



a toxics-free future

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International SAICM Implementation Project (ISIP)

In 2010, in an effort to demonstrate SAICM implementation via IPEN Participating Organizations, IPEN launched an International SAICM Implementation Project, also known as ISIP. ISIP aims to mobilize resources for initial enabling activities pertaining to national priorities, in keeping with the work areas set out in the strategic objectives of section IV of the SAICM Overarching Policy Strategy.

In particular, the ISIP supports the Governance objective of SAICM's Overarching Policy Strategy paragraph 26, which calls for enhanced "cooperation on the sound management of chemicals between Governments, the private sector and civil society at the national, regional and global levels."

In addition, ISIP builds on the 2008-2009 Global SAICM Outreach Campaign to raise awareness about SAICM and strengthen collaboration among the public interest, health and labor sectors.

ISIP Objectives

ISIP's four objectives include:

- Promoting the need for sound chemicals management
- Advancing National SAICM Implementation
- Promoting global SAICM implementation by global civil society
- Building capacity among NGOs developing countries and countries with economies in transition

Title of activity: Mercury containing light bulbs in Nizhny Novgorod: assessment of the situation and policy recommendations

NGO: Eco centre DRONT

Country: Russia

Date: December, 2012

Elements of SAICM Covered:

Participation in the collection, review, and assessment of existing information on information systems pertaining to chemicals in products including but not limited to regulations, standards and industry practices; Develop specific recommendations for actions to promote implementation of the Strategic Approach with regard to such information, incorporating identified priorities and access and delivery mechanisms; and follow up activities for the SAICM OEWG and ICM3; Promote the use of safe and effective alternatives, including non-chemical alternatives to organic chemicals that are highly toxic, persistent and bioaccumulative; Promote the development and use of products and processes that pose lesser risks; Articles and products containing hazardous substances should all be accompanied by relevant information

for users, workplaces and at disposal sites; Promote provision of information for all chemicals in commerce, including appropriate information detailing their inherent hazards should be made available to the public at no charge and generated where needed with essential health, safety and environmental information made available (ICCM2 decision II/4, GPA items 54, 44, 108,111)

Description of the specific product(s) and chemical(s) related to the activity:

The project is focused on the end of life mercury containing light bulbs.

Energy-saving compact light bulbs pose a serious health risk due to mercury, which is used in the production process and is part of the bulb. Mercury in vapour state is located inside energy-saving lamps and could pose a significant health threat to people and the environment. Mercury could enter the environment if the bulb is broken or if it becomes waste. According to hygienic classification, mercury refers to the first class of hazard.

Description of the toxic effects of the chemicals contained in the product(s):

If the bulb is broken, the mercury is easily spread into the air and people will inhale mercury vapour. Mercury vapour is dangerous and can cause severe poisoning of people. Mercury and its compounds affect the central nervous system, liver, kidney, and gastrointestinal tract. If inhaled, respiratory passages will be impacted. Mercury usually penetrates into the human body during inhalation of its vapour, which does not smell. Mercury accumulates in the human body for a long time, causing irreversible damage to health.

When mercury enters the aquatic environment, it can be transformed into a more toxic form, methylmercury. Methylmercury, dissolved in water, becomes a source of water pollution for a long time.

Description of how consumers are exposed to these toxic chemicals:

1. Due to pressurisation failure

Compact florescent bulbs (CFBs) may contain from 20 to 50 mg of mercury. Maximum allowable concentrations (MAC) for mercury contents in ambient and indoor air is set at the level of 0.0003 mg/m³. If a bulb depressurises in a closed room, mercury levels in air might exceed the MAC. Mercury evaporates, but people do not feel the vapour that adversely affects human health.

2. Due to "utilisation" to garbage cans

Numbers of used CFBs have already reached an industrial scale. Residents of Nizhniy Novgorod have to dispose of mercury-containing waste bulbs to ordinary garbage cans together with other types of municipal waste. Municipal landfills in the city are not protected from atmosphere precipitation - rains and snowfall allow mercury to infiltrate to groundwater and then rivers....

