

COOPERATION AGREEMENT

ON THIS 21 DAY OF March, 2013:

(1) **UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION,** an international organization established by Articles of Agreement among its member countries, represented by Mr. Heinz Leuenberger, Director, Environmental Management Branch (the "UNIDO"),

DOES HEREBY ENTER INTO THIS AGREEMENT WITH:

(2) **INTERNATIONAL FINANCE CORPORATION**, an international organization established by Articles of Agreement among its member countries, including Ukraine, represented by Mrs. Usha Rao-Monari, Director, Sustainable, Business Advisory ("IFC").

In this Agreement the term "Parties" is sometimes used to refer to IFC and the UNIDO collectively, and the term "Party" is sometimes used to refer to either of them.

PART I

PROJECT SPECIFIC TERMS

1. **The Parties**

(a) IFC, a member of the World Bank Group, is an international organization whose mission is to promote sustainable private sector investment in developing countries, helping to reduce poverty and improve people's lives.

IFC's Ukraine Sustainable Energy Finance Program and IFC's Ukraine Cleaner Production Program (the "IFC Programs") provide advisory services to help improve resource efficiency and strengthen the development of the private sector and financial institutions in Ukraine and is managed by IFC's Europe and Central Asia Department.

(b) UNIDO, the United Nations Industrial Development Organization, is a specialized agency of the United Nations. Its mandate is to promote and accelerate sustainable industrial development in developing countries and economies in transition, and work towards improving living conditions in the world's poorest countries by drawing on its combined global resources and expertise. A UNIDO project "Promoting the adaptation and adoption of Resource Efficient and Cleaner Production through the establishment and operation of a Cleaner Production Centre (the "CPC") in Ukraine" is established with a mission to disseminate the Resource Efficient and Cleaner Production concept and promote its application in industrial activities in order to improve the competitive position of industry in Ukraine in the context of the global economic integration.

The current agreement has the potential to serve as model for cooperation between the two organizations as it combines UNIDO's technical know-how with IFC's financial services to up-scale Cleaner Production application at company level while supporting technology transfer.

IFC training at the RECPC

Analysis of the IFC credit line:

Advantages/Disadvantages of the financial programme	**Work with the Centre in 2013**	**Potential activities**
Advantages In fiscal year 2012, IFC's commitments to Ukraine totaled $156 million. List of investments projects in Ukraine: - Ukraine Sustainable Energy Finance Program - Ukraine Resource Efficiency Program - Promoting Cleaner Production in Ukraine - Promoting Energy Efficiency in Ukraine's Residential Housing **Disadvantages** There is no standard application form for IFC financing; there is not clear information on what kind of projects could be attractive for investments; what could be a payback period and credit rate.	***Training*:** IFC conducted two-day training for the RECPC experts (19 people from the RECPC experts network; April 8, 2013). ***"Coaching on the job"*:** A schedule of work with companies was jointly developed by IFC and the RECPC team, responsibilities of both team members were clearly defined **CPC activity:** 1) Results of 10 IPA assessments (8 pre-assessments; 2 detailed technical assessments) were presented to IFC and discussed; 2) 4 meetings were organized with companies management; 3) A template for the joint IFC-RECPC report on the results of in-plant assessment was developed; 4) 2 technical reports were developed according to the	1) Technical data collection, analysis of the measurements, engineering of the technical options on the peat gasification equipment implementation at the Brovary Concrete Plant 2) Further development of technical proposals for pre-heating facilities for glass melting kiln and the drying process optimization at the Gostomel Glass Container Company

	template (Brovary Concrete Plant and Gostomel Glass Container Company) and submitted to IFC for revision; 5) New assessment was initiated with the modernization compressed air station of JSV "UKRGRAFIT"	

5.5.2 NEFCO

The Centre continued and intensified the cooperation with the NEFCO team.

NEFCO is an international financial institution established by five Nordic countries. NEFCO finances investments and projects primarily in Russia, Ukraine, Estonia, Latvia, Lithuania, Moldova and Belarus as well as climate projects across the world. NEFCO's main focus is to generate positive environmental effects of interest to the Nordic region.

Analysis of the NEFCO credit line:

Nefco credit line	**Advantages/Disadvantages of the financial programme**	**Work with the Centre in 2013**	**Perspective and potential projects**
Credit lines include 2 programs: - Cleaner Production (maximum/minimum amount of credit 350000/50 000 Euro) - Energy Efficiency (maximum/minimum amount of credit 400000/100 000 Euro)	**Advantages** - investments structure: 90% NEFCO credit; 10% - clients' share; - after the first part of the credit is covered by client it is possible to ask for reinvestments from NEFCO; - clear stated credit rate 6%; - simple requirements for applications **Disadvantages** - long period of application phase; - small credit pipe amount.	Business plan of the "Promgaz technology" Ltd for the investments related to the technology line modernization was developed with assistance of the Centre and submitted to the NEFCO Credit Committee (Helsinki, Finland) in October 2013	1) Modernization of electroplating technology line at the "ROST" Association (Zaporizhja)

5.5.3 ProCredit Bank

The Centre has initiated a meeting with the ProCedit Bank to discuss perspectives of cooperation.

The ProCredit group is pioneering an approach where green loans can be used to finance investments undertaken for the following purposes:

• Energy Efficiency investments – use less energy or resources to achieve the same or an increased level of output, where required energy savings are at least 20%.
• Renewable Energy investments – harness natural resources that are inexhaustible within human time scales or that are replenished much more quickly than they are depleted.
• Environmentally friendly investments – have a direct positive effect on the environment, even though there may not always be measurable energy savings or reductions in greenhouse gas emissions. More details on ProCredit green investment attached, **Annex 10.**

Total monetary amount of the energy efficient lending portfolio last year has been brought up to 7 % of the total volume of all bank credits.
Moreover, 254 energy efficient credits have been granted (according to the final report in 2011 - 20.5 million dollars for business) for last 4 years of the program.
80 % of credits corresponds the sum of up to 50 thousand dollars. In most cases, the client has a commercial place from 9 to 25 m2.

Analysis of the ProCredit credit line:

ProCredit Bank credit line	Advantages/Disadvantages of their financial programmes	Work with the Centre in 2013	Perspective and potential projects
Credit line program: - Energy Efficiency credits (maximum/minimum amount of credit 1 Mio /50 000 Euro) **Short description:** Major customers are from services sector (commercial activity, transport, restaurants and cafes have almost the same percentage), and industrial sector (minimum part).	**Advantages** - SMEs focusing; - Short term period for issuing credits (2-3 days); - Very simple requirements for applications **Disadvantages** - Giving energy efficient credits, bank does not count the impact of technical solutions introduction. Only one requirement should be performed, i.e. provision of at least 20 % of energy saving - The requirements for the applicant for an energy-efficient credit are the same as for conventional credits, i.e. interest rate is the same as for conventional credits - One can speak about the decrease of the interest rate	- Contact with JSC ProCredit Bank initiated (May 2013) - Presentation on RECP and the Centre's activities to ProCreditBank (May 2013) - Negotiation (May 2013) - Proposal for the cooperation to ProCredit (July 2013)	Prospective cooperation has low-probability due to the low interest to the RECP proposal

	only when it is possible to prove that the purpose of an energy-efficient credit is mainly focused on energy saving. - In practice, often such "energy" investments are related to replacement of old equipment for newer one that is more energy efficient. In fact, ProCredit Bank develops this course only in order to facilitate the engagement of customers. ProCredit Bank considers energy efficient investments just as marketing activity.		

5.6. Projects on the commercial basis with the Centre

In order to achieve the sustainability, the Centre needs to develop an approach for commercial projects. The management of the team has managed in 2013 to negotiate first contracts on a commercial basis.

Challenge	**Description:** In some cases, implementation of the RECP methodology at the enterprise is not enough for **solving the problems of production processes modernization**. They expect from the Centre **extra measuring works, engineering calculations and development of technical proposals** that require more time of the Centre employees. Enterprises **are ready to pay rather for engineering and consulting** than training and RECP methodology implementation.
Approach of the Centre	**Description:** Centre always provides RECP **pre-assessment free of charge**. The next stage of the negotiations is associated with conducting the **in-depth assessment, and involves the consideration of having expenses covered** (basis- the volume of work performed). In some cases, the financial component, which will be paid, is based on savings achieved after the implementation of technical solutions at the enterprise.
Companies signed the contract with the Centre on a commercial basis	1. **Mogilev-Podolskiy Machine Building Plant**, Contract for cooperation, September 2013

	• Work to be performed on commercial basis: **Assistance in RECP Methodology implementation and providing IPA** • Specifics of a contract: **Covering direct costs** • Amount of contract 2. "**Kalinivsky machine building plant**". Contract for cooperation #2, from September, 5th 2013, • Work to be performed on commercial basis: **Assistance in RECP Methodology implementation and providing IPA** • Specifics of a contract **Covering direct costs** • Amount of contract 3. **OJSC "Kombinat stroyindustrii"** • Work to be performed on commercial basis: **Assistance in RECP Methodology implementation and providing IPA** • Specifics of a contract: **Covering direct costs** 4. **OJSC "Mayak"** • Work to be performed on commercial basis: **Assistance in RECP Methodology implementation and providing additional IPA** • Specifics of a contract: **Covering direct costs** • Amount of contract 5. **OJSC "Beton ot Kovalskoy"** • Work to be performed on commercial basis: **Assistance in RECP Methodology implementation and providing IPA** • Specifics of a contract: **Covering direct costs**	
Companies expressed interest in commercial services **(but still no contract signed)**	***Name of companies*** ✓ "Plant construction industry" ✓ Concern "Yaroslav" ✓ OJSC "Ukrgraphit"	***Potential services*** *(which they would like to receive)* Additional in-depth assessment of raw material Additional in-depth assessment of raw material and water management

	✓ Illintsi sugar plant ✓ Gaisin sugar plant ✓ Tripillya cardboard factory	1. In-depth assessment of air compressor for further modernization 2. Preparation of the company for ISO 50001 certification Generation special technical options on gas consumption decreasing Generation special technical options on gas consumption decreasing Trainings for company staff for RECP methodology implementation
Outlook for the year 2014	***The target – 6 companies*** *with commercial contracts*	***What will be the steps*** *to achieve this target:* 1. Implementation of RECP assessments at company level 2. Generation of technical options 3. Monitoring of the proposed technical options implementation 4. Assessment of the economic savings and receiving the payments from companies 5. Monitoring of the future demand

6. Additional activities of the Centre

6.1. Project title: "Eco-Industrial Parks in Emerging and Developing Countries: achievements, good practices and lessons learned"

UNIDO activity on eco-industrial parks, is one of the thematic workstreams under the global RECP Programme. Eco-industrial park could be seen as a means to achieve widespread uptake of plant-level RECP opportunities by companies located in the zone and for realization of collective opportunities (e.g. for joint treatment of waste and effluents or reuse of waste from one company by another company –"symbiosis").

In 2013 UNIDO initiated a global review (15 countries) of experiences and achievements, with a view to distil good practices and lessons learned for scaling up and mainstreaming RECP in industrial parks in developing and emerging economies.

→ The Ukrainian RECP Centre was invited to contribute a country case review paper to this global review. The task for Ukrainian RECP Centre would then essentially be (1) a brief review/assessment of the national policy and industry context for (eco-) industrial parks; and (2) two or three in depth reviews of eco-industrial parks.

More details on the Centre´s involvement see in **Annex 11.**

6.2. Partnership development

The Centre pays a lot of attention to the development of the partnership relations with key national stakeholders and relevant projects, since only by joining hands with other organizations and working hard together on promotion and development of RECP in the country, the real impact can be achieved.

Overview of partnership relations:

Partner name	**What kind of cooperation. Joint activities in 2013**
Founders	
Ukrainian League of Industrialists and Entrepreneurs	Agreement on Cooperation and Coordination of RECP activities in Vinnitsa region (with a Vinnitsa branch of ULIE)
National Technical University of Ukraine "Kiev Polytechnical Institute"	Cooperation Agreement on the RECP implementation in Ukraine
Science Park "Kyivska Politechnica"	Cooperation Agreement on the RECP implementation in Ukraine
Universities	
Odessa National Academy of Food Technologies	Cooperation Agreement on the RECP implementation in Odessa region

University of Perejaslav-Khmelnitsky City	Signing the Cooperation Agreement is being discussed
Kiev University of Building and Architecture	Signing the Cooperation Agreement is being discussed
Municipalities	
Gorlovka Municipality (Donetsk Region)	Signing the Cooperation Agreement is being discussed
Brovary City Municilpality (Kiev Region)	Signing the Cooperation Agreement is being discussed
Research institutions	
Agrobiotech	Signing the Cooperation Agreement is being discussed
NGOs	
NGO "Institute of green economy"	Agreement on Cooperation and Coordination of the activities related to the Green Economy
NGO "Zhiva planeta"	Agreement on Cooperation and Coordination of the activities related to the organization and carrying out the International Forum "Green Mind"
Other organizations	
World Data Centre of Geoinformatics and sustainable development	Cooperation Agreement on mutual organization of public events related to sustainable development

6.2.1 Advisory board (AB)

AB is the mechanism to enhance the cooperation and information exchange with national institutions

As a follow-up activity of the Steering Committee meeting in January, a list of (potential) Advisory Board members and the regulations of the Advisory Board were drawn up.

The list of the following Advisory Board members was proposed:

Permanent members:

1. Ministry of Economic Development and Trade of Ukraine
2. Ministry of Environment and Natural Resources of Ukraine
3. Ministry of Agrarian Policy and Food of Ukraine
4. Ministry of Industrial Policy of Ukraine
5. Ministry of Regional Development, Construction and Housing and Communal Services of Ukraine
6. Ministry of Education and Science of Ukraine
7. State Agency on Energy Efficiency and Energy Saving of Ukraine
8. State Agency for Science, Innovation and Informatization of Ukraine
9. State Agency for Governing State Corporate Rights and Properties

10. Ukrainian League of Industrialists and Entrepreneurs
11. Ukrainian Chamber of Commerce.

Associate members of Advisory Board:
12. Kyiv City State Administration
13. Kyiv Regional State Administration
14. National Institute for Strategic Studies
15. NGO “Zhiva Planeta”
16. NGO "Institute of green economy"

To ensure a balanced membership, it was decided that the AB will be composed of representatives from both Ukrainian governmental institutions and organizations representing the interests of the private sector (industry). Membership is reserved to Ukrainian organizations only, but international organizations can be invited to participate in the sessions.

In October 2013 the Centre has conducted the **first Advisory Board meeting.**

When organized	09.10.2013
Participants	Total number: 15 persons including the representatives of: 1. Ministry of Agrarian Policy and Food of Ukraine 2. Ministry of Regional Development, Construction and Housing and Municipal Services of Ukraine 3. State Agency on Science, Innovations and Informatization of Ukraine 4. Ukrainian League of Industrialists and Entrepreneurs 5. Chamber of Commerce in Ukraine 6. International Chamber of Commerce 7. Swiss Cooperation Office in Ukraine
Topics discussed	1. Presentation of the RECP project in Ukraine 2. Role of the Advisory Board. Function and regulation: Information on Advisory Board Regulations; Head of the Advisory Board election; 3. Supporting the activities of RECP-C in Ukraine-discussion: needs, challenges, partners to be involved, concrete actions and opportunities 4. Steps forward: Drafting of an “action plan/road map” for 2014.
Agreements made	During the discussion a number of comments and amendments to the Regulations on the Advisory Board were made and accepted for the text correction. It was agreed: - To integrate corrections to the following items of the AB regulations: 1.4, 2.2, 5.4, 5.6, 5.8 - To inform all members of AB by letters about: AB regulations improvement; - To share the proposal on a Head of the AB (representative of ULIE); - To invite to send final comments on Regulations of AB.

	- To request stakeholders to confirm the membership in AB in a written form to the RECPC
Main results	Official letters (invitation to become a member) were sent out to the 11 AB members. Answers from 4 members were received. Answers were systematized and taken into consideration. After the meeting – official proposals on cooperation were received from Ukrainian – German Forum, Ministry of Fuel and Energetics and Ministry of Regional Development. Resolution on the Advisory Board was developed and approved by the Ministry of Economic Development and Trade. The list of members of the Advisory Board was agreed with the Ministry of Economic Development and UNIDO.
Plans for 2014	At least 1 meeting will be organized in 2014, most probably in the middle of the year , closer to regional final conferences

Agenda, list of participants and minutes of the meeting of the Advisory Board are attached in the **Annex 12**.

6.3. Business plan and strategy development

In 2013 the RECPC continued the business planning activities initiated in 2012. The RECPC staff organized a number of internal meetings to discuss the organizational structure, the approach of dealing with companies and the self-presentation. International experts and UNIDO provided business tools and advices on the business development. For example, a self-evaluation template was shared with the Centre and all RECPC staff members were encouraged to give their feedback on the general management. UNIDO encouraged the director to use this template for yearly meetings with his staff (individual meetings as well as group meetings) in order to continuously identify potentials for improving the management of the Centre.

On 5-7 March, RECPC staff participated in the organizational diagnosis, carried out within the UNIDO-GIZ programme on capacity building for RECP service providers. The session was moderated by 2 associated experts of GIZ. The international expert and UNIDO representatives also took part and contributed to the discussion.

The diagnosis addressed following aspects of the Business Model:

1. Key partners
2. Key activities
3. Key resources
4. Value proposition
5. Customer relationship
6. Channels
7. Customer segments
8. Cost structure
9. Revenue structure

Full report on Organisational Diagnosis and Context Analysis «Capacity Development for Promoting a Resource Efficient and Environment Oriented Private Sector» can be provided upon a request.

It was agreed that GIZ in cooperation with UNIDO will undertake a further analysis of the business and organizational development of the Centre in Ukraine. The NCPCs received the invitation to register in the distant learning platform to participate in an number of on-line courses to improve the organizational, management, and financial planning skills. In September 2013, the RECPC director participated in the capacity building workshop which took place in a framework of the Global RECP meeting in Montreux in Switzerland. It is planned that in 2014 the RECP Centre of Ukraine will take an active part in training activities what will help to finalize the business plan and strategy of the Centre.

In spite of the fact, that there is no strategic document been yet finalized, the management of the Centre has developed a certain vision and considerations on the organizational development.

The short review, which was developed and discussed with the CTA, is presented below. It highlights some priorities of the management of the Centre in 2014.

Strategic review and considerations

RECPC Mission (needs to be finalized)
The mission of RECPC is to enhance efficiency, productivity, competitiveness and environmental performance of companies in Ukraine through the implementation of RECP methods, practices and technologies.

RECPC Vision (needs to be finalized)
We strive to achieve sustainability by the end of 2017 and to be recognized in the country (industry, government and academia) as a focal point for RECP and services.

RECPC Values:
1. **Professionalism:** our team consists of top-notch widely known and well-respected experts in various fields of engineering.
2. **Integrity:** our clients trust us as we do not promote any particular equipment or technology.
3. **Trend-setting:** we form the market for RECP services.
4. **Financial and Staffing Sustainability:** we work hard to cover our costs and provide all our experts with work.
5. **Environment:** we help to preserve the environment for future generations.

Ways for RECPC improvement:

1) While it is not completely clear when RECPC will be able to commercialize its services and rely on the respective cash flows, availability of donors' funding should not be neglected. In this respect the Centre should **learn how to develop proposals and**

apply for donor funded projects – this can be a substantial contribution to the overall revenues of the Centre.

2) In order to improve marketing potential of the RECPC services, **the Centre needs to improve skills which will strengthen customer relations management**, that is, sales skills, as well as communication, presentation and negotiation skills. Eventually the Centre has to employ a team of dedicated professional customer relationship managers who are knowledgeable about the Centre's services, confident in reaching out new clients and taking proper care of the existing ones.

3) Furthermore, the **technical experts of RECPC who provide RECP assessment should enhance their presentations and training skills**. Technical experts are the ambassadors of the Centre and most often the only representatives of the Centre the client will meet and base his/her opinion on. Therefore, it is of utmost importance that technical experts are trained to deliver the top quality service. This in turn will strengthen brand reliability and multiply the word of mouth effect which is one of the most effective brand awareness tools in Ukraine.

4) As discussed during the organizational diagnosis, providing only technical part of the RECP as a service might not be enough due to problems companies (potential clients) face in obtaining financing to implement recommendations of RECP assessment. Therefore, in order to help with financial linkage services, the RECPC should be able to network with international and local financial institutions. For this, the Centre has to acquire proper **business communication skills, as well business plan writing and financial document preparation skills**.

5) Another important improvement should be planned in the **market intelligence** area. The skills of gathering information relevant to RECPC market is about to start operating in, as well as proper analysis and interpretation skills are crucial.

6) RECPC is also advised **to establish a dedicated marketing and PR team** which would take proper care of making the Centre visible on the market. As of now, the Centre obviously lacks human resources and skills to pursue a successful marketing campaign; hence, this should be addressed as soon as the legal status of RECPC is finalized.

7) The Centre needs to invest time and effort into creating a **functioning HR system**, as well as it should adopt **performance management with comprehensive KPIs.** The facilitators discovered that existing job descriptions do not match the actual roles the employees perform.

In addition to this, there is a further need of creating a professional development plan and incentive plan for each employee.

8) In order to assume a business perspective, RECPC should further focus on **business administration skills**, which include project management, management of knowledge assets which are developed within the projects, proper delegation skills, cost management, etc.

Strategic Analysis/Experience:

1. Different approaches are applied to regions (taking into consideration the specifics of a particular region and if the Centre has an experience of working there, or just entering it)

2. In existing regions the focus area (for searching) has to be extended in order to find suitable companies. This is however increasing substantially the time demanded for pre-assessments.

3. Convincing company managers to accept RECPC services is a challenging process demanding experience, teamwork, communication skills and practical arguments.

4. The country economy is stagnating therefore RECPC effort has to be on "lean approaches" focusing on reducing cost for implementing improvement without significant investments.

4. RECPC plans to limit the assessment efforts in companies which do not demonstrate sufficient commitment and hold over a decision on their participation in the project. This gives RECPC more flexibility to focus on the companies which are demonstrating a strong commitment and better prospects.

5. Taking into account the market situation and our tasks, we are focusing our efforts on experts' development and strengthening experts' networking system.

6. The relations of RECPC with the Government should focus on measurements that support new jobs creation:

- Supporting private investors,
- Eliminating energy subsidy to everybody including hotel and industries that are able to pay competitive prices.
- Eliminating state gas monopoly from ex Soviet Union time related to peak import's cost in winter.
- Developing green energies to diversify "independence", while creating jobs.

7. Medium term strategy is to reduce short term operating costs until the economy and reform will begin to play their role again.

6.4. International meetings and workshops

Continuous capacity building and exchange of experiences and know-how (including with international partners) is important element of the Centre´s work.

Name of the meeting	Where/ when	Who participated	Reason of participation	Results
Inaugural Meeting of the Regional Chapter of Resource Efficient and Cleaner Production Network (RECPnet) for Eastern Europe, Caucasus and Central Asia (EECCA)	Austria	Director, Assistant Director	Introduction of Knowledge Management System for RECPnet in the region	Establishing contacts, introduction of the new employee, exchange of experience
3rd Global Network Conference on RECP	Switzer land, Septem ber	Director, Technical Director, CTA	Centre is a member of the UNIDO global RECPnet Meeting with the UNIDO project management and discussion about achievements and further plans Gathering and consolidating achievements, lessons learned and other recommendations from the RECP Network members;	The status of the project has been presented and discussed
The steering committee meeting on Environmental Action Program (EaP Green) for Central and Eastern Europe, Caucasus and Central Asia, Tbilisi (81 participants)	Georgia , 17-18 Septem ber	Director	Centre is involved in the EaP Green and will coordinate RECP component	Presentation on results of RECP options implementation Tasks and goals discussed Establishment of contacts with representatives from ENV/EPI

				OECD (A. Bulagra), KfW Development Bank (H. Philipp)
Coordination meeting with UNIDO project management	Austria	Director, Assistant Director, CTA	Need for discussion of pending issues	Results of the year, annual report, the workplan 2014 and other issues were discussed

6.5. Donors relations

6.5.1 Steering Committee (SC)

SC has been established in 2012 to ensure the efficient implementation of the Project management and organization of operations of the Centre on the basis of the National Technical University of Ukraine.

Steering Committee meeting in January 2013

The main tasks of the Steering Committee are:

- facilitation of promotion in Ukraine of practices and world experience on more efficient use of resources and implementation of advanced cleaner technologies;
- ensure the successful implementation of the Project; identify ways, mechanisms and methods to solve problems that arise in the process of its implementation;
- facilitate the establishment of the Centre to fulfill the project objectives and to stabilize its operations.

