Integrated Environmental Permitting of iron & steel electric arc furnace installations. Training mission 1

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15	MedClean: Cleaner production in black metallurgy
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17	Presentation: Iron_&_steel_IPPC_permit_example
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Eşleştirme Projesi TR 08 IB EN 03
IPPC – Entegre Kirlilik Önleme ve Kontrol
T.C. Çevre ve Şehircilik Bakanlığı

Eşleştirme Ofis: Tel. 0312 410 1994 Fax. 0312 419 6295
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Agenda
Integrated permits for iron & steel electric arc furnace installations: training mission 1
Act. 4.2.c.1
27th – 30th of November 2012

MS Experts: Jesús Ángel Ocio and Nikolás García (Spain)

Objectives:

- Present and explain the training programme.
- Discuss the reference materials (draft By-Law, generic guides, sector guide, BREFs).
- Visit Asil Çelik and define together the data for mission 2 that the installation will have to collect and provide, and which one not.
- Present & discuss the key parts of the document describing the permit application contents.
- Establish targets & contents of training mission 2.
- Start preparing the materials for mission 2.

AGENDA

Tuesday 27th of November

- 10:00 – 12:30 Presentations on the traning programme and the material which will be the basis for the training:
    - César Seoánez (RTA): training programme, motivation of training
    - Ece Tok (RTA Counterpart):
        - Relevant legislation in the new permitting system
        - Draft By-Law
    - César Seoánez (RTA):
        - Reference materials and how to use them.
        - Implementation of IPPC in Spain, example of consequences for an electric arc furnace iron & steel installation.
- 12:30 – 13:30 Lunch break
- 13:30 – 17:00: Jesús Ángel Ocio and Nikolás García (experts delivering the training):

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- Presentation of the team of Spanish experts delivering the training course.
- Main characteristics of the new permitting system. New features with respect to existing system.
- Use of relevant documents when applying, and when assessing the application: examples.
- Common problems & doubts during permit application preparation & assessment.

Wednesday 28th of November

- 09:30 – 10:30 Presentation of the representative of Asil Çelik, describing the installation.
- 10:30 – 12:30 Visit to the installation, focussed on its environmental performance.
- 12:30 – 13:30 Lunch break
- 13:30 – 17:00 Jesús Ángel Ocio and Nikolás García:
  - Discussion: First impressions on the environmental performance of Asil Çelik.
  - Preparation of training missions 2 & 3 based on the case of Asil Çelik: info needed, and topics of interest for the participants.

Thursday 29th of November

- 09:15 – 12:00 Jesús Ángel Ocio and Nikolás García: Presentation and discussion of the key parts of the document describing the permit application contents.
- 12:00 – 13:00 Lunch break.
- 13:00 – 16:20 Jesús Ángel Ocio and Nikolás García: Discussion on the topics of interest for the participants.
- 16:20 – 16:30 César Seoánez: Summary of this first mission, and key data of training mission 2.
- 16:30 – … Trip back to Ankara.

Friday 30th of November

- Morning:
  - 09:30 – 13:00 Fix targets and detailed contents for the next mission. Work to prepare the next training session materials using the conclusions and info collected of the previous days.
- Afternoon:
  - 14:30 – 16:00 Continuation of the work to prepare the next training session materials using the conclusions and info collected of the previous days.
  - 16:00 – 18:00 Preparation of the mission's report.

SECTOR TRAINING PROGRAMME

General considerations:

The calendar which has been agreed for the missions (training sessions) is the following one:

4.2.c.1 Training sector 2 (iron & steel)	27/11/2012	30/11/2012
4.2.c.2 Training sector 2 (iron & steel)	11/03/2013	14/03/2013
4.2.c.3 Training sector 2 (iron & steel)	14/05/2013	17/05/2013

Topics of interest pointed out by the Turkish experts:

- Presentation of the Integrated Environmental Permits (IEP) By-law, permitting procedure and basic materials.
- One of the objectives should be to provide good advice on how to prepare a good permit application for the given sector. Detailed and extensive discussion about how should be the content of each of the documents of the application file.
- Focus should be thinking specially in the case of existing installations.
- How to take into account also the horizontal BREFs in the assessment, and during the global assessment phase of the permit.
- How to make the global assessment of the media-based reports on emissions, and other reports from other Competent Authorities, in order to prepare the first draft of the IEP.

Methodology:

- The training sessions of mission 1 of each of the sectors will be held at the place where the facility is located.
- The training sessions of missions 2 and 3 of each of the sectors will be held in a Hotel in Ankara.

The Spanish experts will use for the training sessions the specific data of the pilot installation and some examples about issues they consider important to remark based on their experience, proposing in each of the training sessions several exercises to the participants related to the solution of those issues.

MISSION 1: See agenda.

MISSION 2:

Main objective:

- Work together to learn how to prepare the application for the Integrated Environmental Permit.

Preparation:

- Documentation to prepare in the last day of mission 1 by Spanish experts: A template for application form , examples of points they consider important to remark for their complexity or importance during the process of application for the permit and during the public consultation period.

- Twinning office: Translation of the training material into Turkish.

The following focus/contents were agreed (in the case of missions 2 and 3 the exact time distribution is left more open to the criteria of the Spanish experts who will deliver them):

- Detailed and extensive discussion about how should be the content of each of the documents of the IEP application file.

- Work together to check the problematic points of the IEP application. The experts will have prepared in addition, as exercises or just to comment them, several typical problems that are faced when the application is received, to put them as examples.

- Feedback from the public consultation period.

The fourth day will be devoted by the Spanish experts to prepare the next training session materials using the conclusions of the previous days.
The Turkish team considers specially interesting the case of existing installations, more than of new ones. The examples and experience from Spain will be very useful.
The expected outcome of mission 2 is an example of how could be the IEP application of the pilot installation.
Additionally, from the experience of this mission, the Spanish experts may check if some parts of the guides used may be improved.

