Implementation of Directive 2008/1/EC concerning the Integrated Pollution Prevention and Control in Kosovo: the IPPC permit

by

Arta Alla

Submitted to the Graduate Faculty of
North Carolina State University
in partial fulfillment of the
requirements for the degree of
Master of Environmental Assessment

Raleigh, North Carolina

2013

Graduate Committee

Linda R. Taylor

© Copyright 2013 by Arta Alla

All Rights Reserved

ABSTRACT

ALLA, ARTA. Implementation of Directive 2008/1/EC concerning Integrated Pollution Prevention and Control in Kosovo: the IPPC permit. (Under the direction of Linda R. Taylor)

The European Union seeks to control and prevent industrial pollution within its member states, and requires those countries seeking to join the EU to abide by these rules as well. The EU has regulated the emissions of large industrial installations through Directive 2008/1/EC, which serves as an EU-wide legal requirement. This directive represents a holistic approach to prevent, reduce or eliminate industrial pollution originating from industrial activities by addressing each source of pollution emanating from the entire industrial process. Directive 2008/1/EC requires large industrial installations to obtain an Integrated Pollution and Prevention Control (IPPC) permit which defines the emission limit values and other obligations for companies to reduce pollution. This is an inclusive and involved process which requires substantial expertise. Countries which are seeking to enter the EU must also implement Directive 2008/1/EC and its involved processes. Kosovo is a country newly formed from the former Yugoslavia and has a legacy of low environmental protections in the past. The Kosovo Government has recently had its first application for an IPPC permit. It had to create a process to comply with the Directive, with which the author participated, but as a new, post-conflict country, it encountered numerous obstacles due to this environmental regulation. This paper highlights those difficulties and challenges and offers some recommendations which were identified during the implementation process.

DEDICATIONS

To my mother and to those persons in Kosovo, Albania and worldwide who despair over fish disappearing in rivers while struggling to understand the cause.

BIOGRAPHY

The author earned a Masters in Human Development and Food Security from Roma Tre University in Rome, Italy in 2006. Her education and work experience for the United Nations and at Non-Profit Organizations pushed her to examine the links between poverty and the environment. Furthermore, memories of the pristine and unpolluted area where she grew up in Albania inspired her to study for the Masters in Environmental Assessment, to contribute to environmental protection hoping that future generations will experience the pristine, beautiful and healthy environment like that of her childhood.

ACKNOWLEDGMENTS

My special thanks go to Linda R. Taylor for her continuous guidance during this Masters program and for her support and feedback in this project.

I would also like to thank my husband, Jon Smibert, for his constant moral support and advice during the Masters studies.

TABLE OF CONTENTS

LIST OF TABLES

Implementation of Directive 2008/1/EC concerning Integrated Pollution Prevention and Control in Kosovo: the IPPC permit

INTRODUCTION

European Union countries require pollution permits for industrial and agricultural activities to be issued in accordance with an integrated, holistic approach, which is more challenging and in depth than the sectorial approach in the United States. This approach is called the Integrated Pollution Prevention and Control permitting process. For countries which are seeking to join the European Union (EU), especially those with previously low environmental protections, complying with this more sophisticated approach carries many difficulties. This paper describes the process that the Kosovo Government has been following to issue the first Integrated Pollution Prevention and Control (IPPC) permit. In particular, the paper highlights the challenges the Government faces to issue this type of permit.

The IPPC permit is issued by the EU member countries and those aspiring to join the EU. This type of permit represents a new holistic concept to prevent, reduce or eliminate industrial pollution originated by an industrial activity since it looks at sources of pollution across the entire industrial process. Thus, the IPPC permit covers air emissions, water and soil pollution as well as pollution originating from the use of raw material, and energy.

The IPPC permit is covered in the European Union's Directive 2008/1/EC which applies to industrial activities intending to operate in EU member countries. Since Kosovo is aspiring to obtain EU membership, it has started a process to homogenize Kosovo's laws with EU standards. In 2009, Kosovo adopted Directive 2008/1/EC into its national law (Law 03-L-045). In 2011, Kosovo drafted an Administrative Regulation (UA 03/2011) to comply with the EU conditions

under which companies can apply for an IPPC permit. This law and regulation together create the basis in Kosovo to protect the environment from industrial pollution. The first entity which applied for an IPPC permit is the operator of ferro-nickel process. The operator volunteered to collaborate with the ministry to identify the best way to implement Directive 2008/1/EC and balance environmental protection with economics.

This paper consists of three sections. The first section provides background information on Kosovo, focusing on its environmental legislation after World War II and then its aspiration to obtain EU membership. The second section describes the European Union's relationship with the environment and its legislation to prevent industrial pollution. This section focuses on the EU's Directive 2008/1/EC and Best Available Techniques Reference Documents (BREFs) which complement the Directive. The final section focuses on the IPPC directive and its implementation in Kosovo. In particular, this section highlights the difficulties Kosovo has encountered to as it effectuates the EU Directive and offers some recommendations identified during the implementation process.

KOSOVO BACKGROUND INFORMATION

Historical background information

For centuries, the territory of Kosovo has been disputed between Albanians and Serbs (BBC). In the middle ages, Kosovo served as the centre of the Serbian empire while in the eighteenth century it served as the center of the Albanian Renaissance. Kosovo was then ruled by the Ottoman Empire. With the decline of the Ottomans in the early 20th century, Kosovo became an autonomous province of the Socialist Federal Republic of Yugoslavia (SFRY). In 1999, the North Atlantic Treaty Organization (NATO) intervened in Kosovo to protect the Albanian population from genocide by Serbian forces. On June 10, 1999 the United Nations Security Council issued Resolution 1244, placing Kosovo under the supervision of the United Nations Interim Mission in Kosovo (known as UNMIK). This effectively carved Kosovo from the control of Serbia. Under UNMIK, Kosovo created a provisional government which then formed the institutional and legal foundations of the State of Kosovo. UNMIK directives had the force of law in Kosovo, but it eventually ceded powers to the provisional government, which began to pass laws and regulations.

Kosovo declared independence from Serbia on 17 February 2008. In 2008, the UNMIK mission was effectively replaced by the European Union Rule of Law Mission in Kosovo (EULEX). EULEX is currently scheduled to end in 2014. Kosovo is currently recognized as an independent country by 96 states (MFAK). It continuous to seek recognition from the rest of the world and also membership at the United Nations and the European Community. This recognition would allow Kosovo the right to participate in international treaties. Both the United Nations and the EU have refused to recognize Kosovo's independence, due primarily to Serbian

opposition. For this reason, the Government of Kosovo - with the mediation of the European Community - is now negotiating with Serbia for recognition which would aid Kosovo towards obtaining EU membership.

General background information

Kosovo is located in Southeastern Europe on the central Balkan Peninsula. The country is mostly mountainous with a large plain in the center. It covers an area of 10,887 square kilometers. It borders the countries of Albania, Macedonia, Montenegro and Serbia, all of which are prospective EU members.

According to the census of 2012, it has a population of 1,836,529 (CIA, the World Factbook). 92% of the population is Albanian, with the remainder being Serbs, Bosniak, Gorani, Roma, Turk, Ashkali and Egyptian (CIA, the World Factbook). Kosovo has a young population, with 46% of the population under the age of 25. The country suffers from high unemployment and therefore, about 30% of the population lives under poverty line.