Overview of meetings in 2013 attached in Annex 17.

6.5.2 Participation in SECO events

Name of the meeting	Where/when	Aim of the meeting	Results

Training on Governance as a Transversal Theme organized by Swiss Cooperation Office in Ukraine	Kiev, Ukraine, March 21-22	The Training was conducted by Anne Lugon-Moulin, Head of Commonwealth of Independent States (CIS) Division of the Swiss Agency for Development and Cooperation	The Training was focused on practical knowledge and recommendations on how to mainstream Good Governance (in particular the principles of non-discrimination and accountability) in the Swiss-funded projects. A separate project-related exercise on cost-effectiveness (GG principle of efficiency) was also conducted.

7. Annexes (attached)

Annex 1

Financial summary

Overview

Total amount received, Euro	**42 953,64**
Spent for	
Output 1.1. Establishment and operation of the centre	29 554,76
Output 1.2. Trainings	10 826,51
Ouput 2.1. PR and website	2473,82
Ouput 2.2. Assessments	2 341,24
Ouput 3.1. Policy gap analysis and meetings	1652,62
Ouput 4.1. Professional capacities created and utilized to support the adaptation, development and transfer of RECP technologies	-
Ouput 4.4. Financial mechanisms to support RECP technologies developed and implemented	-
Other outputs, e.g.: expenses for household purposes of Centre and regional offices, and DSA (7 persons)	3 067,96

OUTPUTS		**Amount in UAH**	**Amount in Euro**
1.1. ESTABLISHMENT AND OPERATION OF THE CENTRE			
	Launching ceremony, Steering Committee meeting	35 372,67	3 215,70
	Advisory board (1 meeting)	3 996,30	363,30
	Office equipment purchasing	29 582,57	2 689,32
	Premises arrangement (insulation materials for windows)	1 292,68	117,52
	Rent (Zaporozhye office and Conference Halls for events in all regions, including support of Green Industry Conference 21.11.2013)	15 425,00	1 402,27
	Services of the accountant/auditor	36 351,20	3 304,65
	Salary of RECPC staff under the subcontracts with the centre (5 persons)	111 001,16	10 091,01
	Contracts on services (Internet, phone, post etc.)	9 064,31	824,03
	Translation, bank services, transportation etc.)	75 891,45	6 899,22
	Lawyer services	3 400,00	309,09
	Notary	3 725,00	338,64
1.2. TRAININGS			
	WS - 26 events	43 646,50	3 967,86
	Final Conferences	33 599,68	3 054,52
	Experts fee (15 persons)	36 554,27	3 323,12
	Selection of CP experts (travels to regions and organizing meetings and presentations)	3 791,11	344,65
	DSA	1 500,00	136,36

2.1. PR and WEBSITE			
	Web-site support (hosting, registration, programming and debugging of web-site)	6 456,00	586,91
	Participation in conferences (presentations materials, services, printing, arrangements etc.)	20 756,00	1 886,91
2.2. ASSESSMENTS			
	Companies visits in regions (fuel etc.); travels costs, DSA not including	15 674,98	1 425,00
	Measurement equipment purchased by Centre	7 828,63	711,69
	DSA	2 250,00	204,55
3.1. POLICY GAP ANALYSIS AND MEETINGS			
	Investigation performed (recruitment of the policy specialist for the legislation gap analysis)	8 800,00	800,00
	Organization of Round Table on policy and legislation (1 event)	9 378,84	852,62
4.1. PROFESSIONAL CAPACITIES CREATED AND UTILIZED TO SUPPORT THE ADAPTATION, DEVELOPMENT AND TRANSFER OF RECP TECHNOLOGIES			
	Development of 1 sector-specific RECP training material (guideline) adapted to Ukrainian requirements	-	-
4.4. FINANCIAL MECHANISMS TO SUPPORT RECP TECHNOLOGIES DEVELOPED AND IMPLEMENTED			
	Cooperation with NEFCO. 1 Business plan developed for funding RECP options at company level in Kiev region	-	-
	Cooperation with IFC. Joint identification of potential for funding RECP options at company level by IFC or IFC partner banks (1 company assessed)	-	-
MISCELLANEOUS			
	Funds for household purposes of Centre and regional offices and DSA (7 persons)	33 747,53	3 067,96
Total expenditures in 2013		**549 085,88**	**49 916,90**
Total amount received in 2013		**472 490,02**	**42 953,64**
Amount on hand left		-76 595,86	-6 963,26

Annex 2

CV of experts recruited under individual subcontracts

Position:	**Regional Coordinator in Zaporizhzhie region**
Name:	Sergiy M.Kalachov
Contact information:	6, Nemirovicha-Danchenko Str., Apt.2, Zaporizhzhie, Phone: 061-325241 Cell phone: 095 300 4064
Date of birth:	March 19, 1956
Education:	Higher education: Zaporozhzhie Machine Building Institute named after V.Chubar, engineer of electrotechnics; 1983 Kyiv Institute of Politology and Social Management, politologist; 1991 Humanitarian Institute "Zaporozhzhie Institute of State and Municipal Management", jurisprudence
Work experience:	March 1985 – September 1989 Instructor, the Head of Industrial-Transport and Organizational Department at Ordzhonikidze district committee of the Communist Party of Ukraine (CPU), Zaporozhzhie September 1989 – March 1991 Student, Kyiv Institute of Politology and Social Management March 1991 – September 1991 Consultant, Social and Economic Department at Zaporozhzhie oblast committee of the CPU December 1991 – May 1992 Specialist of the 2nd category, the leading specialist, the chief specialist of the Department of Industry, Transport and Communication at the Main Department of Economy at Zaporozhzhie Oblast Executive Committee May 1992 – October 1992 the chief specialist of the Department of Industry, Transport, Communication and Conversion Processes at the Main Department of Economy at Zaporozhzhie Oblast State Administration October 1992 – October 1993 The Head of the Department of the Development of Industry, Transport, Communication and Conversion Processes at the Main Department of Economy at Zaporozhzhie Oblast State Administration October 1993 – December 1994 The Head of the Department of corporatization, converting enterprises into joint-stock companies and shares registration at the State Property Fund of Ukraine in Zaporozhzhie Oblast

	December 1994 – December 2009 The Deputy Head of Regional Department of the State Property Fund of Ukraine in Zaporozhzhie Oblast December 2009 – August 2010 The Acting Head of Regional Department of the State Property Fund of Ukraine in Zaporozhzhie Oblast August 2010– August 2012 The Deputy Head of Regional Department of the State Property Fund of Ukraine in Zaporozhzhie Oblast As of August 2, 2012 Dismissed from the position of the Deputy Head of Regional Department of the State Property Fund of Ukraine in Zaporozhzhie Oblast due to redundancy of deputy head positions at Regional Department (p. 1, article 40, Labor Code of Ukraine)
Language skills:	Ukrainian, Russian – fluent German – satisfactory (with dictionary)
Other:	Awards, honorary nominations: 2001 – Honorary Certificate of Zaporizhia Oblast State Administration; 2002 – Award pin "Pin of Honor" of the State Property Fund of Ukraine; 2006 - Honorary Certificate of the State Property Fund of Ukraine; 2007 - Honorary Certificate of Zaporizhia Oblast State Administration.

Position:	**Regional Coordinator in Odesa region**
Name:	Galyna Krussir
Contact information:	Business Address: Dept. of Ecology of Food and Food production, Odessa National Academy of Food Technologies, Kanatnaya, 112, 65039, Odessa, Ukraine krussir_65@mail.ru
Date of birth:	May 1, 1965
Education:	D.Sc. (Engineering) in Biotechnology (2010), Odessa Nation Academy of Food Technologies, Odessa, Ukraine Engineer-ecologist (1996), Engineering school, Basel, Switzerland Ph.D. (Engineering) in Biotechnology (1993), Odessa National Academy of Food Technologies, Odessa, Ukraine B.S. in Chemistry (1987), Odessa State University, Chemistry Department
Work experience:	Since 09/2010 - Professor, Department of Ecology of Food and Food Production, Odessa National Academy of Food Technologies (ONAFT), Odessa, Ukraine 1994 – 09/2010 - Associate Professor, Odessa National Academy of Food Technologies (ONAFT), Odessa, Ukraine 1987-1994 - Researcher, Department of Organic Chemistry at Odessa

	National Academy of Food Technologies (ONAFT), Odessa, Ukraine
Language skills:	Russian - native, German, English - satisfactory
Other:	Professional areas of activity: - the main area - food biotechnology, enzymatic modifications of food biopolymers, food supplements - other areas - environmental management, Eco biotechnology - current research interest - food science and technology 260 publications and patents.

Position:	**National expert for information, PR, communication and event management**
Name:	Valerie S.Tkachenko
Contact information:	Mobile: 050 443 5163 OR 221-3145 valerie.tkachenko@gmail.com..ua
Date of birth:	November 12, 1966
Education:	Law School, Kyiv, Ukraine (2000 – 2002) Kyiv Linguistic University, Kyiv, Ukraine (1983 – 1988) CIDA training courses "Results Based Management" and "Gender Equality", Canada
Work experience:	Canada Fund Coordinator Canada Fund for Local Initiatives (CFLI), CIDA, DFAIT, 2010 – July 2013: • Assessing project proposals and providing recommendations for funding; participation in Selection Committee meetings (in total 60 CFLI projects successfully implemented for the amount of 640,000.00 CAD in 2010-2013). • Maintaining accurate and complete project files with the support of electronic systems (Excel, Access database). • Monitoring project results on a local level (site visits, monitoring reports preparation). • Preparation of press releases, presentations, progress, final project reports and annual report for CIDA Headquarters. • Translation and editing of CFLI documents. Project Manager to Ukraine Facility for Agricultural Reform and Modernization Project (FARM). Phase II, CIDA-funded, March 2002 -2010 • General management of mini-grant projects in the frame of FARM Program (32 projects implemented for the amount of 1.27 mln CAD). • Monitoring and evaluating projects implementation; conducting regular on-site monitoring of grant projects; ensuring timely submission and evaluation of project progress and financial reports (reviewing and audit of financial reconciliations and cash advances). • Organization of the project activities (training courses, seminars, conferences, round tables, trade missions, etc.). • Liaison with FARM Program partners, governmental institutions,

	educational institutions, international institutions and donor agencies. • Preparation of FARM Program reports to CIDA and Ministry of Agrarian Policy. • Management of the Canadian consultants' assignments (in total 64 assignments): development of TRs for consultants' visits, logistic support, preparation of training materials, communication with hosting organizations, assignments evaluation. • Translation and editing of the project documents. • Logistics support to the Project Steering Committee missions to Ukraine; <u>Project Coordinator</u> Citizens Network For Foreign Affairs, Small Enterprise Development, USAID-funded project , 2000 - 2002 • Management of the implementation of projects in Volunteer Program (Small Enterprise Development Program). • Translation and editing of the project documents. • Coordinating logistics for seminars and training programs, including budget development. • Recruiting interpreters, drivers and local representatives to fulfill CNFA's objectives in the regions. <u>Project Coordinator</u> Citizens Network For Foreign Affairs, Agribusiness Partnership Program and Policy Unit (AP II), USAID-funded project, 1998 - 2000 • Design and supervision of the development projects in the frame of USAID strategy, monitoring budget and financial issues and invoicing, collecting data and information needed to establish baseline data and to complete progress reports for AP II projects. Traveling to the regions to inspect and monitor APII projects. • Preparation of the trip reports, quarterly progress and weekly reports. • *Translation and editing of the project documents.* <u>Project Assistant</u> Cargill Technical Services. TACIS project FDUK/9502 "Assistance to Marketing and Trade Support Structures of Ukraine" – 1996 - 1998 • Monitoring financial issues and reporting (preparation of monthly financial reports and advance requests). • Organization of workshops, seminars, conferences. • Oral and written translation. <u>"Sputnik" Travel Agency – 1988 - 1994</u> • Sight-seeing tours for foreign tourists. Translation and interpreting.
Language skills:	Ukrainian and Russian – native English – fluent German - satisfactory
Other:	• 17 years of experience of working with international organizations • Microsoft Office, Internet, E-Mail

Position:	**National Expert on Water Management**
Name:	Tetyana Knyazkova
Contact information:	t_knyazkova@mail.ru
Date of birth:	May 12, 1940
Education:	Kiev Institute of Civil Engineers, 1957-1962 (water supply and sewerage) Kiev Institute of Civil Engineers, post-graduate course (water treatment), 1964-1968 Ph.D. in Technology of Inorganic Matters (Water), 1971 Senior Scientific Researcher (academic rank), 1976 International Training Program on Ecological Alternatives in Sanitation (Sweden-Ukraine), 2007-2008
Work experience:	1968-1976 ICWC NAS of Ukr., senior engineer, junior researcher 1976-2001 Institute of Colloid and Water Chemistry, National Academy of Sciences of Ukraine (ICWC NAS of Ukr.), senior scientist, head of research group (supernumerary laboratory) 2006-2008 National Aviation University, associate professor of Ecology Department 2002-2012 National Agricultural University of Ukraine (since January.2009 – National University of Life and Environmental Sciences of Ukraine), associate Professor of General Ecology Department Special research duties in national and international context: 1988-1991 Scientific Secretary of the Academic Council on Theory and Technology of Water Treatment, Ukrainian Academy of Sciences March-April, 2000 Expert-evaluator in the EC research program "Environment and Sustainable Development" – Key Action 1 "Sustainable Management and Quality of Water" (European Commission, Brussels) 2001-2003 Expert-evaluator in National programs of State Foundation for Fundamental Researches (Water technologies and management) 2007-2008 Head of international teams in ITP "Ecological Alternatives in Sanitation"

	2008-2008 Member of working group on organization of the European Workshop (EUW- 2009) for master students May-June, 2012 Member of the working group on preparation of the draft Law of Ukraine "About shortening and banning the use of phosphorus-containing detergents in Ukraine" (The VR Committee of Ecological Policy and National Ecological Council of Ukraine) 2012-till now Member of the initiative group and program coordinator in the Centre of Nutrients Problems under the Ukrainian Chemical Society
Language skills:	Russian - native speaker Ukrainian - fluent English - good
Other:	Scientific interests and experience Water and sanitation, water and waste management, water treatment (especially membrane technologies). Implementation of new water treatment technologies at enterprises of textile, chemical, and pulp and paper industries. Sustainable solutions for waste water treatment plants. Pedagogical experience Teaching of the disciplines (including English-speaking groups): strategy of sustainable development, general ecology, landscape ecology, environmental monitoring, water treatment technologies, water supply and sewerage, ecological culture and ethics. Publications Over 100 scientific papers, 3 monographs, 3 textbooks, 6 brochures, 5 patents

Proposed Position:	**Technical Assistant of Regional Coordinator in Kiev region**
Name:	Yuriy Gaidayenko
Contact information:	Address: 11 P.Pancha str., Apt.62, 04201, Kyiv tel.: +38 (068) 809-19-92 or +38 (093) 650-03-64 Email: yuriygaid@ukr.net
Date of birth:	February 20, 1986
Education:	September 1, 2003 – February 28, 2009 - NTUU 'Kyiv Polytec Institute'. Department of Electric Power Engineering and Automa speciality –Electrical Machines and Devices, qualification – elect engineer.

	September 1, 2006 – July 26, 2008 - Military Institute of Telecommunication and Information System Development at the NTUU 'KPI'. Military Education Department, Intercommunication Department, military and educational specialty (qualification) – Automatic Control Systems' operation, hardware engineer. Commanding officer. September 1, 1993 – June 26, 2003 - High School # 1 in Pereyaslav-Khmelnytskiy, Kyiv region, 'Diploma with Honors' and golden medal for excellent results. 2012-2013 - Training course on RECP Methodolgy in RECPC Ukraine. Assessed company - Trypillja Packing Factory Ltd
Work experience:	<u>December 1, 2012 – until now</u> Assistant lecturer at the NTUU 'Kyiv Polytechnic Instit Electromechanical Dept. <u>April 9, 2012 – until now</u> Trainee at Resource Efficient and Cleaner Production Centre <u>May 15, 2010 – December, 31 2012</u> 3rd-category engineer at the NTUU 'Kyiv Polytechnic Instit Electromechanical Dept. (part-time) <u>September 1, 2010 – May 31, 2012</u> Assistant lecturer at the NTUU 'Kyiv Polytechnic Instit Electromechanical Dept. (part-time) <u>April 26, 2010 – February 11, 2011</u> ABB Ltd., Supply Chain Manager. (part-time) December 1, 2009 – November 30, 2012 - post-graduate study at the NT "Kyiv Polytechnic Institute" <u>May 18, 2009 –November 30, 2009</u> Chief Manager at Private Enterprise 'Piskun V.O.'
Language skills:	English – satisfactory Russian – fluent
Other:	PC-using level: MS Office, SolidWorks, Ansoft Maxwell, MathCAD, Mat Lab. Blind typing method (Cyrillic alphabet). Intellectual property: 3 Ukrainian patents for inventions and 5 Ukrainian utility models. Driver's license

Position:	**Technical specialist on RECP assessment**
Name:	Kostyantyn Tadlya
Contact information:	068 197 6606 tkostiantin@gmail.com
Date of birth:	June 8, 1977
Education:	Institute of Engineering Thermophysics National Academy of Science of Ukraine (2004) - Ph.D. (technical);

	National Technical University of Ukraine "Kiev polytechnic institute" (2000) - Speciality: Thermal physics
Work experience:	2010-till now Expert at Environmental (Green) Investments Fund - Expert on consulting services to GHG emission estimation for Public-Private Partnership Development Program financed by USAID - Researcher in Energy Sector on consulting services in modeling and projecting of GHG emissions of the UNDP Project Capacity Building for Low carbon Growth in Ukraine - Energy efficiency expert, renewable and alternative energy expert on consulting services for developing Low Carbon Strategy of the UNDP Project Capacity Building for Low carbon Growth in Ukraine - JI Projects Assessment and Development. Participation at National Inventory Report preparation. 2009-2010 GreenStream - JI Project assessment and development includes the Coal Mine Methane, Landfill gas, Energy generation and Modernization of steel production facility projects. 2007-2009 MGM International - Clients consultation the CO_2 market questions. JI project assessment and development, including baseline determination, estimation of emission reductions, PDD preparation, technical support and communication with the clients. 2007 - Joint Implementation project development: project documentation development, consulting of potential clients, selection of project ideas. 2000-2007 - Diffusion and oxidation processes modelling for protective MCrAlY coatings for gas turbine blades. - Inverse problems solution of heat and mass transfer processes. - Developing the methods for estimation the operation temperatures and residual life time for MCrAlY coatings. - Software developing - Electromigration processes modelling.
Language skills:	English – satisfactory Russian, Ukrainian - fliuent
Other:	• Software development using C++, Delphi, Fortran, SQL

Position:	**Technical Assistant to Regional Coordinator in Zaporizhzhye region**
Name:	Andrey Vlasov
Contact information:	Ukraine, 69057, Zaporizhia, 1A Yatsenko, Apt.110
Date of birth:	September 3, 1978
Education:	Zaporizhia State Engineering Academy, 2000 Specialty – Mechanical equipment of metallurgical plants, diploma of an engineer-mechanic. Mechanical equipment for *ferrous and non-ferrous metallurgy*
Work experience:	Work experience: - Manager of the laboratory of metallurgical equipment in Zaporizhia State Engineering Academy (2000 – 2004). - Assistant of the Department of metallurgical equipment (2004 - 2008). - Senior teacher at the Department of metallurgical equipment (2008 - till present time). - CP expert in Ukraine (10.03.2011). - Projects: extinguishing of vibration electrode in arc electrical steel making stove of large capacity for the energy-savings at JSC "Dniprospecsteel"; transporting machines for " Zaporizhmashprom" plant. 2009-2010 - Training course on RECP Methodolgy in RECPC Ukraine. Assessed company – PJSC "Zaporizhia Ferro Alloys Plant" Plants contact information: - Public company «Ukrgrafit», Ukraine, 69600, Zaporizhia, GSP-982, 20, Severnoje Shosse; - "Zaporizhmashprom" plant, 69069, Zaporizhia, 5A, Dnipropetrovsk highway, tel.+38 061 7010571; - Ukrniielektroterm Zaporizhia, 69000, 80, 40-years of Soviet Ukraine Str., tel.+38 0612 33-02-11 - PJSC "Zaporizhia Ferro Alloys Plant". 69035, Zaporizhia, Ukraine, 11, Diagonalna Str., tel. +380 (612) 700-41-71. Fax: +380 (61) 700-41-72.
Language skills:	Ukrainian, Russian - native English - satisfactory
Other:	Publications: 1. Strength of materials: Guidelines for the implementation of assignments and engineering projects. - Zaporozhye : ZSEA, 2003. - 17 p. 2. Strength of materials: Guidelines for the implementation of assignments and engineering projects. - Zaporozhye : ZSEA, 2004. - 22 p. 3. Interchangeability, standardization and technical measurement [Text] : handbook for students. - Zaporozhye : ZSEA, 2008. - 240 p. 4. Guidelines and control tasks to perform computational and graphics performance and course of the project "The calculation and design of the conveyor". - Zaporozhye : ZSEA, 2002. - 41 p. 5. Equipment for the production of metals and alloys. - Zaporozhye : ZSEA, 2007. - 172 p. 6. Fundamentals of computer-aided design of process equipment. - Zaporozhye : ZSEA, 2007. - 127 p. 7. Installation, maintenance and repair of metallurgical machines: Guidelines for course work. - Zaporozhye : ZSEA, 2002. - 18 p.

	8. Designs and calculations of metallurgical equipment. Guidelines for laboratory works. - Zaporozhye : ZSEA, 2012. - 56 p.

Proposed Position:	**Accountant of the Centre**
Name:	Luidmyla A. Sivuk
Contact information:	095 808 9452 bina@ukr.net
Date of birth:	May 14, 1961
Education:	1979-1983 Lviv Trade and Economic Institute Accounting and economic activity analysis Certificate of Auditor of Ukrainian Audit Chamber: Series A № 005629 from 25.12.2003
Work experience:	1983-1993 Kyiv-Sviatoshyn district consuming society: accountant, chief accountant, the head of audit commission 1993-1999 Control and audit department in Kyiv State control and audit agency of Ukraine Chief specialist, the head of audit department in construction sector 1999-2000 Audit company "Energypromexport" Ltd. Expert, an auditor assistant 2000-2004 "Company "SALIUS" Ltd. The head of the internal audit department Accounting Introducing accounting at industrial enterprises, Control over adherence to the company audit policy Smiliansky Brewary "SALIUS" (Smila town, Cherkasy region Monastyryshchenskyi pharmaceutical plant "SALIUS" (Monastyryshche village of Cherkasy region) Talnivskyi sugar factory "SALIUS" (Talne, Cherkasy region) Agrocompany "SALIUS" (Talne, Cherkasy region) Dubenskyih meat factory "SALIUS" (Dubno, Rivne region) Kyiv baby food factory "SALIS" (Kyiv) (acting chief accountant - 2003-2004p)
Language skills:	Ukrainian, Russian - native English - satisfactory
Other:	

Proposed Position:	**Translator/Interpreter and Junior Office Manager**

Name:	Oksana Siutkina
Contact information:	5, Metalistiv Str., 03057, Kyiv, Ukraine 380982133731 oksana.siutkina@gmail.com
Date of birth:	December 27, 1991
Education:	2009 – till now National Technical University of Ukraine "Kyiv Polytechnic Institute" Linguistics Department, English and German Languages 2007-2009 Sumy Gymnasium Number 1, class of liberal arts 2005-2007 Sumy Lyceum at Sumy State Pedagogical University named after A.S. Makarenko
Work experience:	January 2012, October 2011 An interpreter at the Fair of British Schools September 2009 – February 2010 National Technical University of Ukraine "Kyiv Polytechnic Institute" English Teacher at the courses for students of technical departments
Language skills:	English - fluent, German - good, Polish – elementary
Other:	Experienced Internet user. Basic computer programs (Microsoft Word, Excel, PowerPoint etc.)