MISSION 3:

Main Objective:

- Work together to learn how to prepare the Integrated Environmental Permit.

Preparation:

- Documentation to prepare in the last day of mission 2 by Spanish experts: A template for the permit, examples of points they consider important to remark for their complexity or importance during the process of giving the permit

- Twinning office: Translation of the training material into Turkish.

The following focus/contents were agreed (in the case of missions 2 and 3 the exact time distribution is left more open to the criteria of the Spanish experts who will deliver them):

- Make an explanation on what aspects should the permit include and learn how to include those aspects.
- The experts will propose some exercises relative to the preparation of the emissions reports, to learn how to use the BREFs, guides and BAT Conclusions Documents as a reference. Specific request: how to take into account also the horizontal BREFs in the assessment, and during the global assessment phase of the permit.
- EIA and IEP, conflict resolution.
- How to make the global assessment: how to coordinate the reports, flow of information, and possible meetings with the competent divisions or authorities for the reports.

Twinning Project TR 08 IB EN 03

Integrated Environmental Permitting of iron & steel electric arc furnace installations

Mission 1: Basis of the training

Ece Tok – Resident Twinning Adviser Counterpart
Cesar Seoanez – Resident Twinning Adviser
Jesus Angel Ocio – Expert
Nikolas Garcia-Borreguero – Expert

Outline

- Motivation, programme (César)
- IEP draft By-Law & other legislation (Ece)
- Reference materials, investments (César)

Motivation: IED implementation not easy!

- New (additional) legislation and reference documents
- More demanding environmental standards
- Investments to modernise/adapt

Reference Legislation

- EU: IED 2010/75/EU , Chapters I & II
- Turkey:
  - ✓ IEP (draft) By-Law

Training programme

- 3 missions:
  - ✓ M 1 (27-29 nov): introduction, materials, basis for missions 2 & 3
  - ✓ M 2 (18-20 march): Preparation of a good permit application
  - ✓ M 3 (14-17 may): Assessment & preparation of a good permit
- M1 didactic , M2 & M3 interactive

Training programme

- Objectives of mission 1:
  - ✓ Explain training programme
  - ✓ Discuss reference materials (by-law, guides, BREFs)
  - ✓ Visit Asil Çelik, see what parts of application can/cannot be completed
  - ✓ Review together permit application contents
  - ✓ EU experts:
    - Establish targets & contents of mission 2
    - Start preparing materials for mission 2

Training programme

- Objective of mission 2:
  - ✓ Improve quality of permit applications
- Method:
  - ✓ Interactive, with exercises & discussion
  - ✓ Use examples of permit application
  - ✓ Based on characteristics of pilot plant, and other EU plants
  - ✓ Example of completed permit application will be provided

Training programme

- Objective of mission 3:
  - ✓ Improve assessment of permit applications
- Method:
  - ✓ Interactive, with exercises & discussion
  - ✓ Focus on new/problematic aspects of the procedure
  - ✓ Based on characteristics of pilot plant, and other EU plants
  - ✓ Example of IPPC permit will be provided

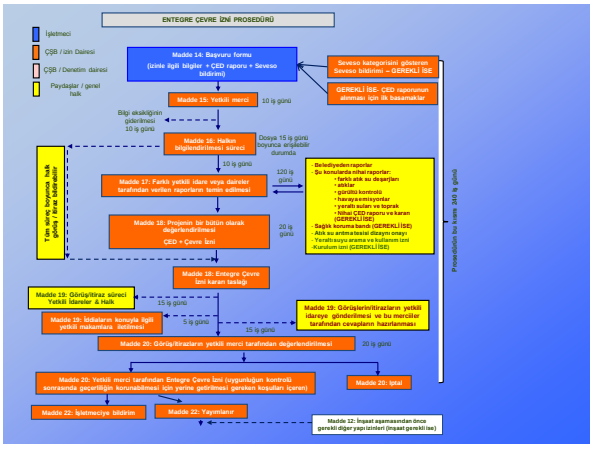
Training programme

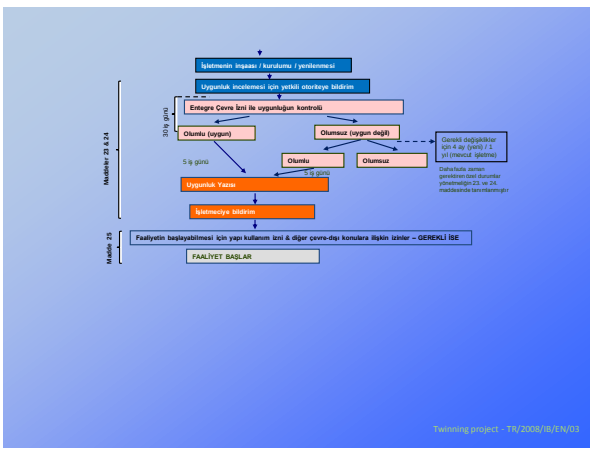
- Agenda in Bursa, mission 1:
  - ✓ Today:
    - Training overview
    - Reference materials & concepts overview (legislation, guides, BREFs, some key aspects of IEP implementation)
  - ✓ Tomorrow:
    - Presentation & visit Asil Çelik
    - First conclusions. Info to prepare missions 2 & 3
  - ✓ Thursday:
    - Permit application document: explanations

Taslak Yönetmelik

İÇERİK

-Amaç, Kapsam, Dayanak, Tanımlar
-Entegre Çevre İznine İlişkin Genel Esaslar
-Entegre Çevre İznine İlişkin Yasal Prosedür
--Amaç ve Uygulama
--Entegre Çevre İzni Başvurusu ve İznin Verilmesi
--Denetim ve yaptırımlar
-Geçici Maddeler
-Yürürlük
-Yürütme
38 Madde 5 Ek





Taslak Yönetmelik

-Entegre çevre izni sürecinde yer alan Yetkili merci,idareler arasında koordinasyon ve işbirliği esasları
-Entegre çevre iznine tabi işletmeler ve faaliyetlerin kurulması, işletilmesinde ve kapatılmasında uyulması gereken esaslar ve işletmecilerin yükümlülükleri
-Çevre kalite standartları (Alıcı ortam kriterleri)
-Bilgiye erişim ve izin prosedürüne halkın katılım esasları
-Yeni kurulacak işletme/faaliyetler için ÇED ve entegre çevre izni sürecinin eş zamanlı yürütülmesi için esasları

içerecek şekilde kurgulanmıştır.