Accumulating in landfills, heavy metals contaminate their areas and nearby territories. Having once entered a human body, mercury compounds accumulate and might cause serious health problems due to cumulative effects.

Accounting for steadily increasing numbers of mercury-containing bulbs in our homes (and eventually at landfills), the problem is expected to become a major one in 4 - 5 years.

Description of how the product waste that contains the hazardous chemical(s) is handled:

It is necessary to organise collection of burnt bulbs and their temporary storage in pressurised containers. Then, burnt bulbs undergo wet grinding with a washing solution to extract mercury and fluorescent agents.

A special solution is used for these purposes. After the washing operation, glass and adaptor plugs are separated mechanically.

Bulbs are grinded in a ball mill - initially by dry grinding, and then a reagent solution is added to the mill (solution of potassium iodide, iodine, sodium hydroxide and sodium chloride).

Bulbs undergo wet grinding in the ball mill in presence of the reagent solution for 30 to 180 minutes, at a temperature of 20 to 60°C. In the course of the grinding operation, the mixture is demercurised.

After completion of the grinding operation, the liquid mercury-containing reagent is drained off from the ball mill and treated for mercury recovery (e.g. by precipitation on aluminium).

Description of what information (or level of information) is available to consumers about the toxic chemicals in the product:

Internet and media publications, information in the info inserts of CFBs packaging.

Description of what types of similar products are available on the market, including safer alternatives:

LED and halogen bulbs.

Project Outcomes:

Description of the activity conducted:

In the course of the project implementation, a package of applicable legal acts on CFBs was assembled:

- the Federal Law on Energy Conservation
- RF Governmental Regulation # 681 of 03.09.2010
- Regulation # 1123 of the State Administration of Nizhniy Novgorod of 25.03.2011 (recommendations for housing maintenance companies to organise collection, accumulation, use, neutralisation, transportation and disposal of mercury-containing bulbs)

The following requests were drafted and submitted:

- 2 requests to the State Administration of Nizhniy Novgorod asking for explanations on procedures of collection of burnt mercury-containing bulbs;
- 28 requests to companies and Housing Maintenance Facilities (HMFs) that collect mercury-containing bulbs
- 1 request to the Legislative Assembly of Nezhegorodskaya oblast asking for a roundtable discussion on matters pertaining to collection of burnt mercury-containing bulbs.

Negotiations and meetings conducted

- a meeting with the Committee for Environment and Natural Resources of Nizhniy Novgorod on utilisation and collection of mercury-containing bulbs - we were informed that the Committee notified facilities and organisations of the city on the need to collect the bulbs for disposal; we were also provided the list of specialised facilities that collect the bulbs;
- a meeting with "Farbe" Co. Ltd. to discuss issues of collection of mercury-containing bulbs. The company can collect bulbs only from legal entities and at some conditions - they need to purchase a specialised container (unit price: RUR 2700, capacity: about 200 CFBs). Besides, every CFB should be paid for separately. We examined one such container;
- negotiations were conducted with HMFs of Sormovskiy, Moskovskiy, Kanavinskiy, Avtozavodskiy, Nizhegorodskiy and Sovetskiy districts of Nizhniy Novgorod to discuss possibilities for collection of burnt CFBs from city residents (physical persons).

All HMFs, except the one of Sormovskiy district, **failed to find possibilities for collection of CFBs from residents.** HMF of Avtozavodskiy district was ready to study available experience. Generally, HMFs do not seek to organise collection of mercury-containing bulbs as they see no associated benefits. HMF of Sormovskiy district initiated collection of burnt CFBs from residents of the whole city. At the initial stage, bulbs are collected in cardboard packaging and free of charge. These arrangements are associated with HMF's responsibilities - the facility has to

transfer the accumulated CFBs for utilisation as a legal entity and for some pay. In addition, IKEA collects burnt CFBs if purchased in the chain's outlet.