Proposed Position:	**National consultant to Industrial Associations**
Name:	Sergey M. Khudobin
Contact information:	Kyiv, 34, Kchreshatyk Str., Room 309 Tel. +380 99 740 15 50 E-mail: Sm-2009@ukr.net
Date of birth:	February 16, 1960
Education:	1982 graduated from Higher Military College; 1990 graduated from Military Academy; 2009 graduated from Kyiv National University of Internal Affairs of Ukraine (lawyer, law).
Work experience:	1978 – 2003 Service in the army (reserve colonel) commanding positions, operative officer, deputy head of department 2003 – 2006 "Troitsa" company. The head of security department 2006 – till now "Ukrainian Union of Industrialists and Entrepreneurs", Director of Corporate Security Department Activity and professional skills:

	- creation of system of the enterprise economic and legal security; - work with personnel, check of individuals and legal entities; - cooperation with the representatives of police and command bodies; - organization of the enterprise physical and technical security.
Language skills:	Ukrainian, Russian – fluent German – good
Other:	Additional: computer advanced user (Word, Excel, E-mail, Internet, Outlook), Driving skills. Categories B, C, personal car, Experience of work with technical security aids

Annex 3

Candidates for the vacancy of the information manager

Applicant for position:	**National expert for information, communication and office management**
Name:	Vira Gaidar
Contact information:	Larysy Rudenko str. 21-a, 158 Kyiv, Ukraine Cell: +38-063-445-92-06 Home:+38-044-575-25-12 e-mail: verena_hunter@ukr.net
Date of birth:	June 18 1990
Education:	1997 – 2007 Secondary Specialized School # 4 with deep learning of foreign languages (French, English) 2007 – 2011 National Technical University of Ukraine "Kyiv Polytechnic Institute", Chemical Engineering Faculty, Bachelor of Engineering 2011 – 2013 National Technical University of Ukraine "Kyiv Polytechnic Institute", Chemical Engineering Faculty Master's Degree 2013 - Courses of 1C:Enterprise 8.2 Programming
Work experience:	Experience in creating reports, accounts, labour organization, administration for a private company. Creating the user interface in 1C: Enterprise 8.2. for needs of bookkeeping of the company. 2013 – official position of the Director of the private company
Language skills:	Ukrainian - native, Russian - fluent, English - enough to communicate and work with the literature (Certificate London School of English).
Other:	**Computer**: Software: Microsoft Office, MathCAD, AutoCAD, Aproks, Microsoft Visual Studio Programming: C++,Fortran, Basic, 1C:Enterprise 8.2. **Publications**: Int.J. of Applied Mechanics and Engineering ,2011, vol.16,No.2,pp.359-369 Integration of DNA and Bionical Engineering All- Ukrainian Innovations in Science and Technology,2010 ,pp.301 ATRP

Applicant for position:	**National expert for information, communication and office management**
Name:	Kateryna Pryimak
Contact information:	– ***e-mail:*** crankgirl@list.ru; – ***tel***: (066)720-91-80.
Date of birth:	
Education:	from 2010 to 2013 years PhD student of NTUU "KPI", specialty "The technical thermal physics and industrial heat and power engineering"; 2010 year master with honors, qualification engineer-researcher; 2008 year bachelor with honors, qualification bachelor of energy; from 2004 to 2010 years student of Heat and Power Engineering Department the chair of Theoretical and Industrial Heat and Power Engineering
Work experience:	from 2010 year to date - assistant lecturer of the chair of Theoretical and Industrial Heat and Power Engineering (2 years); from 2009 year leading engineer of Scientific and technical center "Ecological technologies and energy saving" (3 years); from 2009 to 2011 years - engineer of Heat and Power Engineering Department (2 year). ***Responsibilities at work*** – participation in the research and development projects; – ensuring the participation and support organizations in tenders; – participation in exhibitions, scientific seminars and conferences; – teaching courses "Mathematical modeling of systems and processes", "Information Computer Technologies", "Fundamentals of Information Technologies" for students of 1, 5 and 6 courses, respectively; – preparation of reporting documents. ***Research interests:*** – investigation of identification and diagnostics of the actual characteristics of energy and power equipment; – analysis of renewable energy using with the aim of heat- and cooling supply; analysis and investigation of Solid Works software.
Language skills:	English – good fluency French– basic level Ukrainian– native fluency Russian – good fluency
Other:	***Academic achievements, awards and prizes*** Laureate of First degree diploma of VIII All-Ukrainian competition "Youth to Energy of Ukraine - 2009: open competition for young scientists and specialists" in the category "Renewable energy", the certificate of the Association of Solid Works,obtained in collaboration 6 patents, issued

	3 guidance and received seven certificates of electronic educational publishing. ***For more information:*** – age - 24 years old, unmarried, have a driving license; – computer knowledge (MS Office, Word, Excel, Internet, E-mail), software Solid Works; – responsible, communicative, learn fast and analyze new information, creative, active, easy to find a common language with people, able to analyze and think logically, consistently works in a team, purposeful.

Annex 4

Proposed Position:	**Technical specialist on RECP assessment**
Name:	Vladislav Rumiantsev
Contact information:	Ukraine, 69065, Zaporozhye, Relyefnaya 10A, Apt. 55
Date of birth:	April 11, 1964
Education:	Zaporozhye Industrial Institute (ZII) – graduated in 1986. Speciality – heating engineering and automation of metallurgical stoves, diploma of metallurgical engineer. Degree: Candidate of tech. sci. Diploma DK № 024782
Work experience:	1987-1988 Engineer of problem laboratory of air pool protection in Zaporozhye Industrial Institute; 1988-1989 Young scientific researcher of laboratory air pool protection in Zaporozhye Industrial Institute; 1989-1992 Post-graduate student of environment protection department in Zaporozhye State Engineering Academy; 1992-2004 Research assistant of problem laboratory on creation of wasteless technologies in Zaporozhye State Engineering Academy; 2004-2012 Candidate of Science of industrial ecology and labor safety department in Zaporozhye State Engineering Academy; 2012- till now The Vice-director of metallurgical department in Zaporozhye State Engineering Academy (2012 till present time).
Language skills:	Ukrainian, Russian - native English - satisfactory
Other:	Participation in projects: the inventory of waste formation sources

Proposed Position:	**Technical Specialist on RECP assessment in Zaporozhye region**
Name:	Hennadiy Kozhemyakin
Contact information:	
Date of birth:	March 31, 1961
Education:	1983 graduated from ZSEA, Faculty of Environment in the specialty "Water management and disposal of industrial waste water" .
Work experience:	1984 - 1989 and 1992 -1997 Laboratory on creation of problematic waste technologies and reduction of industrial emissions into the atmosphere" 1989 to 1992 Post-graduate student at Zaporozhye State Academy 1996 Defended PhD thesis on "Technical hardware for protection of the environment" Since 1997 Teaching at Zaporozhye State Engineering Academy. 2001 Position of an assistant professor of industrial ecology and safety. From 2004 – till now The Head of Department of the Applied Ecology and safety. Since 2002, The Center Director of Industrial Econology Zaporozhye State Academy. Since 2005 The Chairman of the Public Scientific and Technical Council of the State the management of environmental and natural resources in the Zaporizhia region.
Language skills:	Ukrainian, Russian - fluent
Other:	

Annex 5

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
Resource Efficient and Cleaner Production Centre
Gender Mainstreaming Development
October – December 2013
Report

The report on gender mainstreaming development on the CPC activity on period April – July identified country policy has developed legislative base for gender policy development at all levels and in all areas however practical implementation of legal acts is not at appropriate level. Labour policy has limited legal barriers for women however its practice has it much broader. Educational system has no legal barriers for women on technical education however in practice it is full of gender stereotyping. Economical activity of women is high enough however it is not relevant to their income and real participation at levels of decision making. Access to credits for women is limited by non-financial barriers related to their social gender roles and stereotyping. Industry has substantial gender disproportions at the labour market as well as the wage gap what usually increase during recession period.
Main stakeholders have some knowledge on gender issues however usually it is not enough to fully implementation of gender components in respective areas. Lack of women in industry is one of risk factors for the field as a whole and for the project particularly.
The CPC has the potential on addressing gender issues in the frame of the project. To deep gender policies in the CPC was been planned some activity in October - January.
It included following fields:

- The CPC staff gender capacity
- Gender knowledge
- Institutional development of gender policy
- Gender partnerships and networking

The CPC staff gender capacity

Meetings, presentations and seminars with the CPC staff during previous agreement period increased gender capacity what reflected in questions and comments on gender issues becoming deeply, conscious, and more informed. As a follow-up the staff asked to organize the **training on gender aspects of communication**. It took place in October. Participants informed on steps of successful communications, behavior conflicts peculiarity, and situations what could be considered as a gender oriented despite they are not. Participants said on their own experience and cases related to the CPC activity on communications and its gender specificity.
Discussion on sexism in media, ads and other visual products followed by the literature published by the Women's Information Consultative Center (WICC).
All activities were conducted in interactive format with active involvement of female and male participants.

Sex-disaggregated statistics is not a discrete or isolated field. It relates to all fields of statistics and is a tool to facilitate the change needed to address gender issues. Identifying the information required to inform and understand the problems and goals connected with gender issues is essential to the production of gender statistics. Therefore one of steps is clarification principles of sex-disaggregated statistics. It discussed with the staff what gave opportunity to have already some data on 2013. (*Attachment – files: sex-disaggregated statistics eng; sex-disaggregated statistics ukr*)

To have parity representation is possible when women and men in the Project's activity involved at parity base (not less 30% and not more 70%) at least in situations when the CPC could influence it.
2013 statistics differentiated by sex
RECP Experts

	Total	Women	Men	% of women/% of men
Kyiv office	19	6	13	32/68
Kyiv region	26	11	15	42/58
Zaporizzhia region	15	8	7	53/47
Odesa region	21	12	9	57/43
Vinnitsa region	13	4	9	31/69
	94	41	53	44/56

Trainees at trainings

	Total	Women	Men	% of women/% of men
Vinnitsa region	13	4	9	31/69
Kyiv	26	11	15	42/58
Kyiv	5	2	3	40/60
Kyiv	6	3	3	50/50
	50	20	30	40/60

Collected data reflect the situation of parity as on each event as well as in general.

In future if possible, when forming training groups special efforts will be taken to involve men and women on a parity basis (not more than 70% and not less than 30% persons of the same gender).

Gender knowledge

The Manual on Cleaner Production (Part 1 – 4), Kyiv, 2012 **for experts edited under the principle of gender equality**. It has no pictures neither drawing of humans therefore only text's analysis includes gender component. Gender analysis of text looks for bias, gender stereotypes or discriminative statements. Gender recommendations elaborated as a result of this analysis.
In general text doesn't include bias, gender stereotypes or discriminative statements. Text is written in neutral way what is usual way of writing for such kind of publications.

At the same time during gender survey of the RCPC activity was been identified some disparity in practice of analysis of enterprises on their production and energy consuming. So teams at enterprises sometimes included only men.

In general recommended changes could help broader include gender component in manual by detailed process at different stages of cleaner production. *(Attachment – files: manual gender comments, manual gender comments eng)*

Review of a governance primer with providing ideas and recommendations on integration of the gender elements was been also done.
http://www.unido.org/fileadmin/user_media/Services/Environmental_Management/Contacts/Contacts/GovernancePrimer_web_low.pdf

It contains analysis of the main text as regards availability of discrimination or stereotype provisions; analysis of additional texts (description of the case studies and quotations); recommendation on introduction of more gender sensitive texts and provisions, as well as visual products analysis. Analysis of the main text of primer on gender bias, stereotypes, discriminative statements and looking for possibility to include gender sensitive elements in the text.

The primer's text doesn't include gender bias, stereotypes, discriminative statements however it could be added by some positions what could advance more clear gender mainstreaming in the whole activity of the UNIDO and its management specifically.

The edition also added by some terms of glossary and additional texts.
Additional texts help to understand the content deeply and in more practical way. Therefore its importance is not less as of the main text.
These texts consist of countries' stories and quotes.
Countries' stories don't have gender bias, stereotypes, and discriminative statements.
Quotes as well don't have gender bias, stereotypes, and discriminative statements but from 7 quotes of real people 7 are men.
It could be changes little bit by inclusion of some quotes of women.

The primer includes only 6 pictures what are part of its cover. 3 pictures show people – 1 wit man, 1 with women, and 1 with person where sex is not clear identified. Despite formally the parity of women and men at pictures followed women and men presented in different roles what more reflect their traditional gender roles. The man looks higher professional like engineer or manager. At the same time women do more simple work on packing or checking packing. The impression is many women could do the work done by one man.

This example shows clear the formal parity sometimes discover more deep roots and manifestations of inequality. (*Attachment – file: Primer gender comments)*.

Institutional development of gender policy

Institutional development is very important part of gender mainstreaming process. It keeps institutional memory, support sustainable development and guarantee efficiency and results. It has to be gradual, consequent, and regular.
Institutional development of gender policy for the CPC started from the **Gender Focal Point (GFP)** establishment, draft of gender strategy development, and monitoring, evaluation, and planning.

Small organisations like the CPC are unlikely to have specialist departments, indeed the GFP can be someone who has to combine gender mainstreaming with other duties which can be disadvantageous in terms of trying to support other colleagues but advantageous in that at least one member of staff is mainstreaming gender into their work. However, for large organisations the choice has to be made about specialist units or dispersed specialists. There are advantages and disadvantages to both models. There is a danger that a special, separate gender unit may be marginalised within the organization; on the other hand, if it is well managed, it might have sufficient resources to build up a good documentation centre and form a recognised focal point within the organization. In comparison, the distribution of a handful of gender experts over the whole organisation could lead to less visibility and accessibility, especially if they do not have regular support.

The next decision is about the background of the person to be appointed as the GFP. Partly this reflects the tasks they are to carry out. In a highly technical sector such as clean energy there are

arguments for and against having a social scientist: they have a better understanding of gender issues at the micro-level which is so sorely lacking in the sector. On the other hand, a technical person with training in gender is able to speak the 'technical language' and might be more easily accepted by colleagues with a technical background.

It is not essential that the GFP be female. There are increasing numbers of men profiling themselves as gender experts. The advantage of a male GFP is that often men listen to and respond positively to men, particularly in areas to do with personal behaviour. If the GFP is a woman, it is important that a man on the staff (technical or non-technical) should be made her deputy with co-responsibility for gender. This arrangement helps overcome the notion that gender is 'women's business' and therefore that only women need be concerned about it. If the gender mainstreaming is seen as such by the majority of (male) staff members, there is a strong possibility that efforts to mainstream will be marginalised. In the dispersed model, it is good strategy to rotate responsibility every two or three years and to avoid consistently appointing young women.

For the initial period there is a simple model of the GFP (*Attachment – file: Gender Focal Point SoW)* for the CPC what could be reviewed later (in one or two years).
At this period Valeria Tkachenko appointed as the GFP of the CPC.

Monitoring, evaluation and planning gender events for future

Gender activity report 2013 prepared and it included both periods of the gender expert's agreement (April – July and October - December) (*Attachment – file: gm in the REaCPC report 2013*). Conclusions and recommendations of the report included in this report also.

Informal monitoring was done during the whole period. After each training event oral evaluation of each event has been conducted by female and male participants. This report has been prepared based on conclusions and recommendations received during the reported period.

A draft proposal of the Gender Strategy for the Centre (*Attachment – file: Gender Focal Point SoW)* address following elements:

- Team creation and team working. Staff motivation. Communication
  Tips and recommendations:
- The "command and control" style of management is no longer the most effective method to motivate employees. Women usually are more vulnerable to this style and director has to consider it in his or her everyday work.
- The main purpose of the gender sensitive management is to create work teams where every one's opinion is valued. The creation of such an environment should create improved business results. To accomplish this task, team leader will need to ensure leadership roles within the team are equally shared between the men and women.
- Identify women who could be promoted and ensure men are comfortable with the promotion of women.
- Training of experts
- Use edited Toolkit for experts
- Work at company level. Cooperation with partner-institutions
  Tips and recommendations:
- It is important to work at company level gradually and escalating slowly gender mainstreaming process
- Motivational tools could be used for partner companies – gender award for companies with gender progress, join gender events for companies, etc.
- Visual products and information events

- The Women's Information Consultative Center www.empedu.org.ua could be also included in the list of partners at the site
- The part of site "Useful links" also could be added by respected links on organizations and sources related to gender policy

- Technology transfer – impact to women and men in the company
  Tips and recommendations:
  Technology transfer is never gender neutral. Areas of focus for technological intervention have gender peculiarity:
- Technology needs and needs assessment (it is important to involve both men and women in working groups, assessment teams, etc.)
- Technology information (it is important to test informational materials on "friendly" language for both women and men)
- Capacity building for technology transfer (it is important to involve men and women at parity base into educational programs)

These elements reflected in the draft Gender Strategy in following components:
- Political will
- Development of the instructions on practical steps aimed at gender component introduction in the Center
- Training component
- Development of a list of gender consultants
- Networking and partnerships
- Monitoring and evaluation
- Communication strategy development

It reflects primary level of gender mainstreaming process in the CPC and identifies some steps of its further development with deeper involvement of the CPC staff.

Plans on 2014 developed at the Gender Strategy ideas.

It could include following activity:

- Policy statement on gender mainstreaming development, approve and sharing (It could be the Order of the CPC Director on inclusion gender components as a crosscutting issues in all activity of the Centre and its partners).
- Identification fields of work in the Centre what need chapter on gender mainstreaming operations (experts training; new partnership development, etc.)
- Description methods used on gender mainstreaming on fields (areas of work) in the instruction relating to specific tasks of work of personnel.
- Identification training needs of staff and partners (possible topics – gender component of management using case of Primer's edition; gender equality at the job place, etc.).
- Annual training plan development (at least twice on year)
- Regular training holding
- Keeping list of partners update
- Annual partnership events on women in industry and energy sector
- Participation in partners events related to gender mainstreaming (including the CPC GFP into mail lists of gender groups).
- Looking possibility on establishment Gender Expert Council (GEC) on the Centre (it could include both staff and invited experts what could help to implement the gender

mainstreaming).
- Collection sex disaggregated statistics
- Annual evaluation and regular monitoring changes, training needs etc.
- Gender page at the Centre site starting
- Quarterly gender digest preparing and sharing (with the help of the Women's Information Consultative Centre what has long-term experience on it).

Gender partnerships and networking

Gender mainstreaming in industry is not very good developed already therefore partnerships and networking are important part of support for this process. During the agreement period possibility of networking investigated. The meeting of women in industry designed for December 10th however because the political situation that time it was not possible to organize the event this date or around. (*Attachment – files: women in industry announce eng, women in industry announce ukr*)

The meeting had place January 22. It brought together about 20 participants. The Director of the CPC Ihor Shilovych introduced to participants the idea of the meeting and said about first steps done in 2013 on gender mainstreaming. The Deputy Director of the SDS Petra Widmar also greeted the CPC on such meeting.

The Gender Expert of the Centre Olena Suslova introduced results of gender mainstreaming process in the Centre as well as some prospects on 2014. She also said about some facts finding of the research on peculiarity of gender difference in technical education and industry.

The Deputy Director of the Ukrainian Gender Education Center at the NTUU KPI Yuliya Strebkova told on the Center's activity and possible crosscutting and cooperation with the CPC.

Participants also discussed following questions:

- Do have women in Ukraine some barriers on work in industry?
- Do have women in industry in Ukraine some specific problems?
- Do industry needs more women? Why yes or why not?
- What could help to increase the number of women in industry and their advancement?
- Is it important to have some forum to discuss women's problems in industry?

What is a problem?

- Women have always been an integral part of industry however traditionally there was little emphasis placed on the role and contribution women.
- Women have not played an active role in industry decision-making.
- In addition, industry is regionalised and many women felt isolated.
- Women in industry lack a valuable models for women involved in industries.

What could be done by network?

- Develop initiatives designed to increase the number of women in engineering majors and careers.
- Provide opportunities for women engineering students to develop leadership skills.

- Inspire women to achieve their fullest potential as engineers and as leaders, and celebrates their accomplishments and successes.
- Foster a dynamic environment that encourages the personal and professional development of all engineering students.
- Work with government to ensure that much more consideration is given to the social impacts of decision and policy making.
- Encourage undergraduate women to pursue graduate studies.
- Enhance the overall experience of women and facilitate their entry into careers in academia, research and industry.

Participants expressed their opinion on the topic and decided to establish the initiative group on staring the network "Women in Industry". Following persons expressed their wish to do it:

- Valeria Tkachenko, the CPC
- Yuliya Strebkova, the Ukrainian Gender Education Center at the NTUU KPI
- Lyudmyla Nestrylyay, the SDS
- Alla Syngayivska, Center of Business Ethic
- Olena Suslova, the WICC

They decided to meet during next two weeks to discuss practical steps of the network development.

Cooperation with gender experts of the Women's Information Consultative Center (WICC) started 2013. The literature published by the WICC shared in the CPC.
The Gender Strategic Platform informed on gender mainstreaming process in the CPC and experts invited to cooperate.
Within the reported period the CPC also established partnerships with the Gender Center at KPI (Leader – Yulia Strebkova) and informal gender oriented groups (Contact person – Lizaveta Kuzmenko).

Conclusions and recommendations

- Gender integration process at the Center was being developed gradually from a "zero" point to receiving systematic knowledge and skills by the Center personnel and implementation of practical steps due to the Center management political will.
- Steps made in this direction require enhancing by institutional means including approval of gender strategy, plan and appointment of gender focal point.
- Specific character of the Center operation and limited number of experts able to provide practical support in gender policy implementation should be considered; it requires more active involvement of the Center personnel and partners into dissemination of gender related knowledge and skills.
- Approve of the Gender Strategy and Plan on 2014 is important for the process sustainability.
- More active communication with outside actors on gender mainstreaming is crucial.
- Experience exchange on gender mainstreaming in the CPC is important in Ukraine as well as internationally.

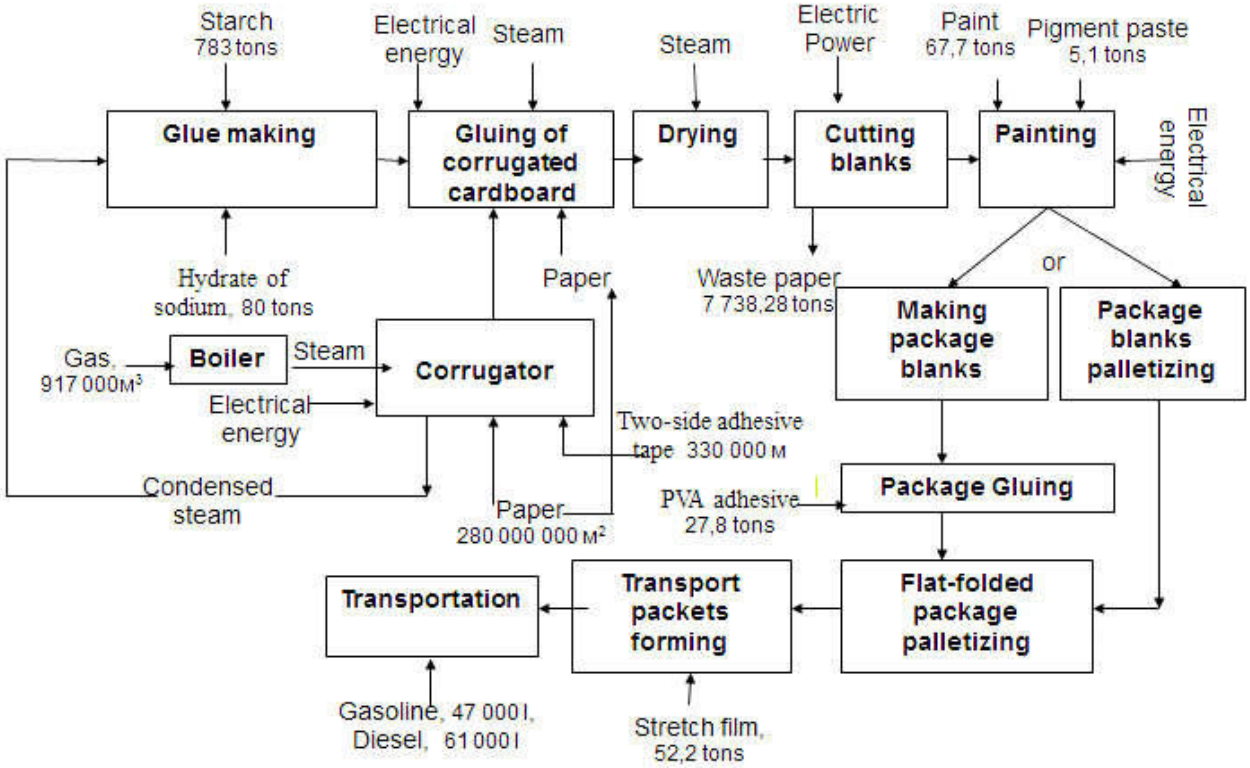
CASE STUDY ON PAPER COMPANY 'A'

COMPANY DESCRIPTION

Some Paper Company 'A' has 300 employees. The installed capacity is 70 MIO m^2/year (41 kilotons/year). The company's products are sold in the domestic market as corrugated cardboard packing. The company top-management showed high interest in participation in the CPC-project because they wanted to learn how to continuously improve effectiveness and to decrease negative environmental impacts.