Taslak Yönetmelik

Entegre çevre iznine tabi işletmeler/tesisler /faaliyetler
1.Enerji üretimi,
2.Metal üretimi ve işlenmesi
3.Mineral endüstrisi
4.Kimya endüstrisi,
5.Atık yönetimi,
6.Diğer faaliyetler (tekstil, kereste üretimi, ağaç işleme, deri işleme, mezbahane, gıda ve hayvan yemi üretimi, kümes hayvancılığı, karbon üretimi)
Mevcut Çevre izin Lisans Prosedürüne tabi işletmeler listesi ile Entegre Çevre İzni kapsamında yer alacak işletmeler listesinin tek liste haline getirilerek,bu kapsamdaki işletme/faaliyetler için izin prosedürünün birleştirilmesi ,
Entegre Çevre İzni kapsamı dışında kalan işletmeler için izin gerekliliği veya kayda alma,izleme, kontrol esaslarına dayalı bir prosedür oluşturulması hususlarının değerlendirilmesi gerekmektedir.

Taslak Yönetmelik

Entegre çevre izninin amacı

•Çevrenin bütün olarak korunması için;
– entegre kirlilik önleme ve kontrol sistemi oluşturarak hava, su ve toprağa yönelik sanayi kaynaklı emisyonları önlemek veya önlenemediği durumlarda azaltmak ve atık oluşumunu azaltmak,

•Entegre çevre izin işlemleri ilgili adımları hızlandırmak ve izin başvurusu yapanların idari yükünün azaltılması için;
– iznin verilmesi sürecine dahil olan çeşitli resmi makamlar arasında koordinasyonu sağlayan bir prosedür aracılığıyla, yönetmelik kapsamındaki işletmelerin bu Yönetmeliğin hüküm ve esaslarına uygunluğu sağlayan koşulların tamamını ortaya koymaktır

Taslak Yönetmelik

işletmelerin kurulması ve işletilmesindeki genel ilkeler;
•Çevrenin bir bütün olarak korunması için mevcut en iyi tekniklerin (MET) uygulanarak kirliliğin önlenmesi için gerekli tüm tedbirlerin alınması,

•Atık olusumunun önlenmesi, azaltılması veya atığın olustugu durumlarda atığın, yeniden kullanım, geri dönüşüm, geri kazanım işlemleri için hazırlanması ya da bunun teknik ve ekonomik olarak mümkün olmadığı durumlarda atığın, çevre üzerindeki her türlü etkiyi önlemek veya azaltmak suretiyle bertaraf edilmesi,

•Enerji, su, ham madde kaynakları ve diğer kaynakların verimli kullanılması,

• Faaliyetlerin kesin olarak sona ermesi durumunda kirlilik riskinin önlenmesi ve faaliyet sahasının yönetmelikte tanımlandığı hale getirebilmesi için gerekli tedbirlerin alınması,
Gerekmektedir.

Taslak Yönetmelik

İzin sürecinin çevresel etki değerlendirmesi raporunun Bakanlığa sunulmasından sonra başlaması,ÇED Olumlu kararı alınması halinde sürdürülüp, sonuçlandırılması,

İşletme inşa edilmeden önce izin sürecinin tamamlanması esas alınması

Tek bir sınır değer yerine,MET Sonuç Belgelerinde yer alan emisyon düzeyleri uygulaması (The **BAT-associated emission levels)**

İzin Koşullarının işletmeci ve ilgili taraflar ile müzakere edilmesi (Md18/19)

Yetkili merciinin tüm süreci koordine etmesi

Taslak Yönetmelik

YÜRÜRLÜK

Yeni Tesisler için Yönetmelik hükümleri yönetmeliğin yayımı tarihinden itibaren 3 yıl sonra yürürlüğe girer.

Mevcut tesisler yönetmeliğin yürürlük tarihinden itibaren en geç 10 yıl içinde, bu Yönetmelik hükümlerine göre entegre çevre izni almakla yükümlüdürler.(mevcut tesisler için 13 yıl geçiş süreci öngörülmüştür.)

Reference materials

- EU:
  - ✓ Iron & steel BREF
  - ✓ Ferrous metal processing BREF
  - ✓ Other BREFs

  } Explanations later
- Turkey:
  - ✓ National BAT iron & steel EAF installations
  - ✓ Basic guides:
    - ❑ For industry: good permit application
    - ❑ For MoEU: good assessment of application

Reference materials

- National BAT guide for iron & steel EAF installations:

- ✓ Focusses EU BREFs to Turkish sector
- ✓ References to BREF
- ✓ Ch. 5: monitoring & control
- ✓ Annexes: including check-lists
- ✓ Shorter, easier & adapted to "all publics"

1. Beginner **: READ FROM THE BEGINNING**.
2. Iron & steel expert : **START IN CHAPTER 4** , and if doubts, see ch. 2, and the two BREFs.