Kosovo has always been rich in minerals and metals like lignite, zinc, lead, chrome, aluminum, and magnesium (CIA, the World Factbook). These natural resources facilitated the development of industry in the times of former Yugoslavia. However, the 1999 war and the collapse of Yugoslavia has resulted in the failure of most of the industry due to outdated technology and the lack of investment. Kosovo has a polluted environment as one of the legacies of its past industrial development. In 2001 Kosovo had about 110 environmentally sensitive areas, primarily caused by mining and industrial activities, chemicals, landfills, and agricultural activities (pesticides and fertilizers), and the lack of environmental control. Among

those 110 areas, 28 were areas with high environmental pollution know as hotspots. Hotspots covered 0.09% of the country (MESP).

Kosovo Aspiration to EU membership and its Implications

"All the countries of the Western Balkans have the prospect of future membership of the European Union, an objective endorsed by the European Council in Feira in June 2000 and confirmed by the European Council in Thessaloniki in June 2003. The European Council in December 2010 clearly reconfirmed these existing commitments" (EU EEAS web). This EU commitment to eventually admit the Western Balkans -- including Kosovo -- coincides with Kosovo's aspirations and expectations to become an EU member. EU membership represents the safest path toward peace and prosperity in this region. Thus, it is in the interest of the countries in the Balkans and the EU to collaborate for a peaceful future.

The rules and the criteria for joining the EU are defined by the Treaty on the European Union and the Copenhagen criteria. Normally, obtaining EU membership can span multiple years. The process is known as the Stabilization and Association Process (SAP) in the Western Balkan countries. SAP consists of the development of various kinds of aid and a political dialogue, which results in the signing of a Stabilization and Association Agreement between the state and the EU and then, finally, accession.

There are three phases constituting the SAP. The first phase consists of the interested country states. In theory, a review of the SAP process can begin only when the country has substantially complied with "EU standards and rules". In practice, this means that the interested country would have both the consent of "the EU institutions and EU member states" and that of its own citizens obtained through approval in its national parliament or by referendum (European

Commission: Enlargement web). If these conditions are in place and the state commits itself to respect and promote the EU democratic values, the country has the right to apply for membership.

In the first phase, the EU assists the country to achieve "stabilization and a swift transition to a market economy, the promotion of regional cooperation and the prospect of EU accession. It helps the countries of the region to build their capacity to adopt and implement European standards, including the Community *acquis*, as well as international standards" (European Commission: Enlargement web).

The second phase is a step forward towards EU membership. The country obtaines the status of "candidate country." At this moment, the candidate country and the European Commission - more precisely the Enlargement Directorate-General - sign a contract which is called the Stabilization and Association Agreement, or SAA. The SAA identifies those European standards or conditions the country needs to comply with to become an EU member. The SAA also defines the timing and conditions by which the candidate has to "adopt, implement and enforce" the EU rules (otherwise known as the *acquis communitaire* or more commonly the *acquis*). In other words, the SAA contains "the homework" the country needs to do to become an EU member. The final step concludes with the European Commission accepting the country as a member.

For the Western Balkan countries, the process differs slightly from the general process explained above. The EU has defined the Western Balkan as potential candidates from their establishment. So far in the Balkans, Romania, Bulgaria, Croatia and Slovenia have already achieved EU membership. The Former Yugoslav Republic of Macedonia (FYRM), and Serbia

are candidate countries and Kosovo, Albania and Bosnia are potential candidates (European Commission: Enlargement web).

Typically, the potential candidate countries and the candidate countries can move forward in the Stabilization and Association Process; however Kosovo has an additional obstacle. One of the key factors to begin the accession process or become an EU member is that a country must have "the consent of the EU institutions and EU member states." Since five EU members have not recognized the country as independent, Kosovo does not yet fulfill the initial conditions to start the SAP application process. Therefore, Kosovo finds itself disadvantaged in relation to the neighboring countries since ability to move toward EU accession depends on a factor outside of Kosovo's control – recognition by the remaining EU member states. Despite this obstacle, however, the Kosovo Government has fully embraced the EU perspective and has harmonized its laws with EU *acquis*.

Anticipating that Kosovo will continue in the Stabilization and Association Process and eventually become a member of the EU, the Kosovo Government functions as if it were already a candidate for EU membership. Likewise, the EU regularly monitors Kosovo's progress in adopting and implementing the EU *acquis* and rates that progress annually. The EU also provides financial and political assistance to Kosovo to comply with its standards. Hence, legislatively, the majority of Kosovo's laws -- including its environmental laws -- must comply with the EU legal standards.

Environmental legislation history in Kosovo

After World War II, Kosovo was an autonomous province of the former Socialist Federal Republic of Yugoslavia (SFRY). SFRY was a federation composed of six republics and two

autonomous provinces. For historical, political and cultural reasons, the autonomous province of Kosovo never obtained the status of republic, which resulted in less autonomy for Kosovo to pass its own laws and regulations.

As with many Eastern European countries, SFRY embraced the socialist economic model. However, instead of a political and economic power concentrated in the hands of the central government, SFRY chose a socialist market economy which delegated much of the power to its Republics. Therefore, Yugoslavia was a state where industrial development was highly decentralized and regionalized (Denitch).

Environmental protection was not a priority during most of the existence of the former Yugoslavia. Before the end of the 1980s, for instance, there were no laws aiming specifically at environmental protection at the Yugoslav federal level. There were, however, non-environmental laws that contained environmental provisions in them. For example, the Law on Construction of Facilities for Investment or Commercial Purposes (Official Gazette of Kosovo N. 5/86) and the Law on Spatial and Urban Planning (Official Gazette of Kosovo N. 2/89), both contained an article requiring investors to conduct an environmental impact assessment (Vlajic). However, there was no guidance on how to conduct the assessment. Thus, the articles in these laws remained merely "paper tigers" with little enforcement. Consequently, the expansion of industrial production in the 1980s - mostly heavy industry and mineral extraction - had enormous environmental consequences. This was the case of Kosovo which in 2001 was among the most polluted regions in the former Yugoslavia (Vlajic).

The 1990s witnessed a positive change in the way the former Yugoslavia dealt with its environment. The nuclear disaster at Chernobyl in 1986, as well as other internal factors, motivated people to examine ecological issues. Those internal factors included the need to clean

the environment in order to develop tourism. Further, the most developed Republics in the SFRY were dumping pollutants and chemical waste in the poorest regions, such as Kosovo, such that pollution had become a federal issue across the borders of its Republics (Denitch). These issues further motivated an ecological movement that coincided with the introduction of laws with the specific purpose of environment protection such as Law on Environmental Protection (Official Gazette of the Republic of Serbia 66/91) and Environmental Impact Assessment Act (Official Gazette 61/1992) (Vlajic). The Yugoslav Constitution was amended in 1992, which included "the right to a healthy environment" in Article 52. Article 77(4) of the new Constitution also took back from the Republics the competence to formulate policy on, among other things, the principles of environmental protection. Article 77(4) also federalized the protection of water and Article 77(8) federalized the protection of plants and animals against disease and pests, the sale of certain chemicals, and the protection against ionizing radiation or dangerous substances (Vlajic). Before the end of the decade, despite its internal disputes, Yugoslavia also ratified several international environmental conventions including the United Nations Framework Convention on Climate Change, the Convention of the Transboundary Effects of Industrial Accidents and the Convention on Environmental Impact in a Transboundary Context which still apply to Kosovo.