PROCESS DESCRIPTION

Figure 1 represents a schematic overview of the production process



A brief description of the production process is as follows:

- Raw materials are paper rolls which are kept in cold storage for cooling.

- Then rolls inlay to take-off unit and paper comes to the corrugator, where a production of the corrugated cardboard (fluting) takes place.

- After that the corrugated paper follows to a gluing machine. By a glue roller on the tops of corrugated paper the glue tape is placed on each side (the amount of glue is regulated by the change of a position of the metering roll). Then corrugated layer is stuck together with a flat cardboard which is densely glued to the tops of corrugated paper by the rider roll. This stage completes the process of production of double-layer corrugated paper.

- Then double-layer corrugated paper is cut in pieces of necessary length from which a box is made of later. After that the corrugated paper is transported to the nibbling machine.
- The nibbling process is realized by 4 machines: 2 for rotary cutting + 2 for flat cutting.
- A painting machine is used for painting process. Paint from the machine flows into the special sewage system, and from there to a waste treatment plant.

- A shredding machine is used for wastes storing. There are also small shredding machines additionally installed in the ventilation system shredding up the cardboard-waste from a production. The shredded pieces of cardboard are pressed on and piled up for transmission to processing.

METHODOLOGY APPLICATION

The UNIDO *Cleaner Production Methodology* was used for the plant assessment to identify and implement options for reduction of energy, materials and wastes. Some of the interesting experiences include the following:

- ***Task 1 – Meeting with the top management***

Trainees conducted general inspection of a plant, after that they met with the top management to outline the ways and plan of further work. The composition of the working group was also discussed.

Lesson learnt: Cooperation and discussing with the top management gives the understanding of some important problems faced by the company. General inspection of the enterprise is essential for understanding of the whole technology process.

- ***Task 2 – Pre-assessment***

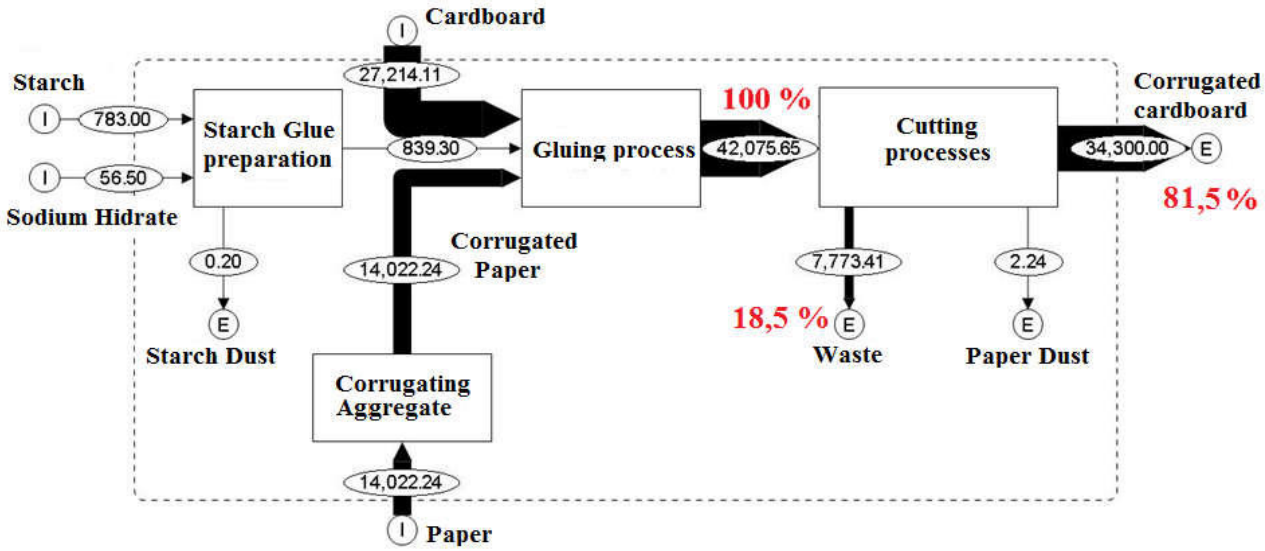
The working group together with the trainees conducted the pre-assessment to get the initial data and estimated the main bottlenecks which were the main reasons causing the extra-waste.

Lesson learnt: Pre-assessment gives the possibility to focus on the main problem divisions or sections in the technology process at the company.

- ***Task 3 – Material and energy balance***

Due to the fact that material use produces such an impact on the energy consumption, the working group established a material balance. For example, when materials are lost in the production process, all energy necessary for the production of the interim product of paper making is wasted.

Figure 2 represents a material balance



Lesson learnt: Establishing a material can be useful in identifying energy losses also.

- ***Task 4 – Technical proposals for the company operation improvement***

The working group discussed and proposed technical proposals aimed at the improvement of the effectiveness of the company and paper-waste reduction. The proposed options were divided into two groups:

- those with investing requirements or low-cost
- those with certain investing requirements.

Lesson learnt: When an option requires high investment the Net Present Value should be calculated in addition to the payback period to determine financial feasibility of the option.

- ***Task 5 – Continuous improvement***

It was suggested to continue the program of clean production on the company and carry out regular monitoring. It was also suggested to provide more precise audit of material and power resources on the basis of general analysis conducted and to focus on decreasing of losses of paint, glue and also

electric power (an improvement of electric power quality in the network of the company). One of the important suggestions was to organize the CP-trainings for the employees of the company at all levels providing the possibility for independent and more extensive use of the proposed CP-methodology.

OPTIONS

- The focus areas were the Corrugating Aggregate Department.
- In total seven options were studies. Three options have been implemented and four options to be implemented after the new corrugated line is completed.
- Of three options implemented, only one required some investment costs.
- Each year, UAH 4.57 MIO is saved

Table: EXAMPLES OF OPTIONS IMPLEMENTED

PROCESS IDENTIFICATION WITH CP IDEA	PROPOSAL	RESULT		SAVINGS OBTAINED
		Before	After	
Decreasing of paper waste	Cutting process optimization + Transition to the system of accounting in kilos (instead of square meters) which is accepted in international practice + Reorganization of the operating shifts without breaks	7 703 t/year	5 905 t/year	**4,31 MIO UAH/year**
Decreasing of gas consumption		16 794 MW-h /year	16 122 MW-h /year	**260 thous. UAH/year**

FOR MORE INFORMATION

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CASE STUDY "MODERNIZATION OF THE LIQUID GASES CUTTING PLANT BY IMPLEMENTATION MODERN LASER EQUIPMENT"

Nordic Environmental Finance Corporation (NEFCO) provides financial support of the project. Investments is 100 000 Euro.

List of options: Subject of the RECP Project at the Company B is a modernization of the metal sheets cutting area (sector) by implementation the new equipment of a high technology level. New equipment should include the specific tool which will be equipped with a fibrous ytterbium laser.

Before implementation a metal sheets cutting is provided by using a gases flame cutting plant; this type of cutting results the considerable losses of metal, high consumption of gases mixture (liquid gases for cutting) and negative influence on environment.

In addition this type of cutting requires the specific working efforts on adjustment; finish grinding and other processing on components fitting because of deviation of details sizes. New laser cutting plant allows: a) to decrease an additional working efforts on adjustment on ~30…35% (now cutting out of 1 hole in the tube plate cutting out needs 3…5 minutes and about 20 minutes of finish grinding; after new plant implementation the processing will need about 1 min); b) rejects will be reduced (now an improvement of deviations takes about 5…8% of processing time); c) now metal wastes due to the flame cutting related to 1 running meter of cut are average (2...4)% of 1 m^2 sheet of metal.
Goal of the project: reduction of metal losses, rust output reduction (dust and aerosols), elimination of the old technology equipment from the technology process (taking off liquid gas using, flame gas cutting plant replacement), ecology benefit achievement (reducing of smoke and dust output), improvement of working places conditions due to the essential reducing of metal evaporation (chromium, nickel etc).

Summary table of benefits

Operation cost [per year]	**Existing expenditures**	**After options implementation**	**Pure annual saving**	
			Units	**Euro**
Liquid gas, m^3	31000	0	31000	15000
Electricity, Kwth	108 000	113 000	- 5 000	- 500
Metal, t	140	125	15	16800
Ecology taxes, Euro	3 600	2800		800
Maintenance, Euro	11 000	5 800		5200
Working efforts (adjustment, finish grinding…)	120500	74000		46500
Total saving			**83800** Euro	
Payback period			**1,79 Years**	

Modern equipment implementation provides reducing of CO_2 emission. Calculated amount of reduction is 75 t per year.

Reduction of the dust (melted metal drops) – calculated amount within 600…750 kg/year

This time 50% of implementation is completed.

Training of Trainers Workshop (ToT) - Kiev, 14/15 May 2013

Summary and purposes of the mission	This mission had 4 major aims: 1. Training of expert trainers 2. Methodology and didactics / working with the UNIDO CP toolkit and additional materials and tools 3. Improving feedback from experts to companies 4. Introducing a learning management platform

Participants from Swiss Reference Centre, GIZ and UNIDO

	Name	Institution	Email	Dates
1	Sibylle Ganz-Koechlin	TripleT	info@trainingthetrainers.ch	13-15.5.2013
2	Emmanuel Oertlé	FHNW	Emmanuel.oertle@fhnw.ch	14-15.5.2013

Agenda

Time	Content/ Procedure	Method	Responsible
	Tuesday 14th Mai 2013(Day 1)		
09:00	Welcome and mutual introduction of participants		All
09:15	Presentation and discussion of the objectives and program of the ToT, needs and wishes from participants		Sybille
	Basics: methodology & didactics: • How to get your point across • How to teach something to someone / communicating skills / facilitation skills (using trainer's own material)		Sybille
10:15	*Coffee break*		NCPCU
10:30	**How to use the UNIDO toolkit effectively**: • Working with examples from the toolkit	Group work Single/pair work	Sybille
13:00	*Lunch break*		NCPCU

Time	Content/ Procedure	Method	Responsible
14:00	**Example: How to use the toolkit for teaching material flow analysis (MFA)?** • „Making coffee“ Example & exercise from V3 (draw material balance) as well as V4 (energy analysis)		Sybille
14:45	**How to use additional tools and software to enhance and facilitate selected topics**: • Introduction to the freeware “Stan” to be applied to MFAs	Presentation and live demonstration	Emmanuel
15:30	*Coffee break*		NCPCU
15:45	**Exercise**: Simplified material and energy flow analysis using Stan on the participant’s laptops	Group Work with laptops	Emmanuel
16.45	Homework: STAN and Moodle		Participants
17:00	Evaluation and closure of the day		Sybille
Time	**Content/ Procedure**	**Method**	**Responsible**
Wednesday 15th Mai 2013(Day 2)			
09:00	Welcome and discussion of the first day		Sybille
	How to approach a company: • Stakeholders, Goals, Incentives, Instruments	Group work Single /pair work	Sybille
10:15	*Coffee break*		NCPCU
10:30	**Preparation for rehearsal in plenary** • Preparation of a topic • Working with examples from the toolkit V 10 / worksheets 10-4/ 10-5	Preparation work	Sybille / All
11:00	**Introduction to feedback rules**	Flipchart	Sybille
11:00	**Rehearsal in plenary with feedback**	Role-play (filmed or not)	Sybille / All
13:00	*Lunch break*		NCPCU
14:00	**Continuation of rehearsal with feedback**		All
	Integrated coffee break		NCPCU
15:00	**Introduction to the Moodle Platform -**	Live demonstration	Emmanuel

Time	Content/ Procedure	Method	Responsible
15:30	**Applying the learning management platform** • How to use Moodle as a trainer – basic functions • How to use Moodle to collect and display all relevant RECP training material in English, Russian and Ukrainian and share it between the trainers team	Exercise	Emmanuel / All
17:00	Evaluation and closure of the day		Sybille
17:30	Apéro and handout of certificate		NCPCU/Emmanuel

List of participants:

1. Shylovych Igor L.

2. Pavshuk Valery Mayovych

3. Sakalosh Taras V.

4. Elena Rudenko

5. Tchaikovsky Alexey

6. Uzunov Alexander

7. Hohotva Alexander P.

8. Fur Elena

9. Redchyk Valery N.

10. Andrey Vlasov

11. Vladislav Rumyantsev Rostislavovich

12. Taratuta Constantine V.

13. Shovkalyuk Marina M.

14. Pyetushkova Ekaterina

15. Elena Shevchenko

16. Tsapar Vitaly S.

17. Gaidar Faith S.

18. Haydayenko Yuri

19. Tadla Konstantin A.

20. Byelanovskyy Dmitry V.

21. Poznyakov Paul O.

22. Radchenko Stanislavski

23. Zadvernyuk Vladimir

Participants	Sibylle Ganz-Koechlin, Emmanuel Oertle, RECPC staff, participants in workshop see separate list
Date	14/15 May 2013
Subjects discussed and main outputs	

Basics: Methodology & didactics

How to use the UNIDO-toolkit effectively

How to approach a company (including communicative skills)

How to use additional materials and tools to emphasize on selected topics from the UNIDO toolkit:

Half a day was used to cover the basics of methodology and didactics and to deepen a subject introduced from the UNIDO toolkit Volume 3: material flow analysis (MFA) with a practical exercise from the toolkit. (Breaking down material to different ability levels etc -all relevant material used to be found on the new moodle platform, see below). An additional presentation was made and a new software (STAN) introduced to the participants. They could explore the software and use it for an exercise. It is foreseen that the participants use the software for future MFA to be done within the different RECP assessments.

How to approach a company

Exercise based on a newspaper article concerning the dire energy situation at Ukrainian universities: how to identify key stakeholders, decision makers and champions, and whom to address with suggestions (also using toolkit V 10). Role-play filmed and performance discussed in plenary.

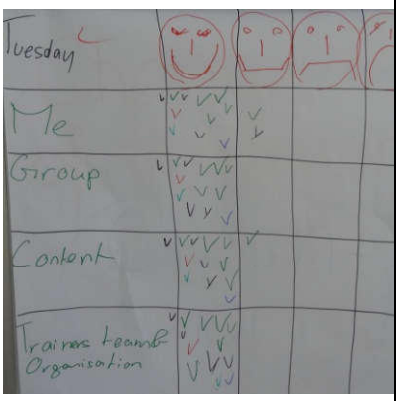
Introduction of an online exchange platform for the different trainings and in-plant assessments:

A new platform was introduced to the participants in order to facilitate the organization of trainings and distribution/exchange of training materials. The whole ToT training was done using this platform, so that the participants could get used to it. Furthermore, different exercises/activities have been conducted with it (*e.g. quiz, editing of a new course, etc.*). The platform is very flexible and might be used for the following activities in the future:

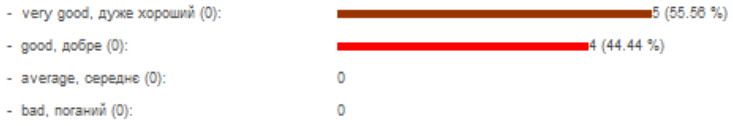
- Organization of trainings
- Review of the in-plant assessments by the Swiss Reference Centre
- Exchange of documents and references between the RECP experts
- Coordination of activities and key documents exchange between Switzerland and Ukraine

Feedback and evaluation from the participants:

After the first day, a simple anonymous evaluation was made (see picture) and on the second day, the evaluation was done using the online platform.



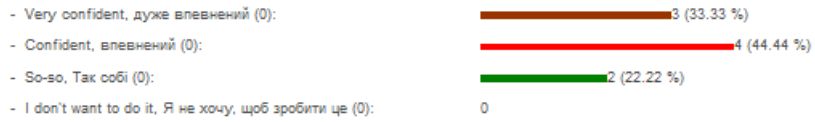
1 - How did you like this training? How useful was it for you?



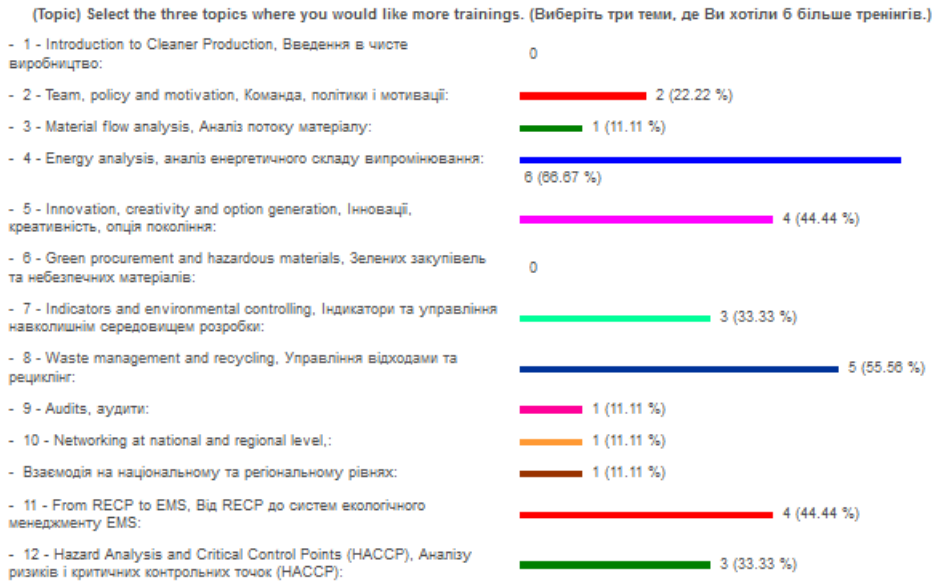
2 - Do you have any feedback you would like to share on this ToT training? (answers are "google translated")

- Thank you for the seminar. I received useful tools for survey companies, as well as different approaches to teaching the material. I liked the combination of practical work and group work, live discussion.
- High professional level of the trainings .
- I like the structure of the workshop - many practical problems, working both independently and in groups.
- all good
- Lots of very useful information and practical exercises. Thanks a lot! Coffee-making - the most exiting! And of course I should mention the lemur:) My best wishes to you, dear trainers!

3 - How confident would you feel to train additional experts in the future?



4 - Select the three topics where you would like more trainings.



5 - Are there some specific topics or methodologies you would like to learn (name them)?, Чи є

якісь конкретні теми або methologies ви хотіли б дізнатися (назвіть їх)?

- Больше информации о програмных продуктах:
  1. PHAROS
  2. BEST
  3.FIT
  4. MCCT
- трансферт технологій в "зеленій економекономіці"
- Ознайомитися з програмним забезпеченням для моделювання та аналізу енергетичних витрат будівель та інших об'єктів. Наприклад, EnergyPlus, Modelica, Ansys, тощо.
- Програмне забезпечення для моделювання енергетичного стану будівлі, програми для графічного відображення результатів розрахунків.
-
-
- Помощь в работе с программой СТАН на русском языке
- Как зайти на предприятие удачно?
  Больше программного обеспечения.

Conclusions and recommendations

This was the first time that members of the Swiss Reference Centre conducted a training with the RECP Centre Ukraine and all participants and trainers were really positive on the outputs of this 2-days training. The main conclusions and recommendations are:

- Usual trainings from the RECP are normally "purely technical" and this ToT could bring other aspects across, such as how to approach the right person from a company in order to get your point across with most efficiency as well as adapting the toolkit for particular situations and contexts. Participants appreciated these additional skills that might sometimes be as important as the technical content.
- All the participants were very active and motivated during the training and the general atmosphere was excellent, full of motivation, commitment and willingness to go forward.
- The different tools introduced were understood by the participants and might be used in the future in the frame of RECP assessment.
- There is a need to translate (by an external translating office)a "trainer package" to Ukrainian based on the UNIDO toolkit and other sources, in order to improve future training conducted by the RECPC trainers.

Команда центру надає підприємствам України висококваліфіковану технічну та технологічну експертизу, допомагає оцінити та реалізувати потенціал оптимізації виробництва, вивести підприємство на новий рівень ресурсоефективності та конкурентоспроможності.

«Для нас впровадження ресурсоефективного та чистого виробництва - це не просто робота, а свідомий щоденний внесок у розвиток промисловості України»

Команда Центру ресурсоефективного та чистого виробництва

КОНТАКТНА ІНФОРМАЦІЯ

Київська міська інноваційна галузева організація роботодавців «ЦЕНТР РЕСУРСОЕФЕКТИВНОГО ТА ЧИСТОГО ВИРОБНИЦТВА»
Національний технічний університет України «Київський політехнічний інститут»
проспект Перемоги 37, корпус 6, офіс 3
м. Київ, 03056, Україна

Тел.: +380 44 406 80 62;
e-mail: ncpc@ukr.net;
веб-сайт: www.recpc.kpi.ua

Центр створено в рамках проекту Організації Об'єднаних Націй з промислового розвитку (UNIDO) з ресурсоефективного та більш чистого виробництва
Донори проекту - Швейцарська Конфедерація та Республіка Австрія
Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Грудень 2013 року

ЦЕНТР РЕСУРСОЕФЕКТИВНОГО ТА ЧИСТОГО ВИРОБНИЦТВА

Створено за підтримки Організації Об'єднаних Націй з Промислового Розвитку (UNIDO) в рамках проекту з розвитку ресурсоефективного та більш чистого виробництва в Україні

Ефективність підприємства – його майбутнє

Київська міська інноваційна галузева організація роботодавців «Центр ресурсоефективного та чистого виробництва» співпрацює з підприємствами, які відрізняються за профілем та географічним розташуванням, особливостями виробничих фондів, технологічних процесів, традицій виробництва та менеджменту. Проте спільним для всіх підприємств є прагнення до економії коштів та підвищення ресурсоефективності виробничих процесів. Затрати на матеріальні та енергетичні ресурси складають значну частину собівартості продукції, тому суттєво впливають на її кінцеву ціну та конкурентоспроможність підприємства.

Зменшення неефективних виробничих витрат – необхідний крок, який робить підприємство стабільним та впевненим у завтрашньому дні. У деяких випадках ресурсоефективність є питанням виживання для підприємства.

З 2007 по 2011 рік Центр в рамках пілотного проекту впроваджував методику UNIDO з ресурсоефективного та більш чистого виробництва на 20 підприємствах України.

На цих підприємствах було проведено комплексний технічний аудит, основні етапи якого передбачають:

Центр передає свій досвід та допомагає підприємствам

- Створити команду з числа співробітників підприємства, яка постійно та систематично використовуватиме методику UNIDO на різних рівнях виробництва, усвідомлюючи цілі, завдання та користь від ресурсоефективності.
- Опанувати складання балансів матеріальних та енергетичних ресурсів, які дозволяють із застосуванням інтегрального підходу ідентифікувати та оцінити проблемні зони.
- Підрахувати явні та неявні втрати/затрати виробничих ресурсів.
- Оцінити ефективність процесів та роботи обладнання, потенціал розвитку підприємства.
- Розробити рішення для різних за складністю технічних та технологічних задач.
- Підвищити обізнаність робітників підприємства про прості та ефективні методи, що дозволяють зменшити витрати виробництва.
- Підготувати пакет документів для отримання пільгового фінансування для впровадження нових технологій та обладнання.

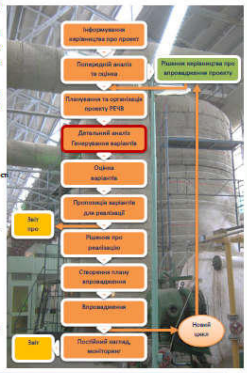
www.recpc.kpi.ua www.recpc.kpi.ua

ПРОГРАМА ОРГАНІЗАЦІЇ ОБ'ЄДНАНИХ НАЦІЙ З ПРОМИСЛОВОГО РОЗВИТКУ «РЕСУРСОЕФЕКТИВНЕ ТА БІЛЬШ ЧИСТЕ ВИРОБНИЦТВО»

Зменшення споживання ресурсів - Шлях до сталого виробництва!

Підхід Організації Об'єднаних Націй з промислового розвитку (UNIDO) до ресурсоефективного та більш чистого виробництва (РЕБЧВ) є превентивною, інтегральною стратегією, яка застосовується до всього виробничого циклу з метою:

- підвищення ефективності використання сировини, енергії та води;
- зменшення негативного впливу на оточуюче середовище за рахунок зменшення кількості відходів та викидів виробництва у місцях їхнього утворення;
- зменшення шкідливого впливу продукції на оточуюче середовище на протязі її життєвого циклу.



Послідовність етапів впровадження РЕБЧВ на підприємствах

ЦЕНТР РЕСУРСОЕФЕКТИВНОГО ТА ЧИСТОГО ВИРОБНИЦТВА

Київська міська інноваційна галузева організація роботодавців

Шановні учасники конференції!