Iron & steel EAF guide

II. Objectives:

1. Overview of the sector in Turkey (Chapters 1 and 3).
2. Describe the processes, technologies and techniques (Chapter 2)
3. Discuss the BATs and some emerging techniques (Chapters 4 and 6)
4. Discuss the available tools and methods to monitor and control (Chapter 5)

- ***It includes info about BATs from the 2 relevant BREFs in Ch. 4***
- ***This guide should constitute a reference for the staff of the MoEU and for the iron & steel EAF installations' representatives.***
- ***This guide IS NOT A LAW that establishes emission limit values (ELVs)***

Iron & steel EAF guide

- Ch. 4: BATs & BAT AELs

4.1.4 Benimsenen MET sonuç bildirgeleri

Aşağıdaki sonuç bildirgeleri benimsenmiştir:

4.1.4.1 Ham malzeme ve (ara) ürünlerin depolama, dağıtım ve nakliyesinden kaynaklanan dağılma (diffuse) türü toz emisyonları

Aşağıda bahsi geçen tekniklerden birini veya bu tekniklerin bir kombinasyonunu kullanarak malzemelerin depolanması, işlenmesi ve nakledilmesinden kaynaklanan yaygın toz emisyonlarının önlenmesi veya azaltılması BAT'tır.

Azaltma tekniklerinin kullanıldığı durumlarda, aşağıda bahsi geçenler gibi uygun tekniklerle yakalama verimliliğini ve bunun akabinde gerçekleştirilen temizlik işlemlerini optimize etmek BAT'tır. Öncelik kaynağa en yakın konumda bulunan toz emisyonlarına verilir.

I. Genel teknikler şunları içermektedir:

- Konu ile ilgili olan bir yaygın toz eylem planının çelik tesislerinin Çevre Yönetim Sistemleri (ÇYS) kapsamında oluşturulması

Iron & steel EAF guide

- Ch. 4: BATs & BAT AELs

4.9 EAF İLE İLGİLİ PROSESLER ÜZERİNE MET'LER: SICAK HADDELEME, SOĞUK HADDELEME, FİLMAŞİN TESİSLERİ VE LEVHA GALVANİZLEME

4.9.1 Sıcak Haddeleme Makinesi

Ham maddelerin ve yardımcı maddelerin depolanması ve işlenmesi için aşağıdaki tekniklerin MET olduğu düşünülmektedir:

Iron & steel EAF guide

- Ch. 5: Monitoring & control
  - ✓ Example: Good practices, principles:

İzleme Genel Esasları İyi Uygulama Referansı	
1	**"Neden" izleme** Başlangıçta gözlemin amacını belgelemek ve bu belgeleri sistematik bir denetim altında tutmak iyi bir uygulamadır. Bu bilgi bir gözlem programı boyunca amaçlar, yükümlülükler, elde edilen bilginin kullanımını ve bu bilgiyi kullananların dikkatini kapsayabilir. İzlemedeki iki temel neden; – Uygunluk değerlendirmeleri ve Emisyon Limit Değeri dahilindeki emisyonları kontrol etmek – Uygunluk değerlendirmeleri, emisyonların ELDnin içinde olduğunu kontrol etmek – Genel olarak çevresel kirlenmeye karşı belirli bir işletmenin katkısını saptamak Diğerleri; emisyon envanteri için raporlama, Mevcut En İyi Tekniklerin değerlendirilmesi, çevresel etkilerin değerlendirilmesi, süreçlerin optimizasyonu ,... olabilir.

Iron & steel EAF guide

- Ch. 5: Monitoring & control
  - ✓ Example: Criteria to monitor air emissions:

Süreç	Parametre	Sıklık	Yöntem
Ham maddeler ve atığın işlenmesi (curuf vet oz işlemesi)	Partikül madde	Günlük	Sürekli gözlem ve yıllık salım tahmini
EAF/İkincil metalbillim	Partikül madde	Sürekli	CEMS[2]
	Partikül madde CO NOx SO2 HF, HCl, Cl PCDD/F Metaller (Zn, Pb, Ni, Hg, Cu, Cr, As, Cd) NMCOV	Yılda 1 kez	Periyodik izleme
	PAH, PCB	Yılda bir kez ve sonar uygun görüldüğünde	Periyodik izleme
Vakumlu gaz giderici baca	Metaller	Yılda 1 kez	Periyodik izleme
EAF tesisleri	Nokta kaynaklı olmayan partikül emisyonu.		Sürekli gözlem & yıllık salım tahmini

Iron & steel EAF guide

- Annexes:

	KONU	BREF BÖLÜMÜ
1	EAO (Elektrik Ark Ocağı) proses optimizasyonu	8.3.1
Havaya salınan emisyonlar ile ilgili MET'ler		
2	Gelişmiş emisyon toplama sistemleri	8.3.4, 9.7
3	Elektrik ark ocaklarından havaya salınan birincil ve ikincil emisyonların azaltılması ile ilgili teknikler	8.3.5, 9.7
4	Cüruf işlemeden kaynaklanan toz emisyonlarının azaltılması	8.3.3, 9.7
Benimsenen MET sonuç bildirgeleri		
5	Ham malzeme ve (ara) ürünlerin depolama, dağıtım ve nakliyesinden kaynaklanan dağılma (diffuse) türü toz emisyonları	9.1.5, 9.7
6	Civa emisyonlarının engellenmesi	9.7
7	Birincil ve İkincil tozsuzlaştırma	9.7
8	Cüruf işlemeden kaynaklanan toz emisyonları	9.7
Su ve atık sulara salınan emisyonlar ile ilgili MET'ler		
9	Sürekli dökümden kaynaklanan atık suların arıtılması	8.3.6
10	Kapalı devre su soğutma sistemi	8.3.7
11	Benimsenen MET sonuç bildirgeleri	9.1.6, 9.7
Katı atık ve yan ürünleri ile ilgili MET'ler		
12	Ağır metallerin geri kazanımı için EAO tozlarının işlenmesi	8.3.8
13	EAO'da cüruf işlenmesi	8.3.9
14	Yüksek alaşımlı ve paslanmaz çelik EAO cürufunun işlenmesi	8.3.10
15	Benimsenen MET sonuç bildirgeleri	9.1.4, 9.7

Iron & steel EAF guide

- Annexes:

EK 2. EN İYİ KULLANILABİLİR TEKNİKLER (BATS) İLE İLİŞKİLİ EMİSYON SEVİYELERİ

ELEKTRİKLİ ARK OCAĞI ÇELİK YAPIMI VE DÖKME

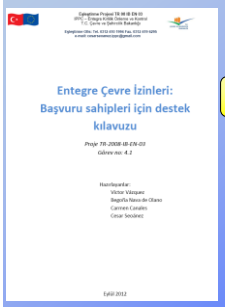
Elektrikli Ark Ocağı Çelik Yapımı ve Dökme için BAT Sonuçları.