- a roundtable discussion was conducted in the Legislative Assembly of Nizhegorodskaya oblast, jointly with the Committee for Urban Development, Housing, Utilities, Fuel and Energy. The roundtable discussion was attended by: the Minister of Ecology and Natural Resources of Nizhegorodskaya oblast; elected representatives of the Legislative Assembly; representatives of the RF Consumer Protection Agency, the Ministry of Housing, Utilities, Fuel and Energy Industry of Nizhegorodskaya oblast; representatives of businesses: "Farbe-NN", Ecoservice of Volga Area; NGOs: Let's Help the River, "Dront" Eco-centre, etc.

The roundtable discussion was dedicated to *Review of Results of Monitoring Implementation of Law # 144-3 of Nizhegorodskaya oblast of September 10, 2010 on Ensuring Cleanness and Order at the Territory of Nizhegorodskaya Oblast.*

The roundtable was initiated by the project organisers. The issue of burnt mercury-containing bulbs was incorporated into the meeting's agenda.

In the course of the discussion we provided the following recommendations: to arrange operations of a specialised truck for collections of CFBs from local residents, and to conduct a roundtable of HMFs for sharing experiences of Sormovskiy district HMF in the sphere of organising collection of mercury-containing CFBs from the city residents.

The recommendations were approved.

A booklet - "Protect Your Health while Conserving Energy" - was produced and disseminated (1000 copies). The booklet contains information on adverse health impacts of mercury, provides addresses of CFBs-collection outlets and rules of their collection. Copies of the booklet were disseminated in schools (99 schools), facilities (10), district administrations (5), among elected representatives, municipal officials, etc.

11 meetings in schools were conducted to explain the need to handle mercury-containing bulbs with care and utilise them in the course of lessons in 6 schools of Nizhniy Novgorod.

82 persons were surveyed to find out what people do with burnt mercury-containing bulbs: 40 respondents store them at home due to low numbers (they rarely replaced CFBs), 30 respondents said that they do not remember what they do with burnt bulbs, while 12 respondents admitted that they disposed of them to garbage cans.

Conclusions: *"The process has started"* in the sphere of collection of CFBs from the city residents, there are opportunities to deal with authorities and to address these problems, but we need more time. The project needs continuation, as it is necessary to develop practices of collection of the bulbs from residents of the city and the oblast. In Nizhegorodskaya oblast, almost all municipalities simply do not know that they bear responsibility for collection of CFBs from residents. In Nizhniy Novgorod itself, only one HMF of 8 operational HMFs collect CFBs.

In general, many residents of Nizhniy Novgorod understand hazards associated with mercury-containing bulbs and are ready to return them for utilisation, but the collection system is not duly developed in the city.

Our work in schools was rather smooth, as children and teachers disseminated information further, among their parents and neighbours.

Impact on target groups:

- *the State Administration of Nizhniy Novgorod*

After our requests to the Administration of Nizhniy Novgorod, the Committee for Environment and Natural Resources was instructed to notify individual entrepreneurs, legal entities and

physical persons on specialised facilities dealing with collection, use, neutralisation, transportation and disposal of burnt mercury-containing CFBs.

Besides, our requests induced the City Administration to assist HMF of Sormovskiy district in launching free collection of burnt CFBs from residents of the whole city. It was the first experience of collection of CFBs from residents. **Sormovskiy district HMF started to collect burnt mercury-containing bulbs from the city residents in mid-November 2011.** The roundtable discussion on utilisation of mercury-containing bulbs was conducted in the Legislative Assembly of Nizhegorodskaya oblast. Recommendations were developed to address the problem.