Організацією Об'єднаних Націй з промислового розвитку (UNIDO) у 2012р. за ініціативою Міністерства економічного розвитку та торгівлі України започатковано проект «Сприяння адаптації та впровадженню ресурсоефективного та більш чистого виробництва шляхом створення і роботи Центру більш чистого виробництва в Україні». Мета проекту – сприяння ефективному використанню ресурсів, підвищення конкурентоспроможності українських підприємств та зменшення негативного впливу промисловості на оточуюче середовище. Проект спрямований на впровадження методики UNIDO з більш чистого виробництва на вітчизняних промислових підприємствах, яка є інструментом сталого розвитку. Застосування методики дасть змогу вітчизняним підприємствам забезпечити відповідність виробничих процесів вимогам національних і міжнародних стандартів якості та екології.

Виконання проекту покладено на Київську міську інноваційну галузеву організацію роботодавців **«Центр ресурсоефективного та чистого виробництва»** (КМІГОР «ЦРЕЧВ»), яку створено під егідою UNIDO на базі Національного технічного університету України «Київський політехнічний інститут». Засновниками КМІГОР «ЦРЕЧВ» виступили НТУУ «КПІ», Науковий парк «Київська політехніка» та Український союз промисловців та підприємців.

Основні види діяльності Центру РЕЧВ, які забезпечують поетапне впровадження методики UNIDO щодо ресурсоефективного та більш чистого виробництва на підприємствах:

- комплексний технічний і технологічний аудит підприємств з подальшою розробкою технічних рішень, спрямованих на скорочення споживання ресурсів та підвищення ефективності виробничих процесів;
- незалежні експертні оцінки при впровадженні нових технологій;
- організація навчання технічного персоналу;
- підготовка та поширення інформаційних матеріалів щодо ресурсоефективності, інноваційних технологій та сталого розвитку промисловості;
- надання консультаційної допомоги щодо реалізації інноваційних проектів/моделей в бізнесі, зокрема, моделі хімічного лізингу (http://www.chemicalleasing.com).

Додатковим поштовхом для реалізації мети проекту стало підписання у 2013 році угоди між UNIDO та International Finance Corporation (IFC) щодо співробітництва у впровадженні в Україні проектів з ресурсоефективного та чистого виробництва. У межах цієї угоди IFC згідно двох спеціальних Програм, які спрямовані на стимулювання інвестицій у ресурсоефективні проекти, співпрацює безпосередньо з КМІГОР «Центр ресурсоефективного та чистого виробництва», надаючи йому консультативну підтримку. Мета такої співпраці полягає у допомозі підприємствам щодо залучення інвестицій в проекти, які стосуються чистого виробництва, впровадження ресурсоефективних технологій та сприяння покращенню екологічних показників українських компаній.

На сьогоднішній день в ході реалізації проекту за підтримки НТУУ «КПІ» підготовлена команда спеціалістів для впровадження методики UNIDO. Методика успішно пройшла апробацію у понад 40 країнах світу, і цей досвід дозволить українським підприємствам підвищити ефективність використання матеріальних та енергетичних ресурсів і, як наслідок, збільшити їхню конкурентоспроможність.

Донори проекту

Уряд Швейцарії — Schweizerische Eidgenossenschaft, Confédération suisse, Confederazione Svizzera, Confederaziun svizra

Уряд Австрії

Координатор проекту

UNIDO

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Химический лизинг

Химические вещества, как природные, так и искусственно синтезированные, являются неотъемлемой частью современного производства. Они используются как в основных, так и во многих вспомогательных процессах, например, очистка оборудования, нанесение покрытий, смазка и т.д.

Во многих компаниях, по разным причинам, химические вещества хранятся и используются не достаточно рационально, что приводит к чрезмерному их потреблению и образованию вредных отходов.

В результате создаются дополнительные риски, как на самом производстве, так и за его пределами. Повышение экономической эффективности производства и применения химических веществ с одновременным уменьшением рисков и вредных воздействий является одной из важных задач предприятий. Такую задачу решает новая бизнес модель – Химический лизинг, которая учитывает экономические интересы и поставщика и потребителя химических веществ.

Химический лизинг — новый подход к устойчивому управлению химическими веществами

Традиционная бизнес модель основана на получении поставщиками (производителями) прибыли от продажи химических веществ конечным потребителям: при этом большая прибыль может быть получена от продажи большего количества продукции. Поставщики заинтересованы увеличивать количество продаваемых химических веществ, и это де-факто создает проблему - «стимулирование» неэффективного использования химических веществ.

Бизнес модель Химического лизинга, в соответствии с которой потребители *платят только за услуги/ эффекты*, оказываемые с использованием химического вещества (например, объем очищенной воды, число окрашенных изделий, метры очищенных труб и т.д.), а не за количество потребленного вещества, позволяет решить указанную проблему. За счет того, что в новой модели отношений между поставщиком и потребителем размер оплаты не связан напрямую с объемом потребления химических веществ, использование химических веществ на предприятии переходит на новый, качественный уровень. Это приводит к появлению дополнительных экономических стимулов и возможностей сотрудничества. В результате, преимущество получают все участники цепочки: поставщики химических веществ и предприятия-потребители, общество и окружающая среда.

Химический лизинг приносит выгоду, как поставщикам, так и потребителям за счет:

- снижения количества используемых химических веществ с появлением дополнительных услуг и соглашений обеспечивает экономическую выгоду для всех партнеров
- оптимизации производства и снижения нагрузки на окружающую среду
- стимулирования дополнительных циклов, регенерации и снижения производственных отходов
- развития делового сотрудничества, установления долгосрочных партнерских взаимоотношений
- повышения конкурентоспособности партнеров, непрерывного обучения персонала и усовершенствования процессов
- эффективной передачи технологий
- обмена ноу-хау

Організація Об'єднаних Націй з промислового розвитку (UNIDO)

Центр ресурсоефективного та чистого виробництва

Захід проводиться за підтримки Вінницької обласної державної адміністрації та Вінницької міської ради

КОНФЕРЕНЦІЯ

ДОСВІД ВПРОВАДЖЕННЯ МЕТОДОЛОГІЇ РЕСУРСОЕФЕКТИВНОГО ТА БІЛЬШ ЧИСТОГО ВИРОБНИЦТВА НА ПІДПРИЄМСТВАХ ВІННИЦЬКОГО РЕГІОНУ

3 липня 2013 року
м.Вінниця

Центр створено в рамках проекту UNIDO в Україні з ресурсоефективного та більш чистого виробництва
Донори проекту - Швейцарська Конфедерація та Республіка Австрія

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

ИНИЦИАТИВА ЮНИДО В ОБЛАСТИ «ЗЕЛЕНОЙ» ПРОМЫШЛЕННОСТИ
по устойчивому промышленному развитию

ОРГАНИЗАЦИЯ ОБЪЕДИНЕННЫХ НАЦИЙ ПО ПРОМЫШЛЕННОМУ РАЗВИТИЮ

Green Industry

ЦЕНТР РЕСУРСОЕФЕКТИВНОГО
ТА ЧИСТОГО ВИРОБНИЦТВА

RESOURCE EFFICIENT AND
CLEANER PRODUCTION CENTRE

www.recpc.kpi.ua

Environmental Management System and Green Finance at ProCredit

Ensuring that ProCredit support economic development that is as environmentally and socially sustainable as possible is a central component of ProCredit's development mission. The environment and environmental awareness are integral to bank identity. Since late 2011, the bank has therefore been in the process of developing and implementing a comprehensive environmental management concept to reduce the direct and indirect environmental impact of the ProCredit institutions.

The ProCredit group has issued its "Group Guidelines for Environmental Management"
aimed at implementing an all-inclusive and sustainable system for managing environmentally-related activities. The
main pillars of the concept are:

• Pillar 1: Internal Environmental Management System (IEMS)
• Pillar 2: Management of environmental risks in lending
• Pillar 3: Expansion of the green loan portfolio

Pillar 3 is concerned with expanding bank green loan portfolio. During 2012, this involved competent staff applying a carefully developed and credible approach to green lending.
A ProCredit green loan is not a stand-alone lending product with subsidy and/or grant elements, as is often the case with other banks in our markets. Rather, for ProCredit the term "green loan" is used to distinguish certain lending solutions from others based solely on the purpose for which the funds will be used.

The ProCredit group is pioneering an approach where green loans can be used to finance investments undertaken for the following purposes:

• Energy Efficiency (EE) investments – use less energy or resources to achieve the same or an increased level of output, where required energy savings are at least 20%.
• Renewable Energy (RE) investments – harness natural resources that are inexhaustible within human time scales or that are replenished much more quickly than they are depleted.
• Environmentally friendly investments (Gr) – have a direct positive effect on the environment, even though there may not always be measurable energy savings or reductions in greenhouse gas emissions (e.g. organic agriculture, water and soil protection, licensing and certification, consulting and planning services to reduce environmental pollution, etc.).

The volume of outstanding green loans increased by 35% to EUR 78.2 million compared to 2011. The average outstanding amount of the green loans in the portfolio was slightly below EUR 8,000. In 2012, ProCredit banks in Bosnia and Herzegovina, Georgia and Ecuador launched green loans for business and private clients.
Significant progress was made during the second half of 2012 with regard to the development of group-wide definitions of EE/RE and green lending, as well as to the associated reporting framework. Centrally approved short lists and long lists of eligible standard and non-standard green investments were finalised and will be adapted to each institution's individual situation. These lists state the criteria an investment must meet in order to qualify as an energy efficient measure. Simple to understand and easy to use, these lists and guidelines aim to help staff present, identify and promote the investments in energy efficiency, renewable energy and environmentally friendly measures to our clients.

Annex 11

Project "Eco-Industrial Parks in Emerging and Developing Countries: achievements, good practices and lessons learned"

Background

Industrial zones have enabled the accelerated growth of the manufacturing and associated productive sectors, creating jobs at large scale, and indeed driven poverty eradication. Unfortunately in past decades environmental protection was only paid lip service, resulting in significant environmental damage and occupation and community health hazards. The challenge viz-a-viz achieving the aims and objectives of a green economy is to turn industrial parks into kernels for green industry (i.e. industries that are resource productive, minimized waste and emission generation and are robust in the face of the likely impacts caused by climate change).

The past decennium has witnessed a mushrooming of eco-industrial parks, in particular in Asian emerging markets, yet not limited thereto. Whilst remarkable environment, resource conservation and competitiveness gains have been reported from some eco-industrial parks, it is equally clear that others did not succeed (or perhaps not even made an effort) to go beyond green-washing for marketing and recruitment of companies.

Moreover eco-industrial parks mean different things to different organizations and governments. The notion of a geographically confined area is common, yet the size thereof could vary from a few to several thousands of square kilometers, with potentially huge differences in numbers of enterprises located therein (from dozen or so to several thousands). The park can be loosely organized or more tightly knit together, with common economic and policy privileges (typical for free trade or special economic zones or otherwise). Some environmental benefit is also aimed for, yet there are different, but complementary interpretations for the type of environmental benefit targeted for, most commonly:

1. A cluster of producers of environmental goods – most visible are clusters of renewable energy developers/manufacturers (e.g. PV, wind), yet also environmental innovation clusters with more diversified sets of environmental technology companies exist.

2. A cluster of environmental services providers – enterprises that have co-located to deliver integrated sets of environmental services, most typical 3R services for recovery, recycling and safe disposal of waste streams (solid, liquid). Similarly clusters are developing for e.g. bio-fuel production.

3. A diversified manufacturing zone where companies have achieved high levels of coordination of their individual environment initiatives (and typically also emergency and occupational health and safety), and where, on average, plant-level environmental and resource productivity standards are higher than common for the country and/or sector.

4. A diversified manufacturing zone where waste (solid, liquid and gaseous) from multiple enterprises is treated collectively for reuse by other enterprises and/or where enterprises jointly produce one common input for multiple enterprises (e.g. compressed air, steam, etc.)

The first two interpretations fit the agenda of creating green industries (i.e. achieving the industrial supply of a diversified set of environmental goods and services), whereas the latter two fit the agenda for greening of industries (through waste and emission reduction in individual plants and through collective facilities).

From the perspective of scaling-up and mainstreaming Resource Efficient and Cleaner Production (RECP) the latter two interpretations are most relevant. Industrial zones provide a platform for large scale implementation of RECP methods and techniques in multiple (most or - preferably - even all) enterprises in the industrial zone, involving business membership organizations (BMOs) and using group dynamics and peer learning. This would lead to large scale achievement of individual or plant level resource efficiency and superior environmental performance, hence the third form highlighted above. As these individual efficiency options are utilized at plant level, the remaining waste streams

can be collectively reprocessed and recovered, leading to collective resource efficiency, hence the fourth form listed above.
Several comparative assessments have been completed (1) on eco-industrial parks, yet primarily based on experiences in industrialized countries. Whilst successes, in terms of environmental benefits, costs savings and technology adaptation are reported for selected eco-industrial parks in emerging and developing countries, insight into the driving factors behind their development is lacking. Therefore an in-depth assessment is proposed for a cross-section of eco-industrial parks, to gain insight into industrial, innovation and environmental policy, business models, finance, capacity building and related driving factors. This in turn could guide effective future initiatives to bolster the socio-economic, environment and climate potential of eco-industrial parks.

In the framework of the Project following tasks have been fulfilled:
1. The Proposal for providing services relating to the documentation and review national experiences with development, implementation and management of eco-industrial parks in Ukraine in the framework of the Project "Eco-Industrial Parks in Emerging and Developing Countries: achievements, good practices and lessons learned" was developed and sent to the UNIDO on September, 27th 2013.

2. Several meetings were conducted in Vinnitsa region.
- 07.11.2013 a meeting was organized with Vinnitsa Regional Administration level. Participants: Igor Krevckiy (First Deputy of Region's Parliament), 2 representatives of Oblast Administration, RECPC representatives: Valerie Pashuk, Valerie Rehshik, Giustino Rampa.

Subject of the meeting was ECO-Industrial Park development and creation in the region.

The local Government is initiating steps for creating an ECO-PARK. The project is at the very beginning. Things could move fast, in line with the Administration plans to attract investors and create jobs.
RECPC position is as follows: UNIDO competences and experiences are quite unique and not known to General Contractors dealing more with the industrial organization of PARK. An ECO-PARK offer clear advantages to the Administration and to potential industries as common procedures can be applied to all on the same place. This would not be as simple if the same industries would be scattered around the city in different places.

It is however important to create an efficient ECO-PARK management organization willing to be flexible and avoiding bureaucratic procedures.

To summarize discussion the **tentative action plan** in Vinnitsa region was adopted:
a. Visit the site with the objective to develop a good feeling with the situation concerning the feasibility of the project. Location, access road, rivers, water, vegetation, residences, necessary development work etc.
b. Inform UNIDO about the meeting, discussing about opportunities/necessity of resources to handle such projects.
c. Prepare the presentation under the guidance of UNIDO.
d. Submit possible date for the meeting with the administration.

3. On the sidelines of the International Conference "Green Resource Efficient Economy: New Challenges And Opportunities For Economic Growth In Ukraine" the issue of potential analysis for elaboration EIP in Gorlovka town (Donetsk region) discussed with the Mayor of Gorlovka, Evgeniy Klep. The Mayor showed interest for the project on EIP. After the Conference, on November, 26th the Centre prepared and sent a covering letter to the Mayor with proposal to discuss the possibilities for establishing EIP in Gorlovka once again. The letter is below.

ЦЕНТР РЕСУРСОЕФЕКТИВНОГО ТА ЧИСТОГО ВИРОБНИЦТВА

Київська міська інноваційна галузева організація роботодавців

26 листопада 2013 року
№155

Міському голові
Горлівської міської ради
Клепу Є. В.

Шановний Євгене Вікторовичу!

Дозвольте висловити Вам свою повагу та надати коротку інформацію про проект ЮНІДО «Еко-індустріальні парки в країнах, що розвиваються, та з перехідними економіками: досягнення, передовий досвід та накопичені знання», який реалізується у 14 країнах світу.

Проект передбачає детальне вивчення передумов створення та дослідження кола активних учасників еко-індустріальних парків для розуміння промислової, інноваційної та екологічної політики, бізнес-моделей, фінансування, реалізації їх потенціалу та стимулюючих факторів, пов'язаних з ними. Таке поглиблене дослідження також має на меті вивчення та обмін досвідом створення та функціонування еко-індустріальних парків у країнах, що розвиваються, а також перетворення рушійних факторів на інструменти реалізації.

Еко-індустріальні парки (ЕІП) є промисловими парками, де компанії співпрацюють з метою досягнення максимальної фінансової вигоди разом зі зменшенням їх впливу на навколишнє середовище. Одним із прикладів реалізації ЕІП є модель господарської взаємодії підприємств, коли відходи від одного виробництва використовуються в якості ресурсу для іншого. Аналогічний підхід характерний промисловим кластерам територіального типу.

Проект ініційований відділом більш чистого та сталого виробництва ЮНІДО, координатор – Рене Ван Беркель (r.vanberkel@unido.org). Якщо вас зацікавила дана інформація, то детальніше ознайомитися про ЕІП можна за адресою: http://recpc.kpi.ua/sites/default/files/sites/default/files/van%20Berkel%20MakingIt_issue.pdf та з презентації і її перекладу (у вкладенні). Після ознайомлення з інформацією можна повернутися до питання обговорення подальших кроків щодо аналізу можливостей реалізації ЕІП у м. Горлівка.

З великою повагою,

Директор Центру І.Л. Шилович

www.recpc.kpi.ua | Проспект Перемоги 37, корпус 6, офіс 3, м.Київ, Україна, 03056 | Тел: +380 44 406 80 62 | Ел.пошта: ncpc@ukr.net

Expectations on the proposals

1. Currently, the entities located within the proposed Park do not have joint action regarding protection of natural environment within the scope of the RECP (resource efficient and clean production).
2. Myronivsky Hliboproduct PJSC independently looks for new energy saving technologies that can be implemented in Ladyzhyn. The goal of this entity is a complete environmental safety and pure organic agriculture. This program is supported by IFC.
3. From UNIDO we can expect implementation of RECP at the potential entities of the Park and assistance in learning the experience of similar projects in Europe.

Lesson learnt

1. Ecoparks issue raised additionally in the second half of this year. This proposal was studied in different regions of Ukraine, including those where the project was implemented. It's an absolutely new issue for Ukraine, we haven't find any similar facility so far. Industrial parks on the basis of which ecoparks are created in some countries, are at the initial stage in this country.
2. The existing information about the EIP project is not enough for the successful introduction of the draft of the EIP project in the municipalities. An awareness raising and information dissemination of the project will improve if it will possible to demonstrate an additional methodological information as well as success stories from other countries in the municipality meetings.

To:
United Nations Industrial Development Organization (UNIDO)
PTC/EMP/CPU : **(Attn. René VAN BERKEL)**
Wagramer Strasse 5, P.O Box 300, A-1400 Vienna, Austria
r.vanberkel@unido.org

Quotation for providing services relating to the documentation and review national experiences with development, implementation and management of eco-industrial parks in Ukraine in the framework of Project "Eco-Industrial Parks in Emerging and Developing Countries: achievements, good practices and lessons learned"

27th September, 2013 Kiev, Ukraine

Background

In the framework of the global Cleaner Production Programme, the United Nations Industrial Development Organization (UNIDO) together with the Ministry of Economic Development and Trade of Ukraine initiated the National Cleaner Production Programme in Ukraine for improving the competitiveness and environmental performance of the industrial sector and promoting sustained social advance in a way compatible with environmental protection.

The Programme was established in 2007 at the National Technical University of Ukraine - Kiev Polytechnic Institute (NTUU KPI). The Ukrainian Cleaner Production Centre (CPC) was established in June 2009. It is hosted by NTUU KPI and located at its premises.

On 28 November 2011, the project "Promoting the adaptation and adoption of RECP (Resource Efficient and Cleaner Production) through the establishment and operation of a Cleaner Production Centre (CPC) in Ukraine" was officially signed by UNIDO and the Government of Ukraine. It started in the second half of 2012 and the level of operations has increased significantly over the last half a year.

On 29 January 2013, the official inauguration of the project took place at NTUU KPI and in June 2013, the Centre ("Resource-Efficient and Cleaner Production Centre", further referred as RECPC) obtained legal status.

1. Institutional profile

The Cleaner Production Centre started in 2007 within the framework of the UNIDO program of National Cleaner Production Centers.

2007-2010 CPC activities were supported by the government of the Republic of Slovenia through UNIDO as executing agency. The Centre is hosted by the NTUU KPI and located at its premises. Results of this period are reflected in the Table 1 and Table 2 (Annex 1).

During the past five years (2007-2011), existing RECPC implemented the CP pilot projects based on UNIDO CP Programme in different companies from different sectors and regions.

The CP Programme was split into two major implementation cycles:

- Cycle 1: the period from 2007 until the end of 2008;
- Cycle II: the period from 2009 until the end of 2010.

Overview of the achieved results during Cycle I (2007-2008)

Location	Kyiv region
Sectors	- Food processing - Construction materials - Metal processing - Agro processing
Trained in CP	- 13 experts
Completed IPAs	- 7
Achieved results (savings and benefits)	Annual savings, euro: ~ 250,000 per year Reducing CO2 emissions: ~ 2000 tons/year

Overview of the achieved results during Cycle II (2009-2010)

Location	Vinnytsia	Zaporizhya
Sectors	- Food processing - Construction materials - Metal processing	- Metallurgic - Construction materials - Metal processing
Trained in CP	- 10 experts	- 9 experts
Completed IPAs	- 6	- 4
Achieved results (savings and benefits)	Annual savings, euro: ~ 8,4 mio; Reduction of electricity consumption: 1373 MWh; Reduction of water consumption: 91200 m3; Reduction of natural gas consumption: ~ 15,4 mio m3; Reducing CO2 emissions: 24259 tons	Annual savings, euro: 723940; Reduction of electricity consumption: 1007 MWh; Reduction of water consumption: 1800 m3 Reduction of natural gas consumption: ~ 1,5 mio m3 Reducing CO2 emissions: 10145 tons

During 2011, RECPC staff and team of trained NEs visited all companies in Vinnitsia, and Zaporizhya with the main purpose of monitoring achieved results after implementation of recommended technical decisions. The monitoring process showed that companies implemented a lot of recommended options and already achieved app. 10% of planned savings during the half a year after the finalization of the project (total savings from all companies was around 707,200 €; investments 860,120 €; reduced CO2 emissions by 47,945 tons).

Organization of the Centre and core stakeholders

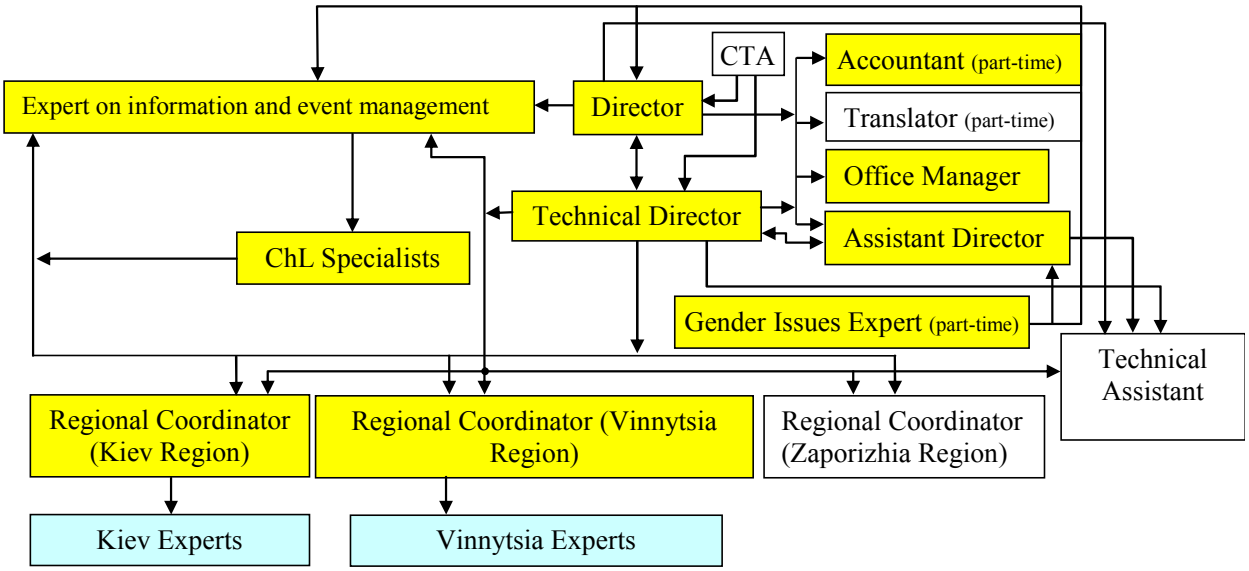
The Centre is hosted by the National Technical University of Ukraine - Kiev Polytechnic Institute, the leading technical university, which puts its scientific and business network at the RECPC's disposal, thus facilitating cooperation and information exchange with governmental, financial, scientific and business institutions

The main partners of the Centre are NTUU KPI (http://www.inter.kpi.ua/), the Science Park "Kyivska Polytechnika" (http://www.spark.kpi.ua/) and the Ukrainian League of Industrialists and Entrepreneurs (http://www.uspp.org.ua/).