- Su buharı içeriği çıkarıldıktan sonra, g/Nm 3 , mg/Nm 3 , µg/Nm 3 veya ng/Nm 3 cinsinden ifade edilen, standart koşullar altındaki (273,15 K, 101,3 kPa) atık haz hacmi başına salınan maddelerin kütlesi
- g/l, mg/l veya µg/l cinsinden ifade edilen, atık su hacmi başına salınan maddelerin kütlesi

En İyi Kullanılabilir Teknikler / BAT hakkında ayrı görünümler	BAT ile ilişkili emisyon seviyeleri
Birincil ve ikincil tozdan arındırma	
Aşağıda listelenen tekniklerden biri kullanılarak tüm emisyon kaynaklarının etkin bir şekilde çıkarılması ve bir torba filtre kullanılarak müteakip tozdan arındırmanın kullanılması: I. Direk gaz çıkarma (4. veya 2. delik) ve davlumbaz sistemlerinin bir birleşimi II. direk gaz çıkarma ve brülör odacığı sistemlerinin kullanılması III. direk gaz çıkarma ve tam bina tahliyesi (düşük kapasiteli elektrikli ark fırınları (EAF) aynı çıkarma etkinliğini elde etmek için direk gaz çıkarmaya İhtiyaç duymayabilirler).	BAT ile ilişkili genel ortalama toplama etkinliği >%98'dir. Toz seviyesi: <5 mg/Nm3, günlük ortalama değer olarak tespit edilir. Civa seviyesi: <0.05 mg/Nm3, numune süresince ortalama olarak hesaplanır (kesintili ölçüm, en az dört saatlik anlık numuneler)

Basic guide for industries

- Goal: provide enough info to prepare a good application


Entegre Çevre İzinleri:
Başvuru sahipleri için destek kılavuzu

- Contents:
  - Intro to IEP & IED
  - Permit application contents
  - Review and update of permit conditions
  - Permitting procedure
  - Explanations of some concepts of IEP by-law
  - Annexes: IEP contents & Installations under the scope of IEP by-law

Basic guide for industries

- Permit application contents:
  - ✓ Generic, for all kinds of industry
  - ✓ Thursday: detailed review of an adaptation to iron & steel installations
- Review and update of permit conditions:
  1. Duration of permit (art. 28 of By-Law)
  2. Criteria defining "substantial change"
     - Addition of non-substantial changes may lead to substantial one

Basic guide for industries

- Explanations of some concepts of IEP By-Law:
  1. Equivalent parameters and technical measures
  2. General Binding Rules
  3. Environmental Quality Standards
  4. Ownership cases
  5. Flexibility to modify ELVs
  6. Assessment as a whole of environmental impacts
  7. "Compounds" of Annex II

Basic guide for industries

- Annex I: structure of permit

EK 1. ENTEGRE ÇEVRE İZNİ İÇERİĞİ

1. Genel bilgiler
   1.1. Yasal çerçeve
      1.1.1.İznin verilmesi konusunda uygulanan mevzuat
      1.1.2. İznin geçerliliği (süresi)
      1.1.2.1. İstisnai durumları kapsayacak
      1.1.3.Diğer izin ve lisanslar (Entegre Çevre İzninden önceki)
   1.2. Sürece dahil olan Yetkili Otoriteler
   1.3. Uzun menzilli veya sınırötesi kirliliğin minimizasyonuna ilişkin hükümler
2. Tesisin tanımı
   2.1. Tesisin ismi[28]

- Annex II: installations under scope of By-Law (clarifications)

Basic guide for MoEU's staff

- Goal: provide enough info to assess properly the application
- Overlaps with guide for industries
- Differences:
  - No permit application contents,
  - Instead Annex 2, check-list of those contents
  - 3.2 Explanations of docs to be presented by the operator
- Suggestions for improvements welcome


Entegre Çevre İzinleri: Çevre ve Şehircilik Bakanlığı personeli için destek kılavuzu

Investments in iron & steel EAF installations

- Spain
  - ✓ Study post-implementation of IPPC (2008-2009)
    - ❑ From 33 installations 6 answered, average 42 million €
  - ✓ Example of installation in Madrid, BATs to get IPPC permit
- MedClean study cases in several european countries

Investments in iron & steel EAF installations

	Doküman
1	Gündem
2	Sektör eğitim programı
3	Sunum: Elektrik ark ocaklı demir & çelik tesisleri ve Entegre Çevre izinleri. Eğitimin temeli.
4	Sunum: Entegre ruhsat başvurusu temel prensipleri
5	Ruhsat başvuru içeriği. Elektrik ark ocaklı demir & çelik tesisleri
6	Izin başvuru dosyasinin değerlendirilmesi esnasinda kullanilacak kontrol listesi
7	Izin koşullarini oluştururken dikkate alinmasi gereken bref'in ilgili bölümleri
8	En iyi kullanilabilir teknikler (bats) ile ilişkili emisyon seviyeleri
9	MedClean: Bir metal endüstrisi şirketinde kesme yağlarının geri dönüşümü
10	MedClean: Metal parçaların üretiminden trikloretilenin elenmesi
11	MedClean: Eritken giderim banyolarının ısıtılması için batırma kompakt boruların kurulumu
12	MedClean: Kimyasal yüzey temizlemeden titreşimli yüzey temizlemeye geçiş
13	MedClean: Elektrokimyasal nikel kaplama prosesinden üretilen durulama suyunun vakumlu evaporatör kullanımıyla geri dönüştürülmesi
14	MedClean: Siyah metalürjide daha temiz üretim
15	MedClean: Metal işleme endüstrisinde daha temiz üretim
16	Sunum: demir çelik tesisi -bir IPPC izni örneği-
17	Entegre Çevre Izni prosedürü