- managers of specialised facilities

Due to our requests, we identified specialised facilities that collect mercury-containing bulbs from legal entities and physical persons, as well as associated conditions, prices and minimal amounts, forms of contracts and addresses. As a result, we found that only 5 organisations - from the range of more than 20 specialised facilities surveyed - really collect CFBs, moreover, they collect them from legal entities only. None of the organisations was found to collect CFBs from residents. Therefore, the city residents have no opportunities to return burnt CFBs for utilisation.

There is only one exception - IKEA service centre collects CFBs, but only if purchased in IKEA store.

As a result of our requests, managers of the specialised facilities had to provide information on their actual operations in the sphere of collection of mercury-containing bulbs.

- residents of Nizhniy Novgorod

Due to a survey of residents on matters of handling burnt mercury-containing bulbs, we found that the majority of respondents had no idea what they should do with them, and some respondents simply disposed of them to municipal waste.

Information on health impacts of mercury, addresses of CFBs collection outlets, and associated rules and conditions were presented in our booklet. Residents' calls may be considered as a result of our activities - people called to ascertain details pertaining to collection of burnt bulbs - overall, about 35 persons called and about 35 residents returned burnt CFBs to Sormovskiy HMF (they got information in the booklet).

Copies of the booklet were disseminated in schools (100 schools), facilities (10), district administrations (5), among elected representatives of the City Duma and the Legislative Assembly of Nizhegorodskaya oblast.

Information was also disseminated in the course of lessons in 6 schools.

Outreach to stakeholders:

The following parties were involved into our activities:

- the city administrative authorities, including HMFs and district administrations of 5 districts of the city;
- the Ministry of Ecology and Natural Resources of Nizhegorodskaya oblast;
- the State Legal Department of Nizhegorodskaya oblast;
- the Legislative Assembly of Nizhegorodskaya oblast;
- the Administrative and Technical Supervision Inspectorate of Nizhegorodskaya oblast;
- Nizhegorodskaya oblast Directorate of the Federal Supervisory Service in the Sphere of Consumer Protection and Human Safety;
- the Ministry of Housing, Utilities, Fuel and Energy Industry of Nizhegorodskaya oblast;
- specialised organisations: "Farbe-NN", Ecoservice of Volga Area;
- school pupils and teachers.

There are substantial potential opportunities for further actions. Joint constructive activities and a series of negotiations strengthened working relations and confidence. Experience of Sormovskiy district HMF may be shared in Nizhniy Novgorod and Nizhegorodskaya oblast.

Deliverables, outputs and/or products:

I. A package of applicable legal acts on mercury-containing CFBs:

- the Federal Law on Energy Conservation
- RF Governmental Regulation # 681 of 03.09.2010
- Regulation # 1123 of the State Administration of Nizhniy Novgorod of 25.03.2011 (recommends housing maintenance companies to organise collection, accumulation, use, neutralisation, transportation and disposal of mercury-containing bulbs).

II. Survey results:

82 persons were surveyed to find out what people do with burnt mercury-containing bulbs: 40 respondents store them at home due to low numbers (they rarely replaced CFBs), 30 respondents said that they do not remember what they do with burnt bulbs, while 12 respondents admitted that they dispose of them to garbage cans.