Legal status of the RECPC

The RECPC was registered as an independent legal entity in June 2013. At the same time, a bank account was opened and the Centre was registered in the databases of the relevant state regulatory authorities. Once these procedures had been completed, the Centre could sign a subcontract with UNIDO.

The current organizational structure is presented below:



FINANCIAL IDENTIFICATION:
Kyiv City Sectoral Innovative Organization of Employers
"Centre of Resource Efficiency & Cleaner Production"
EDRPOU Code: 38792148
Adress:
Peremogy Av., building 6/37
Kiev, 03056, Ukraine
Bank account:
Name of Bank: THE JOINT STOCK COMPANY "THE STATE EXPORT-IMPORT BANK OF UKRAINE"
Account number: 26007010064359 / 978
S.W.I.F.T.: EXBS UA UX
Address: 127, Gorkogo Str., Kyiv, 03150, Ukraine

2. Service Delivery Proposal
"RESEARCH OF POTENTIALS FOR ESTABLISHMENT OF ECO-INDUSTRIAL PARK IN THE CITY OF LADYZHYN, VINNYTSIA REGION"

CONCEPT PROPOSAL (Implementation is planning since 2014)

1. The focus of Ladyzhyn Eco-Industrial Park

Ladyzhin Eco-Industrial Park (**EIP**) can be formed as a complex of food production (poultry) using bioconversion technologies within closed looped production cycles to avoid the negative impact on the environment. The Park could be considered as a pilot study to disseminate gained experience to other areas in the Vinnytsia region.

2. Location of the Park

City of Ladyzhyn and nearby area, Trostianets district, Vinnytsia region.

3. Potential founders of the Park

Myronivsky Hliboproduct PJSC[1] (grain mill factory), Enzyme SC[2], Ferment PJSC, Zavod Sylikatnoyi Tsehly PJSC (building construction, bricks), Biolik SC, Ladyzhyn thermoelectric power station.

[1] PJSC – Public Joint Stock Company
[2] SC – State Company

4. Economic and environmental characteristics and conditions

Industrial complex Myronivsky Hliboproduct PJSC (hereinafter referred to as the "**Industrial Complex**") is currently establishing in the city of Ladyzhyn. It will produce poultry, compound feeds and grain harvesting. ***Ladyzhyn Chicken Farm*** consists of 26 production units that provide of growing 33.8 million broiler chickens simultaneously, one incubator with production rate of 300-350 million eggs, and a slaughterhouse.

The capacity is 400 thousand tons of poultry per year.

Simultaneously, the Industrial Complex will create more than 800 thousand tons of various waste and poultry feces per year.

To keep ***Ladyzhyn Chicken Farm*** full of compound feeds, a compound factory and oil-press plant should be built within the Industrial Complex.

They will produce 160 tons of compound feeds per hour and process up to 2 thousand tons of sunflower per day respectively. 2 elevators will be built to store sunflower and corn. It is planned to build a factory to manufacture ready to consume meat products.

Zerno Product LLC (Vinnytsia region) will supply cereal grains to the Industrial Complex.

In total, the Industrial Complex will use 4000 tons of water daily.

Contamination of water with bird feces is a threat that must be eliminated. 5 thousand ponds and the population of 230 thousand people can be contaminated. In order to save water resources, it is necessary to use closed circuit water circulation.

Microbiological complex of ***Enzyme SC, Ferment PJSC and Biolik SC*** can provide:

(i) Production of bioproducts for growing broiler chicken;
(ii) Recycling waste of broiler production, and;
(iii) Water purification using bioconversion technologies.

5. Potential technological chains for creating green closed loop production systems, and production with the saving of energy, resources and significantly reduction of the negative impact on the environment.

Enterprises of the Park could be organized in 5groups connected between each other in production chains.

1. Production of meat products. Production of grain – production of compound feeds - growing broilers chickens - production of meat products.
2. Recycling of waste and bird feces into heat, electricity and biofertilizers. Bird feces - water from birdhouse – waste of compound feeds production-waste from production of meat and biogas- thermal power biofertilizers - carbon dioxide.
3. Processing bird feces into biofertilizers.
   Bird feces - water from birdhouse - biofertilizers - carbon dioxide.
4. Micro biological production (cultivation of biological objects) of biological products (bacteria
   and fungi) for (i) growing cereal grains, (ii) support work of bioreactors, and (iii) purification of water.
5. System of biological water purification within the territory of the Industrial Complex.

6. Economic and social environment of the Eco-Park.

Ladyzhyn power station with 6 power blocks has power output of 1 million 800 thousand kW. Area of this station is 428 ha. Since 1964, combined with Ladyzhyn thermal power station a local hydroelectric power station produces 7500 kW.

Microbiological Industry

Microbiological industry: Enzyme SC, Biolik PJSC, Ferment PJSC.

Enzyme SC specializes in production of microbiological synthesis.

Capacity - 4652.9 tons of enzymes per year. There is a research center within Enzyme SC.

Products of Enzyme EC are used in feed production for agriculture, alcohol industry and medicine.

Biolik OJSC specializes in making salves, tinctures, health care products and biovit.

Health care production amounts 50-55% (250-300 thousand deca litres per year) of the whole production amount.

Ladyzhyn Zavod Extra SC produces: (i) ethanol - highest purification rectificate, (ii) ethanol (96%, 70%) with design capacity – 1.5 thousand deca litres per day.

Building complex

Zavod Sylikatnoyi Tsehly PJSC has a production rate of 102 million of bricks per year.

Buddetal LLC produces building materials (concrete and wood products, paving tiles, metal-ceramic tiles, etc.) with capacity of 1 thousand m^2.

Ladyzhynskyi Zavod Zalizobetonnykh Konstruktsiy PrJSC[3] produces building materials and concrete structures for construction of electric power lines. Capacity - 28,000 m3 of concrete per year.

Enterprises of the district which can influence to establishment of eco-industrial park

Food industry is represented by six companies: JSC "Trostyanetsky meat processing plant", SC Trostyanetsky distillery, JSC "Trostyanetsky Dairy Plant", JSC "Podolski sugar refineries", JV[4] “Kapustiansky sugar plant”, Branch of Obodivskiy Sugar Plant of “Agroprominvest” Ltd., JV "Suntrade", which produced meat and meat products, sausages, sugar, alcohol, whole milk products, butter, casein, stored and processed grains.

Great influence may also have companies of nearby Tulchyn and Gaysinskyi districts.

Social situation

There are 40 thousand people (including city with population of 22 thousand) inhabiting nearby are of the Industrial Complex. Population has a big interest in environmental situation. In Ladyzhyn there is Urban Development Agency NGO.

7. Problems should be solved

1. At this time, the key element of the proposed Park is Myronivsky Hliboproduct PJSC. Its manufacturing facilities are scattered throughout the Vinnytsia region. Due to this, the Park could be located on a diverse area and urban ecological processes may extend beyond the area of direct production.

2. In the city of Ladyzhyn there is a thermal power station Zakhidenergo LLC. Emissions from this station consist 80% of all emissions from stationary sources (almost 50% of total emissions) in the Vinnytsia region. In 2009 thermal power station Zakhidenergo LLC generated 417.4 thousand tons of coal ash (4 hazard class). Dated 1 January 2010, there are 25,448.4 thousand tons of coal ashes accumulated in dumps.

3. Energy industry’s water consumption amounts 10% of the total consumption in the Vinnytsia region.

8. Expectations

Currently, the entities located within the proposed Park do not have joint action regarding protection of natural environment within the scope of the RECP (resource efficient and clean production).

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[3] PrJSC – Private Joint Stock company

[4] JV – joint venture

Myronivsky Hliboproduct PJSC independently looks for new energy saving technologies that can be implemented in Ladyzhyn . The goal of this entity is a complete environmental safety and pure organic agriculture. This program is supported by IFC.

9. Background of URECPC activity in EIP establishment

9.1. RECPC will provide CP approach in in-plant assessment for Ukrainian companies involved into the EIP development of creating technical and economic platform for future EIP entity.

9.2. RECPC will communicate with representatives and key persons in regional Administrations, enterprisers, stakeholders, Ministries (Economy, Environment) to facilitate the process of EIP established.

9.3. RECPC will develop relevant documents of feasibility study for EIP establishment.

9.4. RECPC will provide official issue to clarify policy and institutional aspects for establishing EIP in Ukraine. The title of issue: “In-depth analysis of potentials for establishing EIP in Ukraine”.

3. Project Personnel Proposal

Proposal for EIP project coordinator from the URECPC: **Valeriy Redchik** (regional coordinator of RECPC in Vinnitsa region).

1. Family name	First name	Middle name	Maiden name, if any
Redchik	Valerii	Mykolayovych	

2. Date of birth	3. Place of birth	4. Nationality at birth	5. Present nationality
Year 1947 Month 04 Day 01	Village Malyi Mytnyk, Khmilnytskyi rayon, Vinnytska oblast, Ukraine	Ukraine	Ukraine

6. Sex Mail	7. Marital status:	Single __	Separated _ _	Widow(er) __	Divorced __
		Married **X** __			

8. Permanent address	9. Present address	10. Office address
3 Shyrshova Str., Appt. 65, Vinnytsya, 21021 Ukraine		145 Khmelnytske highway
Telephone: :0432-68-82-18	Telephone:	Telephone:0432-50-51-78
Telefax:	Telefax:	Telefax:
E-mail:redoso@i.ua	E-mail:	E-mail: vinooor@ukr.net

Education: (see instruction 5)

Dates attended		Name and location of institution of learning	Academic degrees and certificates or diplomas obtained	Main field of study
From	To			
01.09. 1965	30.06. 1970	Kyiv State University named Taras Shevchenko, Faculty of Radiophysics, Kyiv, Ukraine	Diploma of MS of radiophysics, honor for science work and publications	Radiophysics
01.09. 1980	30.06 1982	Institute of Cybernetics, Post Graduate, Kyiv, Ukraine	Candidate minimum	Computer science
01.10 1982	30.06. 1984	Board for studying productive forces the Council of Ministers of the USSR, Kyiv, Ukraine	Candidate minimum	Management of science and scientific provision
01.10 2004	01.11. 2005	Strategic Planning School, USAID Project, Kyiv, Vinnytsya, Ukraine	Certified consultant	Strategic planning of region.

List any significant publications or papers: (see instruction 5)

Author of 64 publications. Selected publications are:

1. Interaction of laser radiation with yttrium iron garnet in parametric excitation of spin waves //

Letters in Journal of Experimental and Theoretical Physics, tome 11, edition. 12, http://www.jetpletters.ac.ru.
2. Modulation of laser yttrium ferrite garnet. Bulletin of Kyiv Taras Shevchenko University. Physics № .3 1970
3. Reliability of planning and development. Computers and science. SSR 1981. Tome 3
4. Actual Problems of collegial CAD / / Proceedings of conference on "Implementing CAD - a way of improving the quality of engineering work and development." - Belgrade, 1987. - S. 5.
5. Development of high-performance installation elektroproducing of raw sugar. Mat. 6 International konference.19-April 21, 1999. UDUHT HP 2000. p.128-130
6. Pulse elektroplazmoliz plant tissue: evaluation of energy efficiency Proceedings UDUHT. - 2001 - № 9 - P.21-23.
7. Prospects for economic and social development of Vinnitsa region. The materials of the International Conference MANAGEMENT AND MODELING IN ECONOMICS. March 18, 2002 Mr. VSPI. Vinnitsa.
8. Streams of scientific ideas in Vinnitsa region. Log. Regional economics and business administration. Number in March 2005
9. Problems of innovation development strategy Vinnitsa region. Log. Regional economics and business administration. Number in May 2009
10. Law "On the announcement natural areas Iampil Vinnytsia region resort of national importance"
11. The program is an alternative power system in Vinnitsa oblast for 2010-2015 .. DBU Southwest RCID. Vinnitsa. , 2009
12. Implementation Plan for Regional Development Strategy. Vinnytsia region for 2011-2013
13. The concept of "sustainable development of Ahrotehnoparku skirts." DBU Southwest RCID. Vinnitsa. , 2009
14. Draft strategy of innovative development Vinnytsia region. DBU Southwest RCID. Vinnitsa. , 2009
15. Khmelnik in the 21st century. The concept of sustainable development. Khmelnik 2010.

List special qualifications and skills confirmed by licenses held and membership in professional, civil, public or international societies or institutions relevant to your application; indicate the class of membership when appropriate:

Radiophysics - Diploma KSU in 1970
Engineer-radioman. military qualifications. in 1972
Economist qualification of Productive Forces of 1985
Expert of strategic planning project USAID 2006

PROFESSIONAL EXPERIENCE

A.	June 2007 - September 2012 Employer (Name and Address) and type of business: Vinnytsya regional department of Ukrainian League of Entrepreneurs Vice-President Title of post: Vinnytsya. Nature of duties: Management of innovations. Management of rayon organization Number and kind of employees supervised: 29 (management)
B.	April 2006 – May 2007 Employer (Name and Address) and type of business: Verkhovna Rada of Ukraine Assistant – consultant of Peoples Deputy Title of post: Kyiv Nature of duties: Drafted Laws of Ukraine on alternative energy, organic farming, resorts Number and kind of employees supervised: 3 (experts)
C.	July 2000 - April 2006 Employer (Name and Address) and type of business: Vinnytsya oblast State Administration Head of unit of investment policy Title of post: Vinnytsya. Nature of duties: Development of strategy and investment policy of oblast

	Number and kind of employees supervised: 31 (management)

PROFESSIONAL EXPERIENCE

D.	From: May 1996 To: - July 2000 Employer (Name and Address) and type of business: Vinnitsa Regional Association of Industrialists and Entrepreneurs Executive Director ..:. Title of post: Vinnitsa. Nature of duties: Managing Business Projects Association Number and kind of employees supervised: 20 (Management)
E.	From: April 1990 To: May -1996 Employer (Name and Address) and type of business: Ukrainian economic association «Gran» Technical director Title of post: Vinnytsya Nature of duties: Managing the development of electronic technology, production management information technology. Number and kind of employees supervised: 110. Research and production staff.
F.	From: August 1986 To: - March 1990 Employer (Name and Address) and type of business: Central Research Institute "Infrakon." Head Nakov technical branch laboratory. Title of post: Vinnitsa Nature of duties: Strategic planning for the field of information technology. Editor of the scientific publication of the Institute: "Scientific news". Number and kind of employees supervised: 15 Scientific and technical staff.

G.	From: January 1982 To: - July 1986 Employer (Name and Address) and type of business: Central Design Bureau for Information Technology Head of Scientific-Technical Laboratory: Title of post: Vinnitsa Nature of duties: Project Management Development of information technology and electronics. Number and kind of employees supervised: 12. Engineering and economic experts.
H.	From: January 1978 To: – December 1982 Employer (Name and Address) and type of business: Central Design Bureau for Information Technology Senior Engineer scientific and technical department. Title of post:. Vinnitsa Nature of duties: Prediction of the development of computer and office equipment. Management research work. Number and kind of employees supervised: 5. scientific workers. engineers
I.	From: January 1978 To: – December 1978 Employer (Name and Address) and type of business: Central Design Bureau for Information Technology Senior engineer of reliability. Management engineering development. Title of post: Vinnitsa Nature of duties:. reliability research on information technology. Number and kind of employees supervised: 5. Radio engineers
J.	From July 1970: To: - September 1972 Employer (Name and Address) and type of business: Head radar station. Title of post: Lviv Nature of duties: Managing technical operation Number and kind of employees supervised: 10. Operators radar

Membership in Organizations:

1. Member of the editorial board of the scientific and practical journal "REGIONAL BUSINESS ECONOMICS AND MANAGEMENT", Certificate of registration: Series KB № 9838 from 17.05.2005r. Magazine listed to publications Supreme Attestation Commission of Ukraine. (Annex to the Resolution of the Presidium of SCC of Ukraine 04.07.2006r. № 1-05/7, list number 18)

2. Member of the Public Council of Entrepreneurs under the Regional State Administration.
3. Deputy Chairman of the Vinnytsia Oblast employers organization "Progress".
4. Member of the Council for Strategy Development of city of Khmilnyk.

Proposal for EIP project technical expert from the URECPC: **Tetyana Kniazkova**

CURRICULUM VITAE

Personal Details

Title	Dr.
Family name	Knyazkova
First name	Tetyana
Gender	female
Date of birth	May 12, 1940
Nationality	Ukraine

Contact Details

Home address	34/1 Grushevsky str., apart. 48, Kiev 01021, Ukraine
Telephone 1 (home)	38 044 2533779.
Telephone 2 (mobile)	38 066 4519673
E-mail	t_knyazkova@mail.ru

Current position

Retired, program coordinator of the public organization "Centre of Nutrients Problems" under the Ukrainian Chemical Society

Education

Kiev Institute of Civil Engineers, 1957-1962 (water supply and sewerage)
Kiev Institute of Civil Engineers, post-graduate course (water treatment), 1964-1968
Ph.D. in Technology of Inorganic Matters (Water), 1971
Senior Scientific Researcher (academic rank), 1976
International Training Program on Ecological Alternatives in Sanitation (Sweden-Ukraine), 2007-2008

Linguistic Skills

Russian - native speaker
Ukrainian - fluent
English - good

Special research duties in the national and international context

1988-1991	Scientific Secretary of the Academic Council on Theory and Technology of Water Treatment, Ukrainian Academy of Sciences
2000, March-April	Expert-evaluator in the EC research program "Environment and Sustainable Development" – Key Action 1 "Sustainable Management and Quality of Water" (European Commission, Brussels)
2001-2003	Expert-evaluator in National programs of State Foundation for Fundamental Researches (Water technologies and management)
2007-2008	Head of international teams in ITP "Ecological Alternatives in Sanitation"
2008- 2009	Member of working group on organization of the European Workshop (EUW- 2009) for master students
2012, May-June	Member of the working group on preparation of the draft Law of Ukraine

"About shortening and banning the use of phosphorus-containing detergents in Ukraine" (The VR Committee of Ecological Policy and National Ecological Council of Ukraine)

2012- to-date Member of the initiative group and program coordinator in the Centre of Nutrients Problems under the Ukrainian Chemical Society

Scientific interests and experience

Water and sanitation, water and waste management, water treatment (especially membrane technologies). Implementation of new water treatment technologies at enterprises of textile, chemical, and pulp and paper industries. Sustainable solutions for waste water treatment plants.

Pedagogical experience

Teaching of the disciplines (including English-speaking groups): strategy of sustainable development, general ecology, landscape ecology, environmental monitoring, water treatment technologies, water supply and sewerage, ecological culture and ethics.

Employment History

2002- 2012 National Agricultural University of Ukraine (since January.2009 – National University of Life and Environmental Sciences of Ukraine), associate Professor of General Ecology Department

2006-2008 National Aviation University, associate professor of Ecology Department (pluralistically)

1976-2001 Institute of Colloid and Water Chemistry, National Academy of Sciences of Ukraine (ICWC NAS of Ukr.), senior scientist, head of research group (supernumerary laboratory)

1968-1976 ICWC NAS of Ukr., senior engineer, junior researcher

Publications

Over 100 scientific papers, 3 monographs, 3 textbooks, 6 brochures, 5 patents

Selected publications:

1. Knyazkova T.V., Yakovleva V.A. The potential of Ukrainian water industry for phosphorus recycling// Proceedings of International Conference "The Targets of Sustainable Development for Ukraine", June 18-19, 2013, Kyiv, Ukraine, p.241-246.
2. Knyazkova T.V. The problem of phosphorus as a critical world resource and a factor of global sustainability // Proceedings of International Conference " Green Economics: The Prospects of Implementation in Ukraine", April 24-25, 2012, Kyiv, Ukraine, p.414-419.
3. The Prospects of Fundamental and Applied Researches in the Field of Physics, Chemistry and Biology of Water. Chapter 1. Klimenko N.A, Savchina L.A., Kozyatnik I. P., Knyazkova T.V. "Natural organic substances in sources of water supply and their role in the formation of drinking water quality" (Ed.: V.V.Goncharuk), "Haukova dumka", Kyiv, 2011. –497 p .(in Russian)
4. Melnichuk M.D., Bogolyubov V. M., Degodyuk E.G., Knyazkova T.V et.al. Surface Run-off Management in Agricultural Areas and Improvement of Monitoring System in Small Rivers Basins. –Kyiv: NAUU, 2007. – 58 p. (in Ukrainian)
5. Prylypko V.A., Knyazkova T.V. The role of water-related radiation-risk factors in formation of public health// Progress and Prospects on Water; WWW-2007 Abstract Vol., SIWI, p.88-89
6. Bogolyubov V.M., Knyazkova T.V., Solomenko L I., Rozputny M.V. Ecology. –Kyiv: NAUU, 2005. – 156 p.(Textbook, in Ukrainian)
7. Lavrentovich Y.I., Knyazkova T.V., Pidlisniuk V.V. New nanostructured materials as a

tool for destruction of hazardous impurities in water// Proceedings of CERECO'2003, April 28-30, 2003, Miskolc, Hungary, p.113-119
8. Knyazkova T.V., Zhurayev O.Z. Dynamic polymer layers on membranes as antifoulants in membrane filtration// In: S.Barany (Ed.), Role of Interfaces in Environmental Protection. -Kluwer Academic Publishers, 2003, p. 181-189
9. Zapolsky A.K., Meshkova-Klimenko N.A., Astrelin I.M., Gvozdyak P.I., Knyazkova T.V. Physico-Chemical Bases of Wastewater Treatment Technology. –Kyiv: Libra, 2000. -552 p. (in Ukrainian)
10. Knyazkova T.V., Kavitskaya A.A. Improved performance of reverse osmosis with dynamic layers onto membranes… // Desalination, 2000, v.132, p. 281-286 .
11. Knyazkova T.V., Majnarovich A.A. Recognition of membrane fouling: testing of theoretical approaches…//Desalination,1999, v.126, p. 163-169.
12.. Knyazkova T.V. Immobilization of polymers on cellulose acetate membranes // Catalysis Today, 1995, v.25, p. 255-262
13. Knyazkova T.V. The role of pore plugging in membrane filtration of compact polymer dilute solutions // In:E.F.Vansant (Ed.), Separation Technology. - Elsevier Sci. B.V., 1994, p 599-615
14. Kulsky L.A., Knyazkova T.V., Kavitskaya A.A., Markova N.P. Membrane Microfiltration in Water Treatment. –Kiev: UkrNIINTI, 1987. -47 p. (In Russian)
15. Kulsky L.A., Knyazkova T.V., Klimenko N.A., et. al. The Prospects for Industrial Water Membrane Purification of Surfactants and Dyes. – Kiev: UkrNIINTI, 1986. -49 p. (In Russin)
16.. Kulsky L.A., Knyazkova T.V., Semionov V.P., Pashelko G.M. Treatment of Liquor-Containing Waters of Pulp and Paper Industry Using Dynamic Membranes. –Kiev: UkrNIINTI , 1983. -55 p. (In Russian)
15.. Kulsky L.A., Grebeniuk V.D., Koposov V.N., Knyazkova T.V., Kucheruk D.D. Desalination of Water. – Kiev: Naukova Dumka, 1980. -89 p. (In Russian)
16.. Kulsky L.A., Cheptsov A.S., Knyazkova T.V., Kucheruk D.D. New Methods of Water Desalination. Kiev: Naukova Dumka, 1974. -190 p. (In Russian)

4. Financial Proposal

Budget for 2 months: 10 000 Euro

The cost allocation is presented below:

Cost item	%
1. Salary	40
2. In-plant assessments	20
3. Feasibility study	10
4. Policy and institutional in-depth analysis for establishing EIP in Ukraine	10
5. Organization of workshops, awareness raising seminars, trainings and meetings with representatives and key persons in regional Administrations, enterprisers, stakeholders, Ministries (Economy, Environment)	10
6. Local transportation	7
7. Misc.	3
Total:	100

5. *Project References*

3 examples of IPA at Ukrainian companies are presented below.

1. **"Steel rolling mill company" Zaporizzya (Terms of implementation 2010)**

General Information.