After the war in 1999, Kosovo came under UNMIK administration and within a few years, passed binding environmental legislation. This included the Law on Environmental Protection of 2003, the Law on Air Protection of 2004 and the Water Law of 2004. After becoming independent in 2008, Kosovo's Government has continued to introduce new environmental legislations in order to comply with modern EU environmental standards.

EU LEGISLATION ON INDUSTRIAL POLLUTION:

DIRECTIVE 2008/1/EC AND BREFS

EU and industrial pollution

The European Union has dedicated particular attention to the environment since its creation in 1992 through the Treaty of Maastricht. In fact, Title XVI of this treaty is dedicated to environmental protection. Within that Title, Article 130(r) defines one objective of the European Community (later, the EU) as "preserving, protecting and improving the quality of the environment" (Treaty of Maastricht 36). Furthermore, this treaty bases environmental protection on "the precautionary principle and on the principles that preventive action should be taken, that environmental damage should as a priority be rectified at source and that the polluter should pay" (Treaty of Maastricht 37). The precautionary principle and the principle that the polluter pays have become two pillars of EU environmental protection policy.

The EU's lawmaking regime permits it to pass environmental protective measures under Article 130s of the Treaty of Maastricht. In addition to those EU regulations, The Treaty has established that EU member countries can enact additional environmental regulations, which may be more stringent. Article 130t specifically states that "the protective measures adopted pursuant to Article 130s shall not prevent any Member State from maintaining or introducing more stringent protective measures" (Treaty of Maastricht 38).

Environmental protection in the EU is also related to human health protection and sustainability at a global level. Thus, Article 130r of the Treaty emphasizes the importance of protecting human health and using natural recourses "prudently" and "rationally" while attributing to the EU an important role in promoting environmental protection at the international

level. In this light, the EU's industrial pollution policies reflect the precautionary principle and a focus on human health protection.

Thus empowered, the European Union adopted the first directive to protect environment from industrial pollution in 1996 (Directive 96/61/EC). It is known as the Integrated Pollution Prevention and Control Directive or the IPPC Directive. The stated purpose of this Directive was to achieve integrated prevention and control of pollution arising from industrial and agricultural activities with a high potential for pollution. The directive has been amended and updated several times since its inception (Directive 2008/1/EC and Directive 2010/75/EU). In this paper, the focus is on Directive 2008/1/EC since it applies in Kosovo and most EU member states.

Directive 2008/1/EC

Directive 2008/1/EC aims to prevent and control pollution arising from large-scale industrial and agricultural activities. Those entities regulated conduct activities related to energy, production and processing of metals, mineral and chemical industry, waste management and "other activities" which are listed in Annex I of the Directive. Those “other activities” include industrial plants for the production of fiber materials (pulp and timber), paper and cardboard; plants for tanning of hides and skins, slaughterhouses; treatment and processing intended for the production of food products; installations for the disposal or recycling of animal carcasses, intensive rearing of poultry or pigs; installations for the surface treatment of substances objects or products using organic solvents (for dressing, printing, coating, degreasing, waterproofing, sizing, painting, cleaning or impregnating); and installations for the production of carbon (hard-burnt coal) or electrographite by means of incineration or graphitization.

For some activities such as paper and cardboard production, pre-treatment or dying of textile, tanning of hides and skins, and slaughterhouses, the IPPC Directive only applies if the production capacity exceeds levels defined in the law. For instance, in the case of paper and cardboard production, the IPPC Directive applies only to plants exceeding a production capacity of 20 ton per day. The Directive refers to both existing and new industrial installations, albeit with some differences.

In practice, Directive 2008/1/EC requires such large-scale activities to obtain an IPPC Permit. There are obligations with which industrial and agricultural activities have to comply to obtain this permit. The obligations consist of technical or organizational measures that installations have to put in place to ensure that:

(a) all the appropriate preventive measures are taken against pollution, in particular through application of the best available techniques;

(b) no significant pollution is caused

(c) waste production is avoided in accordance with Directive 2006/12/EC of the European Parliament and of the Council of 5 April 2006 on waste (1); where waste is produced, it is recovered or, where that is technically and economically impossible, it is disposed of while avoiding or reducing any impact on the environment;

(d) energy is used efficiently;

(e) the necessary measures are taken to prevent accidents and limit their consequences;

(f) the necessary measures are taken upon definitive cessation of activities to avoid any pollution risk, and return the site of operation to a satisfactory state (IPPC Directive 12).

In addition, the IPPC Directive specifies that the permit has to include certain requirements that regulate:

- emission limit values for polluting substances (with the exception of green house gases if the emission trading scheme applies);
- any soil, water and air protection measures required;
- waste management measures;
- measures to be taken in exceptional circumstances (leaks, malfunctions, temporary or permanent stoppages, etc.);
- minimization of long distance or transbounday pollution;
- release monitoring;
- all other appropriate measures (Europe: Summaries of EU legislation).

The Directive also provides a list of polluting substances; if those substances are relevant to the applicant, their emission limit values (ELV) should be fixed in the IPPC permit. The Directive governs the discharge of these substances into the air and into water. It does not list any such substances with respect to soil. For substances released into the air, the Directive includes sulphur dioxide and other sulphur compounds, oxides of nitrogen and other nitrogen compounds, carbon monoxide, volatile organic compounds, metals and their compounds, dust, asbestos (suspended particulates, fibers), chlorine and its compounds, fluorine and its compounds, arsenic and its compounds, cyanides, substances and preparations which have been proved to possess carcinogenic or mutagenic properties or properties which may affect reproduction via the air and polychlorinated dibenzodioxins and polychlorinated dibenzofurans.

The Directive also addresses polluting substances which are discharged into water. These substances include organohalogen, organophosphorus, organotin compounds; carcinogenic or mutagenic substances and preparations (which have been proved to possess these properties); persistent hydrocarbons and persistent and bioaccumulable organic toxic substances; cyanides;

metals and their compounds; arsenic and its compounds; biocides and plant health products; materials in suspension; substances which contribute to eutrophication (in particular, nitrates and phosphates), and substances which have an unfavorable influence on the oxygen balance and can be measured using parameters such as BOD, and COD (Annex III).

The IPPC Directive is the main legal instrument in Europe to reduce pollution, requiring the member states to have IPPC permitting processes in place. The main technique used by the IPPC Directive and the EU, though, is the Best Available Techniques (BAT) for reducing pollution. For this reason, the European Commission - through the European IPPC Bureau - has developed guidelines on how to select BAT. These guidelines are known as BREFs (Best available techniques reference documents).