Investments in iron & steel EAF installations

- Example: installation in Madrid, BATs to get IPPC permit
  - ✓ Steelworks building: Maintenance of building´s enclosure to prevent diffuse emissions.
  - ✓ Improvement of the building for the slag storage.
  - ✓ Improvement of the slag cooling to prevent diffuse emissions.
  - ✓ Rain water drainage system: Implementation of a suspended solid precipitator and oil separator system.
  - ✓ Closed loop water cooling system: Improvements in the decanter.
  - ✓ Storage in a paved area with roof and 3 walls to avoid diffuse emissions.

~~Investments~~ Savings in iron & steel EAF installations

- MedClean study cases in several european countries
  - ✓ Recycling of cutting oils to reduce waste
  - ✓ Replacement of trichloroethylene
  - ✓ Improved heat exchange systems for heated baths
  - ✓ Replacement of chemical pickling by pickling by vibration
  - ✓ Vacuum evaporator to reuse nickel plating bath
  - ✓ Sand blasting instead of chemical preparation of wire
  - ✓ Improvement of zinc plating & monitoring of consumptions
  - ✓ Considerable and immediate money savings

Any questions?

Teşekkürler!

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INTEGRATED ENVIRONMENTAL PERMIT APPLICATION

GENERAL CONCEPTS

Outline

- Presentation of the team
- Objective, basis and evolution of the legislation
- Integrated Environmental Permit.
  - Basis
  - Application for the IEP
  - Writting the permit: Setting conditions and ELVs
  - General conditions of the permit
- Overview of the electric arc furnace steelmaking process

TEAM

- Nicolas García-Borreguero
  - Industrial Engineer
  - Basque Government. Head of the Air emissions and Noise Unit
  - Senior permit writer of permits
  - 10 years experience in environment
- Jesús Angel Ocio Armentia
  - Chemist PhD
  - Basque Government. Head of the Environmental Inspection Unit
  - Senior permit environmental inspector
  - 10 years experience in environment

European legislation: Objective, basis and evolution

Integrated Pollution Prevention and Control (IPPC) in the UE

- EU IPPC Directive 96/61 on September 24th 1996,
- Codified by EU IPPC Directive 2008/1/EC on January 15th 2008,
- Recast by EU Industrial Emissions Directive 2010/75/UE on November 24th 2010.

Abbreviations

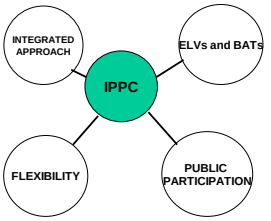
IPPC – Integrated Pollution Prevention (and) Control,
BAT – Best Available Techniques,
BATC – BAT Conclusions,
BREF – BAT Reference documents,
ELV - Emission Limit Values,
EIA – Environmental Impact Assessment
IED- Industrial Emissions Directive

EU IPPC
Objective and principles

Objective

To prevent or to reduce emissions to air, water and land and measures concerning waste for the installations with higher pollution potential.

Principles



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Integrated approach

- High level of protection of the environment as a whole
- Integrated Environmental Permits for sites with highest pollution potential (about 52.000 in Europe)
- Whole environmental performance of the plant, covering
  - Emissions to air, water and land
  - Generation of waste
  - Use of raw materials
  - Energy effciency
  - Noise
  - Prevention of accidents
  - Protection of soil
  - Restoration of site upon closure

8

Flexibility

Allowing the permitting competent authorities, in determining permit conditions, to take into account:

- the technical characteristics of the installation,
- its geographical location and
- the local environmental conditions.

9

Public participation

Having acces to

- permit applications in order to give opinions,
- permits,
- results of the monitoring of releases
- environmental inspections reports and
- the European Pollutan Release and Transfer Register (E-PRTR), former EPER

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ELV and BAT

Permit conditions, including Emission Limit Values (ELVs), must be based on BATs

- Best - in relation to techniques, means the most effective in achieving a high general level of protection of the environment as a whole,
- Available - those techniques developed on a scale which allows implementation in the relevant class of activity under economically the technically viable conditions, taking into consideration the costs and advantages,
- Techniques - includes both the technology used and the way in which the installation is designed, built , managed, maintained, operated and decommissioned.

In practice, BATs are those techniques which are found in BREFs and defined as such.

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EU IED (2010)

Recast of seven directives

- **Chapter II IPPC**
- Large Combustion Plants
- Waste Incineration
- Solvents emissions
- Titanium Oxide (3 directives)

Important changes

- Introduce environmental inspection as principle
- Reduce flexibility
- ELVs based on BATCs obligatory

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Integrated Environmental Permit
IEP Basics

Integrated Environmental Permit
What is it?

- Integrated permit is a form of licence for operating an industrial installation,
- It is obligatory for installations listed in Appendix I of Industrial Emissions Directive – 6 groups of installations,
- It has replaced different sectoral environmental permits (air, water, soil etc.) and combined them into one showing interrelations.