The enterprise started to work in 1916 in Zaporozhe. At present its name – “Steel rolling mill company”. Address: Ukraine, 69600 Zaporozhe, MSP-1086; tel.fax: +38(061)286-67-97; http://www.metizplant.com.; e-mail: vjj@ukr.net. Number of employees – 1200.

The enterprise specializes in producing of steel wire, steel wire covered by zinc, copper and aluminium wire (to 300000 tons/year), different kinds and functions of steel grid (about 5 millions m^2/year), porcelainized ware, steel tubes and nails.

The steel wire department was taken as the object of cleaner production implementation.

On the basis of IPA a heating technology line was chosen for detail investigation and improvement. A special temperature investigation were fulfilled

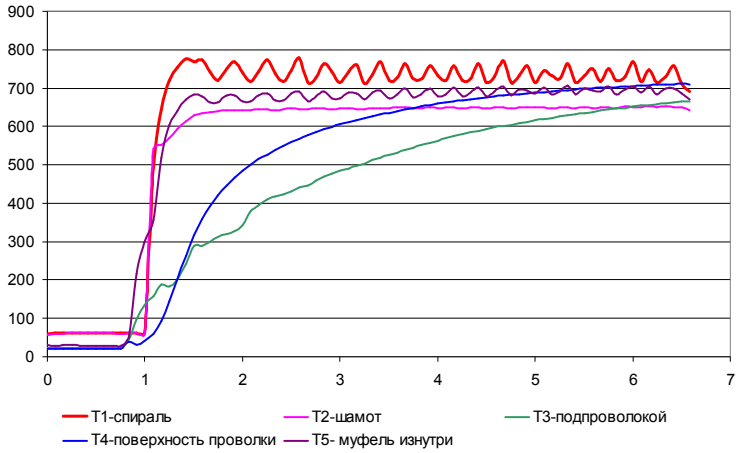


Fig.1 Temperatures in the owen depending on the time (h).

After measurements an energy balance was calculated.

Heat balance

Useful heat for wire heating $q_{пол}$ = 157,05 kWth

Energy consumption $W_{эл}$ = 800 kWth

Efficiency

$$E = \frac{q_{ïïë}}{W_{ýë}} = 0{,}196$$

Energy consumption items:

1. Heat for insulation heating up to the working temperature	107 kWth
2. Heat for screen heating up to the working temperature	46 kWth
3. Heat for metal support constructioin	32 kWth
4. Heat on fundament heating	67 kWth
5. Heat losses in surrounding including periodically stop and put into operation regimes	405 kWth
6. Heat for wire (useful heat)	157 kWth
Total:	814 kWth

Options

1. Replacement insulation to decrease accumulated heat
2. To optimize energy supply shedule to decrease the share of the accumulated heat

Benefit of this options could be estimated as 10…30 % of energy saving.

1. **Bell-type furnace construction upgrading (annealing without muffle)** may provide about 175 000 kW/year or ≈ 100 000 UAH/year. CP-Category – 3.
   Term of implementation -2013.
2. **Optimization of bell-type furnace operating conditions** allows to save about 300000 kW/year or ≈ 170 000 UAH/year. CP-Category (Extent of realisability) – 1. Look details in table 5-1 of the CP report. Term of implementation -2011.

2.“Zaporiz’ky ferroalloys plant” (ZFP) (Terms of implementation 2010 -2011) Plants profile: Alloys composes in electroarc cilns at high temperatures.(Manganese metal, Ferromanganese, Ferrosilicium, Ferromanganese Silicium, Calcium carbide (CaC2).

The CP-program was started in December 2009. Two futures national consultant provide this program at the plant. In-plant assessment was focused on: Main products; Raw materials; Material flow; Energy consumption; Water consumption; Energy balance; Waste and emissions; Technology processes.

Name of the company	PJSV "Ferro Alloy Plant"
Sector	Ferro and manganese alloys
Country	Ukraine
Tel/fax	+380-612 - 700 41 71
Web	http://www.zfz.com.ua
Number of employees	2700

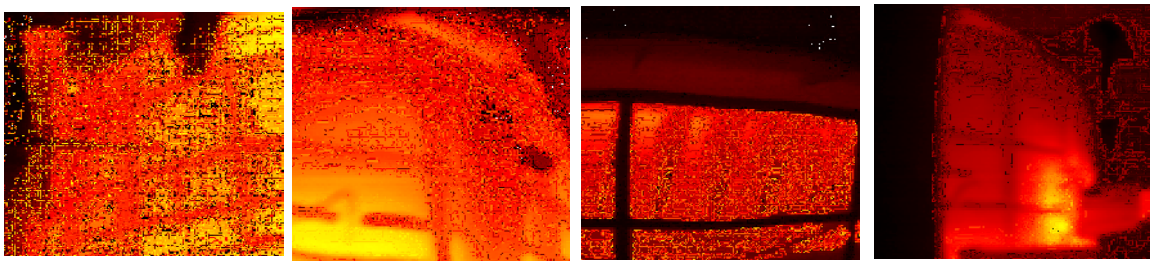
To obtain figures for material and energy balances an experimantal measurements were performed in July, 2010.

Cooling water flow rate measurements. Measurements were fulfilled with ultrasonic equipment from NTUU "KPI" laboratory of energy saving methods of investiagation.

Tempearture measurements. After measurements an energy balance was calculated.

Item	Index
Electrical power	10,6 MWt
Heat losses from outer surfaces	190 kWt
Losses with cooling water	912 kWt
Losses with ferroalloy gases	4,5 MWt
Useful used energy	4998 kWt

Temperature fields of outer surfaces.



Options and benefit

It was found at least two acceptable directions of improving technological process:

1. To minimize cooling water consumtion by calculation temperature drop.
   This option takes an opportunity to decrease a water consumption on 10 m^3/h. Total consumption of the cooling water is 112 m^3/h.
2. To dry a row materials before kiln charging. Now humidity of the row materials is 10…14 %. Decreasing this figure permits to save apprx. 5…6 % of energy consumption.

3. Vinnytsia flour-milling factory № 2 (Terms of implementation 2011 – 2012)

General Information. The main activities of the enterprise are the production of wheat flour, semolina and full-feed for livestock, fish, poultry (bulk, pellets and grit).

The company employs over 300 peoples.

The main technology line includes transportation lines, storage tanks, mills equipment. The main energy source for technology process is electricity that supplies drives for mills.

Capacity of the factory

Flour	61869,36 tons,	75 %;
Semolina	1262.64 tons,	1,5 %;
Bran for full-feed	16935 tons,	20.5 %;

Waste for sale	211 tons,	0.3 %;
By-product	2143 tons,	2,6 %.

CP options

CP option	Prognosed benefit
Set up a pyrolise boiler	Up 70% cost saving
Set up an equipment for reactive power compensation	10% of energy saving
Use the warm exhaust air as a heat sourse for heat pump	estimation approx. 800 kWt of heat could be generated
Replacing gas boiler for a more economical	90 % elimination of losses
Full commissioning of АСКУЕ (SCADA-system)	Reducing electricity losses by 10%,
Change electricity supplier	to 180 000 UAH / year

Descripton CP options

Electric power

1. For the enterprise was proposed to change electricity supplier.

Low cost option.

2. Set up of Automatic System for Control & Forecast and Accounting of Electrical Energy (ASCAEE – like SCADA).

The cost of options 80,000 UAH - the economic effect of the experience of established SCADA-System provides savings of up to 7-10% (reduction of losses, optimising of energy consumption regime) of estimated 200 000 - 260 000 UAH per year. Payback options 6-8 months.

Waste products of the second and third categories

Wastes are taken out on the garbage dump 211 tons.

Production of the second category sold 315 tons.

Energy value of 526,000 kg of waste products and the second category is equal a 167,000 m3 of natural gas.

Waste burning in a boiler provides heating of the 800 m2 premises during a 7 months

The cost of the boiler is of about 80 000 UAH.

Cost and payback for main options

№	Option	Cost, UAH	Benefit, UAH per year
1	Replacement of an electricity supplier	0	200 000
2	Installing of the SCADA-system	150 000	260 000
3	Compensation of reactive power	150 000	150 000
4	Denial of gas	600 000	1000 000
5	Water saving	45 000	150 000

Director Igor Shylovych

Annex 12

Preliminary Agenda of Advisory Board Meeting

9th of October, 2013

Time	Action	Responsible
9:00-10:00	Registration of participants to the Advisory Board Meeting	All
10:00-10:10	Greeting of participants, opening speech Expectations from the meeting	Mikhailo Zgurovsky, Rector of NTUU "KPI" Representative of Ministry of Economy Development and Trading of Ukraine, Representative of Ministry of Ecology and Natural Resources of Ukraine
10:10-10:30	**Presentation of the RECP project in Ukraine** 1) Goal, project steps and core activities 2) Summary of project results 3) Targets and main challenges for the future	Igor Shilovich, Director of RECPC
10:30-10:45	**Role of the Advisory Board. Function and regulation** The Regulation of the Advisory Board. Approval of the Head of Advisory Board	Ludmila Musina, Ministry of Economy Development and Trading of Ukraine; Moderator, participants
10:45-11:10	Questions and Answers	Moderator, participants
11:10-11:40	Supporting the activities of RECP-C in Ukraine-discussion: needs, challenges, partners to be involved, concrete actions and opportunities	Moderator, participants
11:40-11:55	**Thematic discussion**: presentation of the Policy Round Table and a feedback	Valeriy Pavshuk, Technical Director of RECPC
11:55-12:20	**Steps forward:** Drafting of an "action plan/road map" for 2014. Decision on the date of the next meeting	Igor Shilovich, Director of RECPC
12:30-13:30	**Lunch**	

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Tel.: +380 44 406 80 62; e-mail: ncpc@ukr.net; http://www.recpc.kpi.ua

List of Participants of Advisory Board of UNIDO Resource Efficient and Cleaner Production Project in Ukraine

№	Permanent members	Contact person
1.	Ministry of Agrarian Policy and Food of Ukraine	Victor Tymoshchuk
2.	Ministry of Regional Development, Construction and Housing and Communal Services of Ukraine	Ludmila Pashchenko
3.	State Agency on Science, Innovations and Informatization of Ukraine	Chaika Daria
4.	Ukrainian League of Industrialists and Entrepreneurs	Olena Polishchuk
5.	Chamber of Commerce in Ukraine	Kolomyjec Valery
6.	ICC	Darya Revina
7.	Swiss Cooperation Office in Ukraine	Petra Widmer
8.	Sustainable Business Associates	Karim Zein
9.	UNIDO	Maria Grineva
10.	RECPC	Igor Shylovych
11.	RECPC	Valerii Pavshuk
12.	RECPC	Valerii Redchik
13.	RECPC	Giustino Rampa
14.	RECPC	Taras Sakalosh
15.	RECPC	Olena Pushna

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Minutes

of the Meeting of the Advisory Board of the project "Promoting resource efficiency and of cleaner production (RECP) development through creation and beginning of operation of Cleaner Production Centre (CPC) in Ukraine"

October 9, 2013 number 1

the city of Kyiv

Chairman: Shylovych I.L., Director of Resource-Efficient and Cleaner Production Center (hereinafter - RECPC), established under the project "Promoting resource efficiency and of cleaner production development through creation and beginning of operation of Cleaner Production Centre in Ukraine" (hereinafter - the Project).

Secretary: Pushna O.O., office manager in RECPC.
In attendance were: according to the list (Appendix 1)
Invited: NTUU "KPI": pro-rector in scientific work, Ilchenko M.Y., Deputy Head of International Cooperation Department, Polishchuk E.V.

1. Greeting speech, Regulations Approval

Start at 10-30.

Greeting speech of pro-rector in scientific work, Ilchenko M.Y. on behalf of National Technical University of Ukraine "Kyiv Polytechnic Institute" to the participants of the Meeting of the Advisory Board.

HEARD:

Proposals on the agenda of the meeting of the Advisory Board.

APPROVED:

1.1. To accept the agenda for the meeting in the order that was proposed.

End of the meeting till 12-30.

2. About the Project Advisory Board

HEARD:

Information about the project and the course of its implementation, operation of RECPC under the project and the role and functions of the Advisory Board in supporting of RECPC operation.

APPEARED:

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Suite 3, Bldg. 6, 37 Peremohy Ave., Kyiv, 03056, Ukraine
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The Director of RECPC Shylovych I.L. presented the information about the Project. RECPC tasks that require cooperation with the Advisory Board were outlined in materials presented to the Members of the Advisory Board.

Speakers noted the necessity in working meetings of RECPC workers and representatives of the member organizations of the Advisory Board in order to discuss practical steps of cooperation, such as selection and engagement of mentioned above organizations in RECPC trainings, search and identification of the enterprises, potential clients of technical audits services.

It was emphasized n the discussion that the Advisory Board has advisory status, operation characteristics of which are outlined in the Regulation on Advisory Board. Participants agreed that under the Regulation on Advisory Board the amount of members can be increased with the consent of the members and the submission of concerned agencies and organizations.

APPROVED:

To take into consideration received confirmation from the invited organizations to participate in the meeting of the Advisory Board and to consider them as potential members of the Advisory Board. To send them information about the first meeting of the Advisory Board with the request to confirm their interest in the work of the Advisory Board.

To expand the list of members of the Advisory Board by including the International Chamber of Commerce (ICC) to the list.

To approve convening the meetings of the Advisory Board 1 a year, and at the initiative of the members of the Advisory Board.

Should conducting working meetings, expert meetings and members of the Advisory Board meetings be necessary, to determine the specific character of these meetings.

Based on the results of the collective agreement on the membership of the Advisory Board, to take into consideration the letter from the Ministry of Economic Development and Trade of Ukraine (№ 4011-09/25575-12 dated 22 June 2013) on the membership and organization of invitations to participate in the Advisory Board.

3. Discussion on Regulation of the Project Advisory Board and Approval of the Chairman of the Advisory Board.

HEARD:

Information on the Regulation on the Advisory Board and approval of the representative of the Ukrainian Union of Industrialists and Entrepreneurs as Chairman of the Advisory Board.

APPEARED:

The Director of RECPC Shylovych I.L. presented the informatio on the main clauses of the Regulation and those clauses requiring discussion.

Speakers generally agreed and approved the content of the Regulation on the Advisory Board. Speaking introduced a number of proposals for clauses of the Regulation that should provide operational stability of both RECPC and the Project in general, as well as promote a clear

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delineation of responsibilities and functions of the Advisory Board, the Steering Committee and RECPC.

In particular, the speakers proposed the following amendments to the text of the Regulation:

- Supplement to the clause 2.2: Discussion of specific technical and organizational issues concerning cooperation with RECPC experts is in the nature of special meeting and is not within the framework of the annual meeting of the Advisory Board.
- Supplement to the article 1, clause 1.4: Clauses not regulated by the Regulation on the Advisory Board are within the competence of the Steering Committee.
- Supplement to the clause 5.6: Powers of the Chairman of the Advisory Board are consistent with the Steering Committee and approved by the Meeting of the Advisory Board.
- Amendments to the article 5, clause 5.8: Organizational Support of the Advisory Board operation conducts RECPC.
- Accept the Regulation on the Advisory Board on Chairman of the Advisory Board for the first year of operation (cl.3.4).

APPROVED:

To take into account the comments from the participants of the meeting of the Advisory Board and to put proposed amendments to the Regulation in the general discussion. Having this purpose, RECPC should send the text of the Report of the meeting and the Regulation on the Advisory Board to all interested representatives-member of the Advisory Board.

To Apply in writing to the UMB with the request to determine the candidature for Chairman of the Advisory Board and approve the decision of UMB on Chairman of the Advisory Board in working order by written submission from members of the Advisory Board. To commit organizational approval procedure to the Director of RECPC.

Chairman Shylovych I.L.

Secretary Pushna O.O.

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Kiev: RECPC main activites during 2013 - 2014

Oct. | Nov | Dec | Jan | Feb | March | April | May | June | July | August | Sept. | Octob. | Nov. | Dec.

Training with experts

WS 1 Kiev Vinn.

WS LCA

WS 1 local

WS 2/3

WS3/4

WS5/6

WS 1 Kiev Vinn.

Experts visit

C. Hugy

WS LCA + assessment

WS LCA + assessment with government

LCA visit: follow up on results

First plants data collected for discussion before year end

Support expert in preparing IPA report, present & discuss with plants, assist in implementing improvement

New IPA round

IPA

Kiev 2 IPA started 4 companies under evaluation; No of new experts 30

2 IPA starting collecting data, 4 companies being evaluated

Follow up on IPA

Vinnitsia: 3 IPA started; 6 are in progress; No. of new experts 13

3 Project running, 6 in progress

12 to 20 candi-dates

Zaporizhya: 5 IPA ready to start No of available experts 14

Zap. Ferrosplavov; Ukrainsky Grafit; Airport; Root Holding; 5 plants pre-assessed, teams ready to start collecting data

Follow up on projects

KPI: corpus 18 + green park

Kiev:Boguslav textile plant

Kiev Vetropack

Vinnitsia: Miak

Vinnitsia: sugar plant

Corpus 18 insulation, thermal pump, future KPI green park strategy: project presentation in Decembre

follow up after meeting wiht owner

+ experts +2 trainee needed for this porject

follow up in Vinnitsia after agreement with owner

Follow up after measurment

1
2
3
1
1

KPI green park will probably continue

Ecoparks

KIEV

Vinnitsia

Work is ongoing probably 1 experts needed

work to start through discussion with Cities concerned

Work on "KPI green park" will continue

Work & conferences with Government officials

SBA

SBA

SBA

Energy strategy as per round table

Update on energy strategy

Business plan update

Expected Results

At least 12 IPA project

5 to 8 future experts to work on follow up projects

4 future experts to work on ECO Parks

Development of about 40 experts, of which 35% should be certified

12 to 20 candidates working for IPA

7 candidates to work on follow up projects

2 candidates experts to work on ECo Parks

Certify 15 to 20 experts

Work & conferences with Government officials

Annex 14

The list of required staff (to be recruited in 2014) includes:

1. National expert for information, communication and office management of the Cleaner Production Centre of Ukraine

A new person should be involved as a national expert in information, communication and office management. This position became vacant, since the contract with Olena Rudenko has been terminated in December 2013 and the expert left the project team.

3 candidates have been selected. The applicants' CVs for the position of a national expert in information, communication and office management is attached, Annex 3 (Vera Gaidar, Valerie Tkachenko, Katerina Priymak).

2. Junior expert in water management and chemical management

The expert should further continue water management projects initiated in 2013, and intorduce approaches for efficient water consumption at all regions, where the Centre is present.

1. Chemical Leasing coordinator

In order to support the Chemical Leasing promotion and implementation at national industry, the management of the Centre has decided to look externally for a a chemist with an experience of working in national industries on chemicals related issues. The experience has shown that ChL projects can not be successfully implemented by specialists with only scientific/academic background. The implementation of the business model, requires practical knowhow and business experience. The search of applicants for ChL Coordinator will be done through the national network of the Centre and posts on the head hunting web sites in January 2014.

4. Technical CP experts for Zaporozhye and Vinnitsa regions

For more efficient technical work in regions of Zaporoshye and Vinnitsa, it is planned to involve:

- 2 CP experts in Zaporozhye region for implementation IPA in big companies – Ukrgraphite and Zaporozhye Ferro Alloy Plant. 2 applicants - Vladislav Rumiantsev and Gennadiy Kozhemyakin (CVs attached, Annex 4) have been pre-selected.
- 1 CP expert for providing technical assistance in Vinnitsa region. Olexiy Bailo Has been pre-selected.

5. National Consultant to Industrial Associations

In order to promote the RECP project to industry and invite more companies to participate (including companies which are ready to get services on payment-basis) the National Consultant to Industrial Associations should be involved to the project.
The selected applicant from ULIE is Sergey Khudobin (CV is attached, Annex 2).

6. Additional specialists

Additional national vacancies, which is under discussion:

National expert in chemical management; national expert on modern building constructions (modern buildings and requirements); National expert in agrarian sector in Vinnitsa region.

Needs for international expertise:
International consultants are needed in the areas of benchmarking, metal cutting, metal casting, biological farming, cooperation with international financial institutions, translation.

Annex 15 - Our Team

Facebook of key employees

 **Shilovich, Igor** **Director** shill3011@ukr.net	Igor Shilovich is the RECPC Ukraine Director. He graduated from Kiev Polytechnic Institute/Heat Engineering Department. In 1991 Mr. Shilovich defended his Ph.D. thesis in development of heat transfer devices. Specialized in energy saving processes in industry. More than 20 years' experience in plants assessments: pig iron and non-ferrous metallurgy, building materials producers, carbon and graphite materials producing. Since 2008 he is certified as a national CP consultant and confirmed his status in 2011.
 **Pavshuk, Valery** **Technical Director / Deputy Director** pav-valeriy@ukr.net	Valery Pavshuk is the Deputy Director for policy, legal aspects and research & development at Resource Efficient and Cleaner Production Centre. In 2007-2011 he was the National Coordinator of the UNIDO CP Project "Establishment and operation of a National Cleaner Production Programme in Ukraine". He organized training seminars, introduction CP pilot projects at the seventeen enterprises; supervised work in the office and with the support of international experts from UNIDO led the group of the national consultants in CP training; prepared current and final reports. Since 2008 he is certified as a national CP consultant. Since 2012 Mr. Pavshuk has been working on the position of the Deputy Director of the RECP Centre.
 **Rampa, Giustino** **CTA** of the Resource Efficient and Cleaner Production Centre	Giustino Rampa is involved to the UNIDO project as a Chief Technical Assistant. He graduated from ETHZ in 1974, Dipl.Masch INg. and IMD (International Institute for Management Development) - Business Programs in 1997, Leadership competence program. Mr. Rampa has skills and experience in Technology Development, Strategic Planning, Renewable Energy, Talent Management, Coaching, Product Development, Food, Solar, Process Engineering, Project Management, Cross-functional Team Leadership, Engineering. He worked for 33 years in Nestlé Company in 5 different countries. Since October 2013, he is working as a CTA at the

Giustino.rampa@gmail.com	RECP-C
 **Sakalosh, Taras** **Assistant Director** sakalosh@ukr.net	Taras Sakalosh graduated from Kiev Polytechnic Institute (Radio Engineering Department) and Kiev Business Institute of NTUU "KPI" in 2005. In 2009 he defended PhD thesis in strategic management of technological development of information and communication enterprise. His research interests focus on international scientific and technical cooperation, international production cooperation, and enterprise technological development and competitiveness management. He has worked in business projects of equipment modernization in national enterprises. Since April 2013, Taras is employed as an Assistant Director of the Centre.
 **Tchaykovs'ky, Olexiy** **Coordinator of regional activities in Kiev,** national CP expert olexiytc@yahoo.co.uk	Olexiy Tchaykovs'ky graduated from Kyiv Polytechnic Institute in "Foundry of ferrous and non-ferrous metals" (1988). He worked as an engineer, researcher professor of foundry department. Since 1996 Mr. Tchaykovs'ky has been working as a lecturer, an assistant. From 2002 he's been working as a professor. In 1999 defended his Ph.D. thesis. In 2008 he was certified as a national CP consultant and confirmed it in 2011. From 2012 he is the regional coordinator of RECPC. He provides technical and administrative assistance to support efficient management of RECP activities in the Kiev region.
 **Redchik, Valery** **Coordinator of the regional activities in Vinnitsa**, national CP expert redoso@i.ua	Valery Redchik is national CP expert and coordinator of the regional RECP office in Vinnitsa. Mr. Redchik is a specialist in electrophysical processing of agricultural products, microwave drying, stimulation of plants, disinfection and disposal of hazardous wastes using microwave radiation, electrolysis plants. Since 1996, the vice-president of regional branch of the Ukrainian Union of Industrialists and Entrepreneurs. Since 2012, is working for the RECP-C, received a CP certificate in 2013.

 **Kalachov, Sergiy** **Coordinator of the regional activities in Zaporozhye** recpcz@ukr.net	Sergiy Kalachov is a coordinator of the regional RECP office in Zaporozhye. Mr. Kalachov is a specialist in electrotechnics and in jurisprudence and has two year experience in managerial work at the Department of the Development of Industry, Transport, Communication and Conversion Processes of Zaporozhye Local Government (Zaporizhia Oblast State Administration). He was promoted from the Head of the department to the Acting Head of State Property Fund of Ukraine in Zaporizhia Oblast from 1993 to 2012. Mr. Kalachov has 4 awards and honorary nominations. Working for the RECP Centre since 2013 Close ties with enterprises help him to coordinate RECP implementation in the region.
 **Iurii Gaidaienko (part time)** **Technical assistant of regional coordinator** in Kyiv region yuriygaid_ncpc@ukr.net	Iurii Gaidaienko graduated from 'Kyiv Polytechnic Institute' Electromechanical Department (2009). He graduated from the post-graduate studies at the 'KPI' (2012) and is preparing to defend his Ph.D. thesis. Since 2012 Iurii has been working as Assistant lecturer. In 2013 he became certified National CP consultant and now he provides technical assistance to the regional coordinator of the Kyiv region.
 **Rudenko, Olena** **Information management specialist** rudlenav@yahoo.com	Olena has Master of financial markets degree (2007) at Ukrainian Stock Market Development Institute and degree of physicist – power – engineer (1993) at NTUU "KPI". She is certified project management specialist, and experienced in project communication, information management, training/events organization, web-sites development process coordination. Her contract expired in December 2013 and Olena changed the place of work.