The Best Available Techniques Reference Documents (BREFs)

When an IPPC Permit sets conditions on the applicant, those conditions are mainly based upon the BAT. BAT determines the amount of polluting substances an installation is allowed to release into the air and water. For instance, IPPC Permits for two installations of the same industry might have different ELVs of the same polluting substances if they use different air cleaning filters. Thus, proper selection of BAT becomes key to pollution control and prevention.

Article 2 of the IPPC Directive defines BAT as:

> 'Best available techniques' means the most effective and advanced stage in the development of activities and their methods of operation which indicate the practical suitability of particular techniques for providing in principle the basis for emission limit values designed to prevent and, where that is not practicable, generally to reduce emissions and the impact on the environment as a whole:

(a)‘techniques’ shall include both the technology used and the way in which the installation is designed, built, maintained, operated and decommissioned;

(b) ‘available techniques’ means those developed on a scale which allows implementation in the relevant industrial sector, under economically and technically viable conditions, taking into consideration the costs and advantages, whether or not the techniques are used or produced inside the Member State in question, as long as they are reasonably accessible to the operator;

(c) ‘best’ means most effective in achieving a high general level of protection of the environment as a whole.

Annex IV of the IPPC Directive outlines certain conditions for competent authorities to consider when choosing a BAT. They include the use of advanced technology or organizational measures concerning each aspect of an industrial activity. A BAT can include the use of low-waste technology, the avoidance of particular hazardous substances, or the reduction of emissions to a minimum. In principle, the BAT approach is to go for the best available techniques used in an industrial or agricultural activity. The BAT approach does not necessarily require an applicant to use the “best of the best” techniques, but it promotes the better technologies be used. It does not simply “create a cut-off criterion for the worst performing plants” (Schoenberger 1527).

As a rule, though, “the BAT associated emission levels …do represent the best performing installations” (Schoenberger 1528). The selection of “the best of the best” technology can be practically unrealistic, though, since the IPPC process must consider other factors beyond environmental protection. These factors include “technical constraints or considerations on the

economic viability with respect to the whole industrial sector concerned." Thus, economic viability or technical issues may limit the BATs available.

There are instances when "the best of the best" technology is appropriate. This is known as "beyond BAT" technology. Beyond BAT is applied mostly to meet local air or water quality standards. For instance, "in cases where an installation is located next to a residential area and to a hospital and is emitting solvents and odorous substances at already low concentrations, it may be required that a thermal oxidation or adsorption to an appropriate medium is required going beyond BAT" (Schoenberger 1528). Furthermore, Article 10 of the IPPC Directive authorizes competent authorities to impose "additional measures" on the operator to comply with the environmental standards when "stricter conditions then those achievable by the use of the best available techniques" are required. In most instances, though, the choice of BAT is generally based on cost and benefit, as well as the principles of precaution and prevention.

To assist countries to select the appropriate BAT, the European Commission's IPPC Bureau has issued Best Available Techniques Reference Documents (BREFs). In brief, BREFs are guidelines that cover each industrial activity listed in Annex 1 of the IPPC Directive. BREFs are thus specific to each industrial sector. For instance, the production of ferro-nickel is covered by the Reference Document on Best Available Techniques in the Non Ferrous Metals Industries.

Member States are required to use BREFs while drafting individual IPPC permits and issuing the "binding rules" for the operators. So far, the EU has issued 33 BREFs that cover about 29 industrial activities. BREFs are reviewed and updated by the IPPC Bureau of the European Commission every five to eight years. BREFs are produced by the IPPC Bureau and have been translated into many EU languages. Unfortunately, they have not been translated into Albanian or Serbian, which are the two official languages of Kosovo.

Consideration of the IPPC Directive

The IPPC Directive requires the IPPC permit to be a strong mechanism to eliminate or reduce environmental pollution. When the IPPC permit is issued, the authorities must describe the obligations the company must fulfill in order to operate. The permit must include the description of the BAT and the corresponding ELVs, but also must include more detail. It must describe the allowed emission points of the installation and the activity. It must set the frequency that the operator must monitor emissions and report the data to the Ministry. The IPPC Permit must include the operator's emergency plan in case of incidents. It must include the process that waste water is to be treated and the manner that the operator will dispose of waste. It must also include the cleaning and rehabilitation process that the operator will undertake at the end of the activity. The permit will also require the operator to provide the authorities with information and assistance to carry on inspections and *in situ* monitoring.

For these reasons, Directive 2008/1/EU constitutes a comprehensive approach to industrial pollution. This holistic approach ensures that there can be no trade-offs among pollution of environmental media in an industrial activity. For instance, companies are asked to reduce emissions in the air by using filters with spray systems. When used, these filters can pollute the water used in those spray systems. Hence, the pollution is partially transferred from air to water through the filters. To avoid such shifting of pollution, Directive 2008/1/EC requires that operator use the filters, but also requires the treatment of the water polluted by the filters. Hence, by considering pollution holistically, Directive 2008/1/EC guarantees that no source of pollution or residual environmental effect is unregulated or unaddressed (EPA).

Article 13 of the Directive 2008/1/EC requires the IPPC permit to be dynamic, open-ended or “a living document” (EPA 5). Thus, the IPPC permit is continuously being updated even after

it has been issued to the operator. It only ends once the activity is ceased. For instance, the operators are required to continuously update the permit conditions, refer the data on emissions monitoring to the ministry, refer changes in ELV charges in the environment, updates in technology in relation to BAT, other techniques considered as necessary, or other national or communitarian laws or provisions have come into force.

The IPPC Permit also promotes transparency. This includes public transparency between Authorities, the operator and public, but also transparency among EU states. For instance, Article 15 gives the public the right to participate in the process of permitting when the IPPC Permit is drafted or renewed, to have access to the emission data and obtain copies of the documentation with exception of the documentation considered as private by the company. Normally the authority and the operator have to agree on what is public and what is confidential.

Article 18 requires countries to share information with their neighboring country in those cases where an installation in one state can negatively affect the neighboring country's environment. The IPPC Directive also promotes the exchange of information among EU countries. Member countries are required to provide the IPPC Bureau with data on ELVs and the corresponding BAT. The IPPC Bureau collects the data and publishes them every three years. This database allows the EU countries to have the latest information and is used to draft new BREFs under Article 17 of the Directive. This information exchange assists new developing countries like Kosovo or regions like the Balkan where conflict among neighbors is common.

The IPPC Directive promotes the latest technology. In fact, when new techniques are developed to protect the environment, Article 11 of the Directive requires the competent authorities to update their knowledge and consider new technologies when issuing IPPC permits.

However, the IPPC permit should also be specific to an industrial sector, the local conditions, and the specific installation itself. The Directive allows each country to adjust the requirements to the location and the specific requirements needed for an installation.

DIRECTIVE 2008/1/EC IN KOSOVO AND ITS IMPLEMENTATION:

THE IPPC PERMIT

IPPC legislation in Kosovo

Kosovo is a candidate country, which means that it has clearly expressed its objective to become an EU member in the future. For this reason, it has committed to comply with the required EU rules and regulations (*the acquis communitaire*), including the environmental legislation. In terms of industrial pollution, Kosovo has transposed the IPPC Directive in national law (Law N. 03/L-043) in 2009. In addition, it has issued the sublegal act (UA 3/2011) which governs the IPPC application form and documentation. Kosovo today has the legislation framework in place that supports the implementation of the IPPC Directive. That framework includes:

- Law 03/L-043 (the codified version of Directive 2008/1/EC);
- Administrative Instruction UA 3/2011 on the form of the permit;
- Administrative Instruction UA 01/2007 on procedures for development and approval of documents referring to the best possible techniques.