III. Requests - letters

1. To Sorokin O.V., the Mayor of Nizhniy Novgorod - 2 requests were sent, asking for information on persons in charge of organisation of collection of burnt mercury-containing bulbs and collection procedures under clause 8 of RF Governmental Regulation # 681 of 03.09.2010.
2. To Laptev L.A., the Chairman of the Committee for Environment and Natural Resources of Nizhniy Novgorod - 3 requests, asking for information on specialised organisations that collect mercury-containing bulbs from legal entities and residents, and associated collection procedures.
3. To "Krasniy Bor" Co. - 2 requests, asking for explanations on procedures of collecting burnt mercury-containing bulbs from legal entities and residents.
4. To "Farbe" Co. - 2 requests, asking for explanations on procedures of collecting burnt mercury-containing bulbs from legal entities and residents.
5. To Ecoservice Co. - 1 request, asking for explanations on procedures of collecting burnt mercury-containing bulbs from legal entities and residents.
6. To "Promservis" Co. - 1 request, asking for explanations on procedures of collecting burnt mercury-containing bulbs from legal entities and residents.
7. To "Evrokom" Co. - 1 request, asking for explanations on procedures of collecting burnt mercury-containing bulbs from legal entities and residents.
8. To AGZO Business Association - 1 request, asking for explanations on procedures of collecting burnt mercury-containing bulbs from legal entities and residents.
9. To "Ekouniversal" Co. - 1 request, asking for explanations on procedures of collecting burnt mercury-containing bulbs from legal entities and residents.
10. To "Ekologika" - 1 request, asking for explanations on procedures of collecting burnt mercury-containing bulbs from legal entities and residents.
11. To "Orion" Co. - 1 request, asking for explanations on procedures of collecting burnt mercury-containing bulbs from legal entities and residents.
12. To "EkoMir"Co. - 1 request, asking for explanations on procedures of collecting burnt mercury-containing bulbs from legal entities and residents.
13. To "TAZvtorresurs" Co. - 1 request, asking for explanations on procedures of collecting burnt mercury-containing bulbs from legal entities and residents.
14. To "Patron" Co. - 1 request, asking for explanations on procedures of collecting burnt mercury-containing bulbs from legal entities and residents.
15. To HMF of Sormovskiy district - 1 request, asking for explanations on procedures of collecting burnt mercury-containing bulbs from legal entities and residents.
16. To HMF of Moskovskiy district.
17. To HMF of Kanavinskiy district - 1 request, asking for explanations on procedures of collecting burnt mercury-containing bulbs from legal entities and residents.

18. To HMF of Avtozavodskiy district - 1 request, asking for explanations on procedures of collecting burnt mercury-containing bulbs from legal entities and residents.
19. To HMF of Leninskiy district - 1 request, asking for explanations on procedures of collecting burnt mercury-containing bulbs from legal entities and residents.
20. To HMF of Nizhegorodskiy district - 1 request, asking for explanations on procedures of collecting burnt mercury-containing bulbs from legal entities and residents.
21. To HMF of Sovetskiy district - 1 request, asking for explanations on procedures of collecting burnt mercury-containing bulbs from legal entities and residents.
22. To HMF of Priokskiy district - 1 request, asking for explanations on procedures of collecting burnt mercury-containing bulbs from legal entities and residents.
23. To Lebedev E.V., the Chairman of the Legislative Assembly of Nizhegorodskaya oblast, the Committee for Urban Development, Housing, Utilities, Fuel and Energy Industry, the Committee for Environment - a letter with proposals to conduct a roundtable for discussing experience of collection of mercury-containing bulbs and for development of recommendations on collection of mercury-containing bulbs from the city residents.
24. Information materials for the roundtable.
25. The list of participants of the roundtable discussion, including E. Kolpakova, the manager of this Project.
26. The list of companies that collect burnt mercury-containing bulbs from legal entities.
27. Contact information of companies that collect burnt mercury-containing bulbs from the city residents.
28. Booklet "Protect Your Health while Conserving Energy".

Communication efforts:

The information was posted on web-sites of our organisation and published in the booklet to inform local residents.

NGO Recommendations for next steps:

1. To insist that HMFs of 7 districts should also start collection of burnt CFBs from residents - to this end, meetings with the city administration officials and HMFs managers should be conducted.
2. To inform all municipalities of Nizhegorodskaya oblast that they are responsible for collection of mercury-containing bulbs from residents.
3. To conduct a roundtable for top officials of major municipalities of the oblast, in the oblast Government venue with participation of HMF of Sormovskiy district (Nizhniy Novgorod) to share experience of collection of the bulbs from residents.
4. To continue informing residents of the city and the oblast on the need to collect and utilise mercury-containing bulbs. An information and awareness raising campaign may be conducted.