 **Uzunov, Oleksandr** **Senior CP expert (part-time)** uzu@rambler.ru	Dr. Oleksandr Uzunov is a scientist in Mechanical Engineering area. Specialization is: simulation and analysis of the work processes in devices and systems with mechanical, hydraulic and pneumatic components; estimation of efficiency functioning of technical objects; design new mechatronic devices and systems. Lecturing courses: Modelling of the work processes in mechatronic devices and systems; Simulation and design of the mechatronic systems. In 2008 he is certified National CP consultant and confirmed it in 2011.
 **Khokhotva, Oleksandr** **CP expert (part-time)** khokhotva@bigmir.net	Oleksandr Khokhotva is an environmental engineer. He obtained Chemical Engineering degree (1997) at the National Technical University of Ukraine "Kyiv Polytechnic Institute" (NTUU "KPI"), MSc in Environmental Management and Policy (2004) at Lund Universit, Sweden; PhD (2005) at NTUU "KPI". His research interests focus on water treatment technologies and rational use of water resources. He is employed as an Associate Professor at NTUU "KPI", teaching a number of courses at Bachelor and Master levels. In the RECP-C he is involved since 2012 in projects in Cleaner Production and Chemical Leasing.
 **Pushna, Olena** **Office-manager** fusterna@ukr.net; fusterna@bigmir.net	Olena Pushna is PhD student of NTUU "KPI", Faculty of Chemical Technology, specialty technology of refractory nonmetallic materials. She graduated the National Technical University of Ukraine "Kiev Polytechnic Institute", Faculty of Chemical Technology, chemical engineer. Olena besides her main job as an office manager, is also involved in the Cleaner Production and Chemical Leasing projects, as a junior expert.

 **Valerie Tkachenko** **Interpreter** Valerie.tkachenko@gmail.com	Valerie Tkachenko graduated from Kyiv Linguistic University. She's also undergone training courses on "Results-oriented management", "Integration of gender equality into projects" (certificate level) and "Environmental assessment". Ms.Tkachenko has 17-years' experience of the development project management and grant management in agricultural, environmental and trade sectors; practical hands-on experience in preparing of baseline and needs assessment studies, presentations and reports; information management experience including working with local and international donor organizations. Her responsibilities in the Centre (in 2013) include translation and reviewing of the RECPC training, promotional and reporting information.
 **Oksana Siutkina** **Translator (part-time)** oksana.siutkina@gmail.com	Ms Siutkina is a Master student at the Faculty of Linguistics, with specialty translation in English and German languages. Oksana provides written translation of Centre's documents (reports, policy documents, leaflets, presentation etc.) and also interprets training workshops, accompanies foreign experts during their visits to the companies.
 **Suslova, Olena** **Gender Consultant** **(part-time)**	Olena Suslova is a Gender Issues Expert in the Centre. She combines the activity in the Project with the duties of Gender Activity Coordinator of the Parliamentary Development Project (from 2005 to date) and Chair Board of the Women's Information Consultative Centre (1995 to date). Assist the Centre in gender mainstreaming issues since April, 2013.

 **Knyazkova, Tetyana** **Water Management expert (part-time)**	Tetyana Knyazkova is a national expert on water management. She graduated from Kyiv Institute of Civil Engineers. Specialty: water supply and sewerage. Ph. in technology of inorganic matters (water). Senior Scientific Researcher. Areas of activity: water and sanitation, water and waste management, water treatment (especially membrane technologies). Implementation of new water treatment technologies at enterprises of textile, chemical, and pulp and paper industries. Sustainable solutions for waste water treatment plants. Has a big pedagogical experience (including English-speaking groups). Working at the Centre since 2013.
 **Tadlya, Kostyantyn** **Technical assistant (part-time)** konstat@ukr.net	Kostyantyn Tadlya is CP certified expert of RECP. He graduated the NTUU "KPI" in 2000, specialty thermal physics. In 2004 he defended PhD thesis related to diffusion processes modelling. Since 2007 he provides the consulting services to GHG emission estimation for different projects. He took participation in developing the GHG Inventory of Ukraine (2011-2012). Working at the Centre since November, 2013, assisting the team in technical assessments of enterprises

Technical assistant staff:

Name, date of birth	**Degree/ education**	**Specialization in**	**Responsible for**	**Region**	**Additional information**
Yuriy Gaidayenko, 1986	Master / graduated from NTUU KPI	Electric Engineering	Follow-up projects, consulting of new trainees	Kiev	Certified CP expert, recruited by the Centre
Andrey Vlasov, 1978	Diploma Engineer / graduated from Zaporozhye State Engineering Academy	Metallurgy	Consulting of new trainees, pre-assessment supervising	Zaporozhye	Certified CP expert, recruited by the Centre
Konstantin Tadlia, 1977	PhD / graduated from NTUU KPI	Thermal physics	Consulting of new trainees, pre-assessment supervising	Kiev	Certified CP expert, recruited by the Centre

Oleksandr Uzunov, 1954	Dr. habil. / graduated from NTUU KPI	Mechanical engineer	Training of new trainees, consulting of new trainees, pre-assessment	Vinnitsa, Kiev	Certified CP expert, recruited by the Centre
Oleksandr Khokhotva, 1974	PhD / graduated from NTUU KPI	Chemistry	Training of new trainees, consulting of new trainees, pre-assessment	Vinnitsa, Kiev	Certified CP expert, recruited by the Centre

Output Category 1: RECP service delivery	**Indicators (in total for 5 years)**	**Achieved in 2013**	***Achieved from the beginning of the project (2012-2013)***	**How can they be verified/ proven?**	**% from the target for 2013**
1.1. CPC established and operating as per agreed institutional and governance provisions	▪ Regular meetings of the Project Steering Committee and Advisory Board	▪ Done, 2 meetings	*Done, 2 meetings*	▪ Annual reports ▪ Minutes of the Project Steering Committee and Advisory Board meetings. ▪ Final project evaluation ▪ Business plan ▪ Quality management system documentation ▪ Statutes	▪ 100
	▪ Adequate staffing and facilities for the CPC	▪ Facilitating with office equipment (12 units) and special measurement equipment (11 devices)	▪ *Facilitating with office equipment (12 units) and special measurement equipment (11 devices)*		▪ 100
	▪ Establishment of 6 regional offices	▪ 3 regional offices (Kiev, Vinnitsa, Zaporoshe)	▪ *3 regional offices (Kiev, Vinnitsa, Zaporoshe)*		▪ 100
	▪ Business plan developed	▪ Kick-off activity on business plan development jointly with GIZ and SBA	▪ *Kick-off activity on business plan development jointly with GIZ and SBA* ▪ *Business analysis -brainstorming – conducted*		▪ 50

	▪ Minimum of 10 staff members (including regional coordinators) trained on the CPC management und business planning	▪ GIZ meeting ▪ Strategic concept, priorities and targets for the annual plan 2014 elaborated	▪ *GIZ meeting*		▪ 40
	▪ Annual reports drawn up and monitored	▪ Annual report developed (2013)	▪ *2 annual reports developed and submitted (2012, 2013)*		▪ 100
	▪ Annual work plans and reviews drawn up and monitored	▪ Annual work plan developed and monitored (2014)	▪ *Annual work plan developed and monitored (2013)*		▪ 100
	▪ Quality management system in place	▪ Management system implemented (structure of the Centre an list of responsibilities are developed, regular staff meetings organized, system of reports implemented)	▪ *Management system implemented (structure of the Centre an list of responsibilities are developed, regular staff meetings organized, system of reports implemented)*		▪ 50

	▪ Financial monitoring in place	▪ Accountant is hired; financing audit company is charged for consultations	▪ *Accountant is hired; financing audit company is charged for consultations*		▪ 100
	▪ Registration of the CPC as independent legal entity	▪ Done, RECPC is registered as a non-government independent entity 13 July 2013	▪ *Done, RECPC is registered as a non-government independent entity 13 July 2013*		▪ 100
	▪ In year 5, the self financing degree (national costs) will be 50 %	▪ Number of payment basis contracts with companies signed (5 contracts – Vinnitsa, Kiev); aggregate sum is about 30 000 UAH	▪ *Number of payment basis contracts with companies signed (5 contracts – Vinnitsa, Kiev); aggregate sum is about 30 000 UAH*		▪ N.a.

1.2 CPC staff and associated experts trained in basic and advanced RECP methods and applications	▪ Number of training courses for CPC professional staff and associated experts ▪	▪ CPC professional staff and junior experts were trained in software application in heat and material balances calculation (WS April-May, Kiev, Vinnitsa); WS were provided by specialists from SRC	▪ *CPC professional staff and junior experts were trained in software application in heat and material balances calculation (WS April-May, Kiev, Vinnitsa); WS were provided by specialists from SRC*	▪ Attendance records and exit test results of training events	100
	▪ Minimum 10 staff members (including regional coordinators) trained on RECP methodology	▪ Software implementation on balances calculation; ▪ TOT training WS All staff, Vinnitsa Coordinator, technical experts	▪ *Software implementation on balances calculation;* ▪ *TOT training WS All staff, Vinnitsa Coordinator, technical experts*		100

	▪ Minimum 15 experts trained on RECP methodology per year/region (per 5 years: minimum 380 experts trained) *(45 experts for 3 regions per year)*	▪ **17 experts** (Kiev, Vinnitsa), 2 regions have been trained; ▪ New experts selected in 2013: 15 experts – Zaporozhe; 12 experts – Vinnitsa; 15 experts – Kiev; 10 – Odessa	▪ ***17 experts*** *(Kiev, Vinnitsa), 2 regions have been trained;* ▪ *New experts selected in 2013: 15 experts – Zaporozhe; 12 experts – Vinnitsa; 15 experts – Kiev; 10 – Odessa*		**37** (for certified experts)
	▪ Minimum 30 experts trained on ChL during first 3 years	▪ Not selected	▪ *WS on ChL was conducted on December 12, 2012;* *9 junior experts were selected for ChL activity*		0
	Minimum 3 RECP and ChL trainers trained per year/region *(comm.: 9 experts for 3 regions)*	▪ Kiev region – 2 RECP trainers participate in current project ▪ Zaporozhe – 3 RECP trainers participate in current project	▪ *Kiev region – 2 RECP trainers participate in current project* ▪ *Zaporozhe – 3 RECP trainers participate in current project*		20

	▪ Minimum 4 experts trained on specific CP-related topics per year/per region (per 5 years: minimum 80 experts trained) *(comm.:12 experts for 3 regions)*	▪ Kiev region – 2 experts are trained in water management isssues	▪ *Kiev region – 2 experts are trained in water management isssues*		16
	▪ Minimum of 2 training materials developed	▪ -	▪ -		0
	▪ Developed/translated/adopted for Ukraine on RECP	▪ 1 toolkit on RECP is adapted for WS; ▪ Questionnaire for company visits is updated	▪ *1 toolkit on RECP is adapted for WS;* ▪ *Questionnaire for company visits is developed*		100
	▪ Minimum 1 training material developed/translated/adopted for Ukraine on ChL (in total)	▪ -	▪ *Toolkit on ChL is adopted, translated and printed*		Done in 2012
	▪ Databases on RECP and ChL experts created and in use	▪ Database on RECP and ChL experts includes 31 names	▪ *Database on RECP and ChL experts includes 79 names*		100
2.1 Awareness and understanding of	▪ Website and helpdesk established	▪ *New design and 3 languages*		▪ Annual reports	▪ 100

RECP opportunities and benefits improved at national and regional levels among companies, authorities and other stakeholders	▪ Minimum of 5 awareness seminars per year on RECP and ChL organized and attended by key stakeholders and representatives from target groups	▪ 6 awareness seminars[1] per year on RECP and ChL have been organized	▪ *7 awareness seminars per year on RECP and ChL have been organized*	▪ Company surveys ▪ Promotional materials ▪ Attendance records of awareness seminars ▪ Enterprise assessments and reports ▪ University curricula ▪ Website recpc.kpi.ua	▪ 100
	▪ Minimum of 5 promotional and information materials and case studies/articles on RECP and ChL developed per year	▪ 2 case studies and 2 papers in newspapers have been developed	▪ *2 case studies and 2 papers in newspapers have been developed*		▪ 80
	▪ RECP branding developed	▪ RECPC logo have been developed only	▪ *RECPC logo have been developed only*		▪ 50
	▪ Minimum of 3 Universities have integrated	▪ 5 Universities are involved: Vinnitsa Tech.Uni, Perejaslav-Chmel. Uni., Zaporozhe Eng.Acad., Kiev Arch and Building Uni., Odessa Food Uni	▪ *5 Universities are involved: Vinnitsa Tech.Uni, Perejaslav-Chmel. Uni., Zaporozhe Eng.Acad., Kiev Arch and Building Uni., Odessa Food Uni*		▪ 100

[1] Awareness raising seminars in universities, within Green Mind Forum (RECP section organized and carried out)

	▪ RECP/ChL in their curricula	▪ In progress; Water treatment and Natural Polymer Department of NTUU "KPI" implemented a specific course on "Ecology and CP"	▪ *In progress; Water treatment and Natural Polymer Department of NTUU "KPI" implemented a specific course on "Ecology and CP"*		▪ 25
	▪ Minimum of 2 information seminars per year carried out with financial institutions and other industrial associations	▪ On-going	▪ *On-going*		▪ 0
	▪ Minimum of 5 RECP/ChL related videos___for TV-programmes developed	▪ Producer of TV is selected; calculation on services is in progress	▪ *Producer of TV is selected; calculation on services is in progress*		▪ 0
	▪ Minimum of 2 ChL information seminars and one roundtable for countries of the Black Sea region organized	▪ -	▪ -		▪ 0
	▪ 1 ChL Award Ceremony organised	▪ -	▪ -		▪ 0
	▪ 5 Annual RECP Award Ceremonies organized and carried out (1 per year)	▪ 2 Annual RECP Award Ceremony in regions	▪ *2 Annual RECP Award Ceremony in regions*		▪ 100

	▪ Minimum of 3 events as trade fairs/roundtables/ big national or regional conferences related to RECP/ChL attended per year	▪ 1 Fair, 3 Round Tables, 3 big national conferences	▪ *1 Fair, 3 Round Tables, 3 big national conferences*		▪ 100
2.2 Demonstrated potential of RECP for the reduction of waste, greenhouse gases (GHG) and other emissions (water, raw material, etc.) as well as Chemical Leasing for the sound management of chemicals and energy efficiency	▪ Minimum of 10 RECP assessments per year/region (per 5 years: minimum 200 assessments) *(comm..: 30 assessments for 3 regions)*	6 RECP assessments (Kiev region) 6 RECP assessments (Vinnitsa region)	*6 RECP assessments (Kiev region)* *6 RECP assessments (Vinnitsa region)*	▪ Annual reports ▪ RECP final reports ▪ RECP assessment and ChL project reports	▪ 40
	▪ Minimum of 10 ChL demonstration projects developed and 20 companies involved	▪ 3 assessments on ChM only	▪ *3 companies assessed on ChL* ▪ *3 assessments on ChM*		▪ 30
	▪ Minimum of 70 % of participating companies implemented more then 50% of options developed	▪ No. CP options identified in completed in-plant CP assessments: 54 CP identified at company level ▪ 73 % of developed options have been implemented	▪ *No. CP options identified in completed in-plant CP assessments: 54 CP identified at company level* ▪ *73 % of developed options have been implemented*		▪ 100

	▪ 3 sector specific RECP manuals published	▪ In progress 2 manuals on RECP approach implementation in metallurgical sector	▪ *In progress 2 manuals on RECP approach implementation in metallurgical sector*		▪ 30
	▪ 1 ChL manual published	▪ -	▪ *1 ChL manual published*		▪ 0
	▪ Database on target sectors and sector - specific RECP and Chemical Leasing case studies developed	▪ -	▪ -		▪ 0
2.3. Mechanisms established for the sector-based replication and up-scaling of RECP results and opportunities in business	▪ Sector-based self-assessment tools, benchmarks and guidelines for minimum of 3 sectors developed	▪ Questionnaire for pre-assessment is developed	▪ *Questionnaire for pre-assessment is developed*	▪ Annual reports ▪ Published tools, benchmarks and guidelines ▪ Final project evaluation ▪ Qualitative assessment	▪ 30
	▪ Group-based training and assistance model for the up-scaling of RECP created	▪ -	▪ -		▪ 0

2.4. Results and benefits of RECP and ChL demonstrations documented in verifiable and transparent manner	▪ National specific indicator framework for measuring RECP benefits at company level established and based on general RECP program indicators	▪ Table with calculated indicators is developed based on UNIDO NCPC Guidelines Notes on the Succcess Indicators (UNIDO Cleaner Production Unit)	▪ *Table with calculated indicators is developed based on UNIDO NCPC Guidelines Notes on the Succcess Indicators (UNIDO Cleaner Production Unit*	▪ Reports on verification/review of RECP and ChL benefits achieved by demonstration companies ▪ Qualitative assessment	▪ 100
3.1. Policy assessment carried out and RECP strategy developed	▪ National working groups established and operational	▪ National working groups established on October 8, 2013	▪ *National working groups established on October 8, 2013*	▪ Annual reports ▪ Policy assessment reports and strategy ▪ Minutes of working group and other consultation meetings ▪ Reports from government agencies and other stakeholders	▪ 100
	▪ Gaps identified for RECP promotion and policy	▪ Analysis on identification of RECP policy gap is developed (August, 2013) by specialist of State Institute of Strategy Investigation	▪ *Analysis on identification of RECP policy gap is developed (August, 2013) by specialist of State Institute of Strategy Investigation*		▪ 100

	▪ Policy strategy with RECP targets and policy instruments published	▪ Policy strategy investigation was presented at Policy Gap Round Table (October 8, 2013)	▪ *Policy strategy investigation was presented at Policy Gap Round Table (October 8, 2013)*		▪
3.2. National action plan for RECP developed and implementation mechanisms established	▪ Implementation mechanisms for RECP policy and strategy developed ▪ National action plan published	▪ Participation in the working group on National action plan for RECP implementation jointly with Ministry of Ecology. Comments to the National RECP Concept is developed	▪ *Participation in the working group on National action plan for RECP implementation jointly with Ministry of Ecology. Comments to the National RECP Concept is developed*	▪ Minutes of consultation meetings ▪ Reports from collaborating government agencies and other stakeholders	▪ 30
3.3. Implementation and enforcement capacity of the government for RECP-related policy and legislation enhanced	▪ Programme of training and implementation support for government officials established ▪ Database of national RECP experts and expertise established and open to central government and regional authorities	▪ On going ▪ Database of national RECP experts is placed on RECPC web-site	▪ *On going* *Database of national RECP experts is placed on RECPC web-site*	▪ Annual reports ▪ Attendance records and exit test results of policy training ▪ Independent final project evaluation ▪ Involvement of the RECP experts in the work of the government	▪ 0 100

3.4. Technical guidelines for target sectors developed	▪ Gaps identified in the system of technical guidelines ▪ Minimum 3 guidelines developed, tested and endorsed for target sectors	▪ On-going	▪ *On-going*	▪ Technical guidelines ▪ Annual reports	▪ 0
3.5. RECP opportunities utilized for the national implementation of Multilateral Environmental Agreements (MEAs): Persisting Organic Pollutants (POPs), Ozone Depleting Substances (ODS), GHG, hazardous waste, Clean Development Mechanisms (CDM)	▪ Assessment of commitments and actions under RECP-relevant MEA undertaken ▪ Opportunities for MEA implementation identified	▪ On going in a framework of national RECP strategy development	▪ *On going in a framework of national RECP strategy development*	▪ Annual reports ▪ Listings of potential pilot projects ▪ MEA implementation opportunities included in national RECP strategy and action plan	▪ 0
4.1. Professional capacities created and utilized to support the adaptation, development and transfer of RECP	▪ Minimum of 5 experts per region/year trained RECP technologies and related topics	▪ 2 experts	▪ *2 experts*	▪ Seminars ▪ Workshops ▪ Training reports ▪ Annual reports	▪ 13
	▪ At least 3 sectors specific training materials on RECP technologies	▪ 1 specific training materials on RECP	▪ *1 specific training materials on RECP*		▪ 15

technologies	developed/adapted	technologies development on going	*technologies development on going*		
4.2. Awareness and understanding of RECP technology opportunities improved at national and regional levels	▪ Minimum of 3 promotion and information events on RECP technologies carried out per year	▪ -	▪ -	▪ Seminars ▪ Workshops ▪ Information materials ▪ Statistics	▪ 0
	▪ Minimum of 3 sector-specific or problem specific surveys (e.g. water treatment, waste minimisation etc) carried out	▪ 1 water and water waste management survey developed (it is specific survey)	▪ *1 water and water waste management survey developed (it is specific survey)*		▪ 30
	▪ Minimum of 10 requests per year received for assistance in the development and transfer of RECP technologies from target industries	▪ 5 requests for assistance have been received	▪ *5 requests for assistance have been received*		▪ 50
	▪ Minimum of 20 service providers contacted the CPC and got involved in RECP technologies	▪ -	▪ -		▪ 0
4.3. RECP technology opportunities are identified as part of	▪ Minimum 20 of technology options per year identified	▪ 54 CP options are identified (Kiev region, Vinnitsa region)	▪ *54 CP options are identified (Kiev region, Vinnitsa region)*	▪ Assessment reports ▪ Company reports	▪ 100

RECP assessments	▪ Minimum 10 of technology options per year evaluated	▪	▪		▪
4.4. Agreements and financial mechanisms to support RECP technologies developed and implemented on the basis of meetings and discussions held with key financial institutions and donors	▪ Minimum of 3 financial mechanisms established	▪ 1 cooperation established with the CP unit of IFC to support the funding of RECP projects at company level	▪ *1 cooperation established with the CP unit of IFC to support the funding of RECP projects at company level*	▪ Minutes from meetings ▪ Joint action plans ▪ Statistics	100
	▪ Minimum 200,000 Euro of special grants received	▪ Business plan on 100 000 Euro submitted to NEFCO Credit Committee	▪ *Business plan on 100 000 Euro submitted to NEFCO Credit Committee*		▪ 50
	▪ Minimum of 3 joint publications developed	▪ Information flyer developed	▪ *Information flyer developed*		▪ 0
	▪ Minimum of 5 joint events organized	▪ 1 joint seminar for RECP experts (08th of April 2013)	▪ *1 joint seminar for RECP experts (08th of April 2013)*		▪ 20
	▪ 5 annual meetings/conferences to discuss further cooperation organized	▪ 2 meetings (IFC and NEFCO)	▪ *2 meetings (IFC and NEFCO)*		▪ 100
	▪ Minimum of 10 large–scale technical assessments for the clients of IFC, NEFCO and other financial institutions carried out	▪ 8 IPA assessments have been carried out to identify potential clients	▪ *8 IPA assessments have been carried out to identify potential clients*		▪ 80

		for IFC	*for IFC*		
4.5. Economic and environmental benefits of RECP technology adaptation, development and transfer verified	▪ Minimum of 5 RECP technology assessments per year carried out (totally minimum of 25 assessments)	▪ -	▪ -	▪ -	-
	▪ Minimum of 3 RECP technology (sector or problem specific) case studies drawn up	▪ -	▪ -		-
4.6. Stakeholder platform to support RECP technology adaptation, development and transfer has been established and is taking an active role in advocating RECP technologies at company level	▪ RECP technology working group established	▪ -	▪ -	▪ Records of meetings ▪ Physical or virtual knowledge management system ▪ Records of meetings ▪ Workshop reports ▪ Surveys and reviews	-
	▪ Knowledge management and database on RECP technology providers established	Participation at KMS at http://eecca.recpnet.org/	*Participation at* ▪ *KMS at http://eecca.recpnet.org/*		▪ 100
	▪ Increased cooperation agreements between companies and technology developers	-	-		-
	▪ Increased number of events focusing on the development of RECP technologies and their implementation in target sectors	-	-		-