Law 03/L-043 as well as the two administrative instructions specifically address the IPPC permit. Other complementary laws that are necessary to issue the IPPC permit are:

- Law No.2004/24 on Water;
- Law Nr. 02/L-102 on Noise;
- Law No. 02/L-30 or Law No. 04/L-060 on Waste;

- Administrative Instruction UA Nr. 10/2011 (the codified version of Directive 1999/82/EC replaced by Directive 2003/105/EC on the control of major-accident hazards involving dangerous substances);
- Law n. 2004/30 or Law n. 03/L-160 on Air Protection from Pollution;
- Administrative Instruction UA Nr. 15 on Air Monitoring;
- Administrative Instruction UA Nr. 37/07 on Polichlorinated Byphenol;
- Administrative Instruction UA 16.01 on administrative instruction in allowing norms of hazardous substances and harmful presence in soil on soil protection;
- Administrative Instruction UA Nr. 13/2008 (sub-legal act).

However, Kosovo needs to adopt complementary environmental legislation concerning industrial pollution. For instance, Kosovo has transposed the requirements of Directive 2003/105/EU into its own Administrative Directive: UA No. 10/2011. That local administrative directive does not include the requirement that operators of low tier establishments prepare safety management systems (Quaggiato). More importantly, Kosovo needs to complete the secondary legislation which defines important procedures for the IPPC permit. For example, there are no directions setting the process of the IPPC permitting. The working group which was set up to issue the first IPPC permit was composed in an ad-hoc manner, which meant that not all experts participated. In addition, there is no guidance on public participation in the process.

Implementation of Directive 2008/1/EC: the IPPC permit

EU member countries have implemented the IPPC Directive since 1996. Initially, they encountered various difficulties mainly concerning the selection of BAT and other complementary information. Today, EU members have overcome those initial difficulties. Many

of them have procedures and methodologies in place that facilitate the issuing of an IPPC permit (Marineri et al., Karavanas et al., Schultmann et al, Georgopoulou et al.). In addition, to support countries in the implementation of the IPPC permit, the EU provides extensive information about BAT selection in the best available techniques references documents (the BREFs).

However, Directive 2008/1/EC leaves sufficient independence to local authorities to select BATs in order to adopt it to local conditions and specificities. Hence, the main challenge in issuing the IPPC permit today for the authorities is to find the right balance between the BAT recommended by the BREF and the BAT that respects the local needs.

Unlike the EU member-countries, the implementation of IPPC in Kosovo is a new procedure that started only in 2012. Thus, Kosovo authorities have yet to define many aspects of the process (number of members of working groups, procedures, obligations to include in the permit, etc.).

The competent authority in Kosovo dealing with the environment is the Ministry of Environment and Spatial Planing (MESP). MESP is the governmental institution responsible for "the creation and implementation of legislation on general management in the field of Environment, Water, Planning and Construction of Housing" (MESP web). Structurally, MESP is organized in seven departments[i], two institutes[ii] and the Agency of Environmental Protection. The Department of Environmental Protection (DEP) is in charge of issuing the IPPC permit. In the case of the IPPC Directive implementation, MESP is in charge of monitoring the compliance (self-monitoring by operators and inspections by authorities), take enforcement actions if necessary, issue, review, and update the permit conditions (Hesse 17).

Kosovo has 25 operators that need an IPPC permit. The first operator who has applied for such a permit is an operator which processes ferro-nickel. In the time of application, MESP

had issued an administrative direction (UA Nr. 03/2011) concerning the content and the method of application for an integrated permit. The other aspects of the permit, instead, and the process management were being considered.

The IPPC permit includes mainly emissions into air, water and land, prevention and control and accidents, waste prevention and recovery, energy and water use, noise, vibration, heat, odor. Since it covers the whole environment, drafting the IPPC permit requires the consultation of a vast body of legislation on environmental issues and the participation of various experts in water, air and other technical issues. In addition, the process can be time-consuming. Hence, to deal with the process, MESP formed a Working Group composed of five members of various professional backgrounds. Fortunately, the head of the Working Group had decades of experience in the ferro-nickel production industry. His experience turned out to be essential in the process of evaluating the application for the permit.

There were four essential steps or phases during the process. It should be emphasized that the steps were not distinct in that there was not a neat demarcation between them in terms of time. In fact, most of the work was conducted contemporaneously. While parts of the documentation were reviewed, for instance, visits to the installation were also being conducted, negotiations were being carried out with the operators, and so on. To make it clearer for the reader, a brief characterization of the main phases of the procedure is described.

Step 1: Acceptance of application and verification of the documentation

Normally, when MESP receives an application, the operator is immediately notified about it. This begins the process. Within 14 days from the acceptance, the Ministry invites the mayor of the city where the operator is located, the Agency of Environmental Protection, the Authority for the Prevention of Environmental Incidents and other authorities in charge of

issuing environmental permits to participate in the process. In case the application is complete, the process lasts a few months the necessary time to verify the data *in situ* on the bases of Law N. 03/L-043 (the codified version of the IPPC Directive in Kosovo) and the administrative regulation, UA 03/2011. A working group was created, at least during this first application.

If the information is incomplete, the Ministry initiates a process of continuous information exchange with the operator. This was especially so in this case study, as Kosovo had not issued an IPPC permit before. Both the working group members and the operator were not familiar with it. In addition, MESP had yet to issue further guidelines on the procedure. Although the Ministry had the necessary laws to start the implementation of the IPPC permit, it had not yet produced any secondary documents (such as a guideline for applicants) which would help implement the regulations. The guideline can help the operator understand how to apply for an IPPC permit, what type of documentation to include in the application and the level of detail. This would obviate the need to continuously refer to the IPPC permit and the corresponding sub-legal act. Italy provides a good example of practices which go beyond the IPPC Directive. Italy has created specific websites about the IPPC application process containing the information about the IPPC. The operators are also required to apply on line by opening an account and then complete the forms posted by the respective Italian authority. The forms are simplified and the process of application follows a progressive order.

Unfortunately, in Kosovo the operator had to use the regulation, UA 3/2011, as its only guideline. Therefore, the application was paper-based and included more than 600 pages of information. Going through the information was a challenge. After analyzing the documentation, it was clear that the data provided by the operator was incomplete, partial and random. It lacked information on air, water and soil emissions. It lacked sufficient detail on

polluting points and their location (polluting points were identified by coordinates only). The application further lacked a detailed description of the plant's industrial process and the respective polluting points. It did not contain sufficient information about water management (industrial and non-industrial water), the water treatment system, and on waste recycling. Last, there was little information on the methods or frequency to monitor emissions.