IEP
Important for the operator

- ELVs are established on the basis of:
  - BATC documents or BREFs' BAT conclusion chapters,
  - national legislation, if "national" limits are more restrictive than above, or refer to pollutants or parameters not covered in BATC documents.
- New elements in Integrated permit application:
  - Baseline report – not applicable for every installation,
  - SEVESO statement – classifying the installation

IEP
Important for the operator

- No more "Temporary Activity Certificate"; IEP must be granted before any other authorization or permit needed to start the construction or operation
- In the preparation of the permit application, the operator will have to assess which BATs are in place in the installation, or are previewed to be implemented,
- The permitting procedure includes more possibilities for the public to participate and provide comments which will be taken into consideration by the Competent Authority.

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IEP
Aspects that have caused problems

- Is the IEP for the installation or for the site?
  - Case of Germany
  - Case of Spain
- Scope of the Directive, mainly chapter II
  - Example of Surface treatment
  - Nominal capacity of the furnace vs production line.
- Administrative procedure differences for existing and new installations
  - Definition of new and existing
  - Differences in procedure

17

IEP
Aspects that have caused problems

- Difficulties with identifying IPPC installations:
  - Flow of information between authorities,
  - Who should identify them?
  - There are still new appearances,

18

IEP
Application

IEP
Content of the application

Content of the application can be divided into 3 main parts:

- Kind of installation,
- Project report,
- Other documents different from the project report.

IEP
Application- kind of installation

This is a very short part of the application but a very important one. Improper classification can cause rejection of the report by the authority.

- Suggestion: to avoid missunderstandings, at the beginning indicate the exact number and copy the name of the installation as listed in Appendix I of IED, like:

2.2. Production of pig iron or steel (primary or secondary fusion) including continuous casting, with a capacity exceeding 2,5 tonnes per hour

IEP
Application- Project report

- The longest, most complex and relevant part of the application – takes a looot of time to prepare it,
- Needs a lot of care when collecting data as it will affect the final Integrated permit – possible mistakes or omissions can cause problems,
- Involve laboratories to collect data for this part.

IEP
Application- Other documents

- EIA report –mentioned,
- Urban report – evidencing compatibility of the project with urban planning provisions,
- Baseline report – where applicable,
- Identification of confidential data,
- Non-technical summary,
- Other documents (see „Integrated environmental permits: Supporting guideline for the applicants" – page 29.

IEP
Other documents Baseline report

- use, production or release of relevant hazardous substances due to possibility of soil and groundwater contamination
- Report submitted before starting operation of an installation or before a permit for an installation is updated for the first time after new provisions come into force,
- The baseline report shall contain the information necessary to determine the state of soil and groundwater contamination so as to make a quantified comparison with the state upon definitive cessation of activities.

IEP
Content of the baseline report

- information on the present use and, where available, on past uses of the site;
- where available, existing information on soil and groundwater measurements that reflect the state at the time the report is drawn up or, alternatively, new soil and groundwater measurements having regard to the possibility of soil and groundwater contamination by those hazardous substances to be used, produced or released by the installation concerned.

IEP
Content of permit

- appropriate requirements ensuring protection of the soil and groundwater and measures concerning the monitoring and management of waste generated by the installation;
- appropriate requirements concerning the periodic monitoring of soil and groundwater in relation to relevant hazardous substances likely to be found on site and having regard to the possibility of soil and groundwater contamination at the site of the installation

IEP
After definitive cessation of activity

- operator shall assess the state of soil and groundwater contamination by relevant hazardous substances used, produced or released by the installation. Where the installation has caused significant pollution of soil or groundwater by relevant hazardous substances compared to the state established in the baseline report, the operator shall take the necessary measures to address that pollution so as to return the site to that state. For that purpose, the technical feasibility of such measures may be taken into account.
- where the contamination of soil and groundwater at the site poses a significant risk to human health or the environment as a result of the permitted activities carried out by the operator shall take the necessary actions aimed at the removal, control, containment or reduction of relevant hazardous substances, so that the site, taking into account its current or approved future use, ceases to pose such a risk.

IEP
Aspects that have caused problems

- Several countries have had problems to comply with the deadlines to give the permit, to avoid them some aspects to consider are:
  - Scheduling for example different deadlines
  - Plan and assure the technical trained staff for the different deadlines
  - Plan the procedures as automatic as possible
    - Standards applications
    - Electronic applications if possible
    - Informatic tools to automatize process.
  - Prepare administrative procedure for the modification of installations.

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IEP
Aspects that have cause problems

- Ommiting data or wrong data according to IPPC installations:
  - Incomplete waste catalogue,
  - Undervalued values: production, air pollution, waste and waste water etc.
- Incomplete application,
- High cost of preparing the application by the external company, especially at the beginning

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IEP
Setting conditions and ELVs

30

IEP
Setting ELVs based on BATs

- BAT associated emission level values (ELV) indicate levels achievable through the use of a combination of the process techniques and abatement technologies ensuring a high level of protection for the environment as a whole.
- ELVs can be found in BATC documents or in BREFs'BAT conclusion chapters.
- ELVs from BATC documents will be obligatory,
- ELVs that can be found in "old" BREFs will be used as a reference only.
- Not ELVs on greenhouse gases

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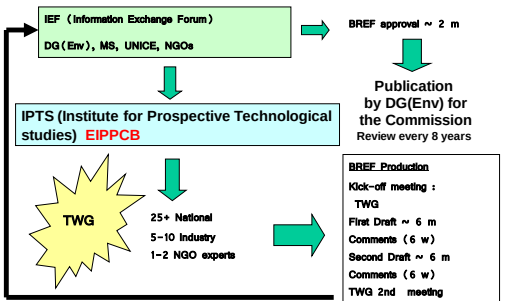
Information exchange process



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Where to find BATs?

- BREFs – BAT reference documents
- Curently 33 BREFs and ~50 BAT guidances

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BREF

- BREFs are the BAT Reference documents being a result of an exchange of information organized by the European Integrated Pollution Prevention and Control (IPPC) Bureau,
- BREF may be used by integrated permit writers, operators and public,
- The BREFs inform the relevant decision makers about what may be technically and economically available to industry in order to improve their environmental performance and consequently improve the whole environment.