Step 2: Reconnaissance of the installation and technical process and identification of possible emission points

This step is technical since specifically related to the reconnaissance of the industrial installation *in situ*. Hence, frequent visits to the installation are necessary. But before the visits, the working group members needed to know the production system, such as the production process, raw material, energy, technology, and management. If the polluting points are not identified in this phase, it becomes much more difficult to later identify and review those polluting points. Hence, it is paramount for the working group members to become familiar with the industrial process.

At this point in the process BREFs become a fundamental tool to assist the Ministry. In the case of ferro-nickel production, "The Reference Document on the Best Available Techniques in the Non-Ferrous Metal Industries" - also known as "the BREF on non Ferrous Metals" - was of great importance. Most important for the working group were the Introduction, the section on General Information and Chapter 9, which refers to the production of Ferro-alloys in general. Section 9.1.4 of the same chapter refers specifically to Ferro-Nickel production. It contains technical information on the production of FeNi from raw material (as was the case with the applicant), the production process and most importantly, it provided consumption and emission levels. Thus, for those who lack expertise in the particular heavy industry, the BREF is the main

source of information to consult. Besides relying on the BREF, it is also useful to consult experts of the field. Fortunately, the head of the WG had extensive experience in this industry which proved to be invaluable during the IPPC process.

While the information obtained by BREFs, experts and other sources is fundamental, the field visits to the installation are decisive. The BREF provides useful information on the sector in general but is not specific to any particular plant, many of which are unique. In Kosovo, the plants were state-owned enterprises under Yugoslavia using older technology. Once privatized, they may have been modified by the new owners, making them even more particular. Thus, it is only through conducting field trips that the Ministry can obtain detailed information on the installation, such as potential emission points, the storage and handling of raw material, and the potential points of contamination.

In addition, the Directive is complex; hence, the operator is not used to certain practices and occasionally has difficulties understanding why certain practices are required. For instance, it may object to increasing the frequency that they monitor emissions. The environmental awareness of the managers may also not coincide with the knowledge required by the Directive. As an example, it was difficult to convince the operator that using an excavator to handle slag in open spaces without any protective coverage could cause airborne dust and, thus, pollution. In brief, the field trips helped to educate the agency about the plant, but also educate the operator about the requirements in the IPPC Directive. Thus, this phase required preparatory research on the industry. This research included consulting the BREF, reliance on experts and successive visits to the field to provide a full perspective of the operator and the potential sources of pollution. It further required interaction and education of the operator about the potential requirements in the permit.

The information obtained during the research and visits constitute the basis on which the Ministry proceeds during the following phase. It means that after identifying the potential emission or polluting points, the working group has to identify the techniques (BATs) to prevent or mitigate their pollution and later, has to establish the emission limit values (ELVs) for each pollutant.

In this phase, in addition to identifying the missing information in the application, the working group was able to identify gaps in Kosovo's legislation. One such example was the lack of laws to define waters according to their proximity to pollution areas. There were also practical issues that presented obstacles to the implementation of the IPPC Directive. Although EU has created a "Twinning Project" which paired Kosovo with experts from different EU countries, it was insufficient. Several Italian experts provided Kosovo with occasional short-term assistance on the IPPC process. It provided valuable information during the permitting process, but their time was limited. It became clear that the IPPC permitting was a "learning by doing" process.

Step 3: Negotiations with the plant operator aiming at obtaining their collaboration to define the obligations to include in the permit

The third and the fourth phases are related to drafting the IPPC permit. The information gathered during the previous phases gives a basis for the Ministry to determine the obligations to include in the permit. Normally the Ministry cannot dictate obligations and regulations for the operator, as there are no deadlines for compliance in the law. Therefore, it was helpful to negotiate on ELVs and other aspects of the permit during continuous meetings between the Ministry and the operator. The need to reduce pollution was clear. Kosovo is one of the most polluted countries in Europe, with nitrogen oxides and carbon dioxide levels several times higher

than the European ELVs (European Commission). Pollution in Kosovo is mainly attributed to the past and present operations of several large industrial activities, which include the applicant.

Step 4: Drafting the permit

During this last step, the Ministry incorporates the conditions agreed with the operator into the permit, in accordance with the law. In our case study, this step is still on-going since the permit has not been issued yet. The company is still completing its application, while the Ministry needs to set the relevant ELVs and the deadlines for the operator to comply.

Challenges

The are many factors which differentiate the capacity of an advanced Western European country to implement the IPPC Directive from the capacity of a developing nation, such as Kosovo. First, the Directive requires the country to balance economics and the environment, which in a developing country is a balance that will rarely favor the environment. Then, the IPPC process can also face other obstacles, such as corruption, inexperience or indifference from the operators or simple issues such as language barriers or a lack of appropriate guidance from the European Union. However, some of the specific challenges that were identified in the process are listed below.

Differences between Western European and Developing Countries

There are several challenges to implementing the IPPC Directive which result from the difference between well-developed countries and less-developed countries. This includes a different balance of power between the industries and the government, higher standards and experience, and greater resource in their universities. For instance, in small developing countries the larger industrial companies are the biggest employers (and sometimes polluters as

well) and have strong formal and informal negotiating power in the country. Thus it is mainly the strong governments in the developed countries that can balance this power. In developing countries like Kosovo such a balance can be difficult.

While there are guidelines to implement the IPPC Directive in general, there are no guidelines aimed specifically at developing countries like Kosovo. The BREF documents provide complementary information on IPPC compliance, but they refer to EU member countries which have already high standards in environmental implementation or experience in the IPPC implementation. In addition, EU countries have experienced universities that can assist by identifying techniques or methods or provide experts to balance the effects of pollution with economic benefits. In Kosovo, the main university would not yet be capable of providing this assistance. Hence, this collaboration between the public sector and its university is not a resource available to the Ministry in Kosovo.

Insufficient Legal Framework

There is also a challenge due to underdeveloped legal standards. One example involved noise pollution standards. Kosovo has adopted the European Directive on Noise and transposed it into national law, but it has yet to adopt any secondary legislation to support that law. Such secondary legislation would divide the territory in acoustic areas which allows the Ministry to decide the level of noise allowed outside the installations. Acoustic zonation of the territory would create maps that divide the territory into homogenous areas based on their use. Without such zones, the Ministry has no basis to set noise emission limits for the areas around large businesses. This becomes more complex when the large businesses are situated in mixed-use areas like in our case study, which is on the edge of a small city.

For Kosovo, following the example of Italy can be helpful. Based on its use, Italy has divided its territory in particularly protected areas, mostly residential areas, mixed-use areas, and extensively residential, mostly industrial and exclusively industrial areas. Then, Italy has decided the noise emission levels per each area/zone (see Table 1). Noise in the protected areas can reach only 45 decibel (dB) while that of the exclusively industrial areas can reach 65dB. In addition, the noise limit values have also varied based on the time of day. In a highly protected area in Italy, the allowed noise levels during the day are 45dB while it is limited to 35dB during the night. (see Table 1). Thus the use of the area determines the level of noise that is allowed in it during day or night.

Hence, to avoid pollution from noise for the areas around large businesses, Kosovo needs to adopt a law or regulation on acoustic zonation of the territory. Such a law or regulation would provide a basis for the IPPC permit to limit noise during the issuing process. Such an acoustic zonation of the territory would allow citizens to understand when their rights on living in a quiet environment are not being respected.

Table 1: Noise emission limits based on territory use in Italy

Zones based on use of territory	Time of reference	
	Day (06:00-22:00)	Night (22:00-06:00)
I particularly protected areas	45 dB	35 dB
II mostly residential areas	50 dB	40 dB
III mixed-use areas	55 dB	45 dB
IV extensively residential areas	60 dB	50 dB
V mostly industrial areas	65 dB	55 dB

VI exclusively industrial areas	65 dB	65 dB

Source: www.Inquinamentoaquistico.it

The lack of a sufficient legal framework also makes it unclear which agency has jurisdiction. Again, an example is found in noise regulation, this time inside the plant. Article 10 of the IPPC Law Nr. 02/L-102 requires Kosovo companies filing Environmental Impact Assessment Report to describe the levels of noise within a plant and the measures that are required to reduce the noise levels. However, there are no legal standards for the noise levels allowed inside the plant. It is also unclear whether this is within the jurisdiction of the Ministry of the Environment or the Ministry of Health.

Insufficient Guidelines for the Applicants

Another challenge arose from the absence of any guideline for the operators who were applying for the IPPC permit. Such a guideline would have provided the applicant with a concise description of the information that the Ministry would need. In the case study, the applicant instead provided considerable documentation, a large percentage of which was not relevant to the application. The lack of such a guideline and the resulting irrelevant documentation required the Ministry staff to spend considerable time going through the documentation.

Inadequate Laboratories and Methodology

A large challenge continues to exist due to the lack of modern laboratories. This limits the ability to monitor pollution and the ability to assure that the lab results are correct. Kosovo, and in fact most Balkan countries, lack modern laboratories equipped with the technology to test for PCBs, Dioxins, furans, and the other substances required by Directive 2008/1/EC. Most of the existing public or private laboratories in Kosovo can test only for a few polluters like CO2 or

NO2 or a limited number of heavy metals. The limitations of these laboratories make it difficult for Kosovo to assess pollution. The inability of labs to test for dioxin, for instance, prevents the environmental inspectors to monitor that chemical.

The applicant for the IPPC permit was using laboratories outside the country. This presents a challenge as well. If the operators are asked to test for a pollutant but Kosovo cannot provide them with a lab, then it can be costly for the operators to use labs outside the country. It also prevents Kosovo from performing any quality control. Thus, the lack of appropriate laboratories prevents Kosovo's regulators from monitoring, preventing or reducing pollution; in fact, it is an obstacle that can lead in the long run to a simple failure to monitor pollution.

Another challenge involves the sampling methodology. There are no rules or regulations which define both the scientific methods to collect samples of the environmental media and the scientific standards to analyze polluters in laboratories. Thus, there are no standards which the issuing agency can rely upon to insist on the frequency, locations, or methods to collect samples from the soil, water, air and other environmental media. At the moment, thus, the operators themselves select the limited number of pollutants they will monitor, using techniques selected by them or their laboratories. This provides a great deal of uncertainty in the reliability of the laboratory results.

In addition, there are no lab standards identified by law or regulation for conducting the analysis on a single pollutant. In other developed countries, such as Italy, the scientific methods of assessment are defined by law. For instance, to measure carbon monoxide (CO), the Italian Region of Venetto requires the operators to use the UNI EN 15058: 2006 standard. The same procedure is followed for each pollutant. In this way, the companies simply follow the legal procedures to monitor the presence of pollutants. In addition, the operator is also guaranteed that

the lab work will be accepted by the regulating agency. At the same time, that regulating agency is assured that the operators are monitoring properly and environment is protected from pollution. It further allows the regulatory agency to compare different polluters, as they will be using the same methodology.

Insufficient Training

The staff's lack of training on the IPPC Directive was also a challenge. It should be said that the EU provides substantial support for the implementation of IPPC in Kosovo. In fact, the EU has a "Twinning Project" with the aim of supporting Kosovo in its legislative implementation. The assistance is provided through experts coming from developed countries, such as Italy. However, this support suffers from several shortcomings. The experts visit Kosovo occasionally, and then only for short periods of time. In the case study, the experts were only present a few days every two months. The experts are collaborative and supportive, but their short presence and language barriers (the experts spoke Italian while the DEP members spoke Albanian: they spoke English among them), limited the benefits of the experts severely.

Expertise and Unique Challenges

In addition, a post-conflict country like Kosovo has only thirteen years separating it from ethnic cleansing and it has been independent for only five years. Expert assistance should accompany the DEP at every step. Kosovo is a country that is being built anew. The experts, however, come from developed countries where most have not encountered issues similar to those found in Kosovo. For instance, in a developed country, the issuing permit might simply require the operator to follow and respect the law, such as in the case of acoustic zonation. Hence, the law provides the entirety of the guidance. In countries like Kosovo, however, most of the laws are not in place. This sometimes brought the Italian experts out of their comfort zone.

Thus, drafting the IPPC permit in Kosovo requires – in addition to technical expertise – creativity. This because the staff needs to answer to various types of questions (not only technological) like the following:

- What happens if pollutants to air, water and soil are being emitted, but it is impossible to take and analyze samples for all but a few compounds? How can the Ministry regulate when the laboratories in the country are limited in what they can test and testing in the laboratories outside the country is costly?
- What happens if an installation is equipped with filters classified as BAT, but it continues to pollute at high levels? For instance, the river next to the installation in question contains no living species, despite the presence of filtration that is BAT. How should the Ministry investigate?
- What happens if the filters are BAT but the operator produces at twice the production for which the filters are rated, thus overwhelming the filters and continuing the pollution?
- How should the Ministry regulate when the operator chooses its own sampling and testing standards? How can the Ministry regulate those standards if the law does not define them or give the Ministry the power to set them?
- How does the Ministry require an operator to reduce emissions in a small and developing country like Kosovo when it is one of the very few large employers in the country?

In brief, in developing countries like Kosovo, the experience that the MESP employees need goes beyond the conventional technical training in environmental media. It also needs training on strategies to deal with pollution in a legislative vacuum. They need training to understand complex issues like IPPC, especially since most of the information is in a foreign language (English) and the Ministry does not provide English lessons. Furthermore, the

MESP employees need also training and assistance to protect the environment even while having one of the lowest salaries in Europe. This can include diplomatic support that raises the importance of environmental regulation in a small country such as Kosovo.

RECOMMENDATIONS

After reviewing the challenges that Kosovo faces while complying with Europe's IPPC Directive, there are some recommendations which can be made for both Kosovo and the E.U.

- The European Union should translate its documents into the languages of candidate countries, including Serbo-Croatian, Macedonian, and Albanian.
- The European Union should create assistance for candidate countries to comply with the IPPC Directive. This can include a manual on how candidate countries can set up an IPPC process, how they can calculate emissions and other technical aspects and then compare them to economical benefits including how to make some of the decisions which are discretionary for the country. Further, there can be training for personnel in the competent authorities in the candidate countries.
- The European Union should continue to provide expert assistance and diplomatic support for the Ministry of Environment in order to reduce pollution.
- Kosovo should either invest in a government laboratory capable of testing for the pollutants its industries create, or collaborate with other Balkan countries to create a single environmental laboratory. This would eliminate Kosovo's need to rely on foreign laboratories or laboratories controlled by the operators.
- Kosovo should either invest in English language training for its Ministry of Environment and Spatial Planning employees, especially those who need to research European BATs and BREFs.

- Kosovo should continue its working group on compliance with the IPPC Directive, but should expand the group to include professionals from other sectors, such as water, air, soil and waste management.
- Kosovo must continue to develop its legislative basis for environmental regulation. This includes noise emission standards and acoustic zonation, standards for sampling methods and frequency, and standards for permissible pollutants. The working group should continue to develop legislative and administrative guidance.
- Kosovo must tie BATs to the appropriate industrial production levels. Many of the industries operate at levels much higher than the pollution control devices are designed to handle. This makes the BATs from the EU relevant only if tied to production levels.
- Kosovo's Ministry of Environment and Spatial Planning should conduct training for its regulators and the operators who have received or will apply for the IPPC permits. The training should instruct the operators on the purpose of the IPPC permit, the procedures for applying and complying with the permit, and on standards set by Kosovo's government on sampling methodology.
- Kosovo should issue a guideline or create a website dedicated to the IPPC Permit application process. Such a guideline or website would assist operators in applying for the permit and specify the information that the application needs. This would reduce the burden on the operator, but also reduce the time that the Ministry needs to review documents.

REFERENCES

BBC News. N.p., n.d. Web. 18 Mar. 2013.

<http://news.bbc.co.uk/2/hi/special_report/1998/kosovo/110492.stm>.

Europe: Summaries of EU Legislation. EU, n.d. Web. 30 Mar. 2013.

<http://europa.eu/legislation_summaries/environment/waste_management/l28045_en.htm>.

CIA, The World Factbook. N.p., n.d. Web. 18 Mar. 2013.

<https://www.cia.gov/library/publications/the-world-factbook/geos/kv.html>.

"Directive 2008/1/EC of the European Parliament and of the Council, of 15 January 2008 concerning integrated prevention and control." *Official Journal of the European Union* 29 Jan. 2008: N. pag. Print.

Denitch, Bogdan. *Limits and Possibilities, the Crisis of Yugoslav Socialism and State Socialist Systems.* Minneapolis: University Of Minnesota Press, 1990. Print.

-European Commission. "Commission Communication on a Feasibility Study for a Stabilisation and Association Agreement Between the European Union and Kosovo*." N.p., European Commission, 23 Oct. 2012. Web.

http://ec.europa.eu/enlargement/pdf/key_documents/2012/package/ks_feasibility_2012_en.pdf.

European Commission: Enlargment. N.p., n.d. Web.

<http://ec.europa.eu/enlargement/policy/conditions-membership/>.

*European Commission: Enlargment, Kosovo**. N.p., n.d. Web. 30 Mar. 2013.

<http://ec.europa.eu/enlargement/countries/detailed-country-information/kosovo/>.

European Commission: Enlargment, Conditions For Membership. N.p., n.d. Web.

<http://ec.europa.eu/enlargement/policy/conditions-membership/>.

European Union. *EEAS Stabilization And Association Process*. EU, n.d. Web. <http://eeas.europa.eu/delegations/kosovo/eu_kosovo/political_relations/stabilisation_and_association_process/index_en.htm>.

EPA, NCEI. "An In-depth Look at the United Kingdom Integrated Permitting System: Exploring Global Environmental Protection Perspectives." 2008. Web. <http://www.epa.gov/osem/integrated/pdf/execsummary.pdf>.

European, Commission. "Integrated Pollution Prevention and Control (IPPC) Reference Document on Best Available Techniques in the Non Ferrous Metals Industries." N.p., European Commission, 2001. Web. <http://eippcb.jrc.es/reference/BREF/nfm_bref_1201.pdf>.

Georgopoulou, E, V Hontou, N Gakis, Y Sarafidis, S Misrasgedis, D P. Lalas, A Loukatos, N Gargoulas, A Mentzis, D Economidis, T Triantafilopoulos, and K Korizi. "BEAsT: a Decision Tool for Assessing the Environmental Benefits and the Economic Attractiveness of Best Available Techniques in Industry." *Journal of Cleaner Production* .16 (2008): 359-373. Print.

Hesse, Johann. "Implementation of ScF, LCP and IPPC Directives in the EU." N.p., European Commission, n.d. Web. <http://www.energy-community.org/pls/portal/docs/760180.PDF>.

- *Inquinamentoaquistico.it*. N.p., n.d. Web. <http://www.inquinamentoacustico.it/classificazione_acustica.htm>.

Jansen, Richard G. "Albanians and Serbs in Kosovo: an Abbreviated History an Opening for the The Islamic Jihad in Europe." N.p., n.d. Web. 18 Mar. 2013. <http://lamar.colostate.edu/~grjan/kosovohistory.html>.

Karavanas, A, A Chaloulakou, and N Spyrellis. "Evaluation of the Implementation of Best Available Techniques in IPPC Context: an Environmental Performance Indicators Approach." *The Journal of Cleaner Production* .17 (2009): 480-486. Print.

López-Gamero, María D., Enrique Claver-Cortés, and José J. Molina-Azorín. "Evaluating Environmental Regulation in Spain Using Process Control and Preventive Techniques." *European Journal of Operational Research* 195(2009): 497-518. Print.

Marineri, M, D Fatta, and M Loizidou. "Implementation of the European IPPC Directive-BAT Guidelines for the Cement Industry in Cyprus." *The Environmentalist* .21 (2001): 115-127. Print.

MESP (Ministry of Environmental Spatial Planning), EPA (Environmental Protection Agency). "Environmental Hotspots in Kosovo." (2011): N. pag. 26

MESP (Ministry Of Environment And Special Planning). N.p., n.d. Web. 28 Mar. 2013. <http://mmph-rks.org/en-us/Home>.

MFAK (Ministry of Foreign Affairs Kosovo). N.p., n.d. Web. 28 Mar. 2013. <http://mfa-ks.net>.

Schoenberger, Harald. "Integrated Pollution Prevention and Control in Large Industrial Installations on the Basis of Best Available Techniques - the Sevilla Process." *Journal of Cleaner Production* .17 (2009): 1526-1529. Print.

Quaggiato, Riccardo. "Twinning Project Presentation: Support to the Ministry of Environment and Spatial Planning of Kosovo." 2012: N. pag. Print.

Schultmann, Frank, Rainer Jochum, and Otto Rentz. "A Methodological Approach for the Economic Assessment of the Best Available Techniques." *Int. J. LCA* 6.1 (2001): 19-27. Print.

Vlajic, Nebojsa. *Develpment of an Environmental Law Curriculum for Kosovo Universities.* University of Montana, 2008. Print

[i] [i] Department of Environmental Protection (DEP), Department of Spatial Planning (DSP), Department of Housing and Construction (DHC), Department of Water (DW), Department of Central Administration (DCA), Department of Procurement (DP), Directorate of National Park " Malet e Sharrit" ("Sharr Mountain")

[ii] [ii] Hydrometeorology Institute of Kosovo, Institute for Spatial Planning, Inspectorate