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BATC

- **BATC** – BAT conclusions - document containing the parts of a BAT reference document laying down the conclusions on best available techniques, their description, information to assess their applicability, the emission levels associated with the best available techniques, associated monitoring, associated consumption levels and, where appropriate, relevant site remediation measures,
- BAT conclusions will be obligatory for the operators to ensure the same conditions for them in different EU countries,
- So far – BATC for iron and steel industry and glass industry.

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BREFs relevant to the Electric arc Steelmaking Industry

- Iron and Steel production (2012)
- BATC for iron and steel production (2012)
- Ref. document on General Principles of Monitoring (2003)
- Emissions from Storage (2006)
- Energy Efficiency (2009)

English: Available at http://eippcb.jrc.es/reference/ .

Turkish: Available upon request

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Control

- Specify: method, frequency and evaluation procedure
- Report every year results of controls and other data
- Control at least every 5 years for groundwater and every 10 years for soil, unless such monitoring is based on a systematic appraisal of the risk of contamination.

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IEP
Aspects that have caused problems

- Understanding of BAT and BATC
- No limits for some of the techniques that ar not in the BREF
- Wide range for the ELVs associated to BATs in some cases
- Training of personel responsible for maintanance and daily operation of IPPC installation,
- Implementation of BAT:
  - high cost of technology or emerging techniques,
  - difficulties to implement BAT for „old" installations,
  - difficulties to accustom personel to different management system.

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IEP
General conditions

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IEP
ELVs: exceptions

- Acording to Art. 14 point 4 of IED (art. 8.5 of draft By-Law) Competent Authority may set less strict ELVs only, when an assessment shows that the achievement of ELVs associated with BATC would lead to disproportionately higher cost compared to the environmental benefits,
- The emission limit values shall, however, not exceed the emission limit values set out in the Annexes V-VIII to IED, where applicable

IEP
Duration and review

- In general there is no fixed duration,
- Review/update of Integrated permit:
  - in case of BAT conclusion change/update – Competent Authority has max. 4 years for update,
  - in case of substantial changes (according to criteria outlined in „Integrated Environmental Permit: guideline for the applicants" – open list) – operator can not carry out the installation until a new/revised Integrated permit is granted,

IEP
Public participation

- Rules for EU Members are described in Art. 24 and Annex IV of IED (adapted for Turkey in art. 11 and Annex IV of draft By-Law)
- Competent Authority shall make the information available to the public, including via the Internet,
- Allegations have to be taken under consideration by Competent Authority

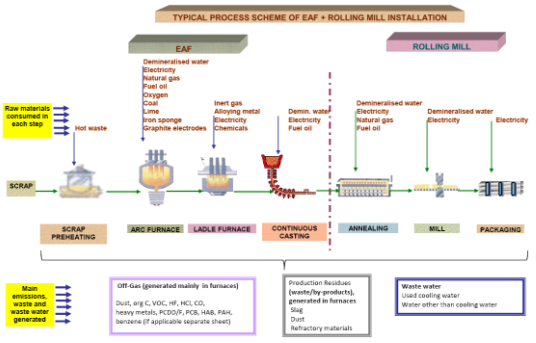
IEP
Environmental inspections

- System of environmental inspections
- Inspection plan including
  - a general assessment of relevant significant environmental issues;
  - the geographical area covered by the inspection plan;
  - a register of the installations covered by the plan;
  - procedures for drawing up programmes for routine environmental inspections pursuant to paragraph 4;
  - procedures for non-routine environmental inspections pursuant to paragraph 5;
  - where necessary, provisions on the cooperation between different inspection authorities.
- Inspection programmes setting frequencies on a systematic appraisal of the environmental risks (at least once a year for highest risk and every three years for lowest risk)

IEP
Environmental inspections

- Non routine inspections to investigate serious environmental complaints, serious environmental accidents, incidents and occurrences of non-compliance as soon as possible
- Report with conclusions and actions
  - Notification to operator in 2 months
  - Publication of the report in 4 months

Electric arc furnace steelmaking



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Useful links

European IPPC Bureau in Sevilla
http://eippcb.jrc.es

EPA BAT and BREF download site
www.epa.ie/downloads

EIA site
http://ec.europa.eu/environment/eia/home.htm

SEVESO site
http://ec.europa.eu/environment/seveso/index.htm

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Twinning Project TR 08 IB EN 03

PERMIT APPLICATION CONTENTS
ELECTRIC ARC FURNACE STEELMAKING AND CASTING
Mission 1: Basis of the training

Outline

- PROJECT REPORT
- Annexes.
- OTHER DOCUMENTATION DIFFERENT FROM THE PROJECT REPORT

PROJECT REPORT

1. GENERAL DATA

COMPANY	
Trade name	
Head office	
ZIP code	City VAT
Province	Telephone
Fax	E-mail
INSTALLATION	
Name	
Adress	ZIP code
City	Province
Telephone	E-mail
Person of contact	

PROJECT REPORT

2. DESCRIPTION OF THE INSTALLATION

1.Number of work centres, plants, delegations, headquarters, corporate address...
2.Register number of industrial establishments.
3.National Classification of Economic Activities (NACE).
4.Total number of workers.
5.Investments targeted to environmental improvements.
6.Organization chart (hierarchic representation of the staff with their corresponding positions or jobs).
7.Location: The UTM coordinates should be included, attaching a location map and an installation map.
8.Local and/or regional information on the urban planning, soil uses and conditions (orographical, morphological, geological conditions ...), soil classification (urban land, non-urban area, rural land, and industrial and special soils ...) and weather conditions.

PROJECT REPORT

ENVIROMENTAL ELEMENTS AFFECTED:

Nature reserve

Zone of hunt

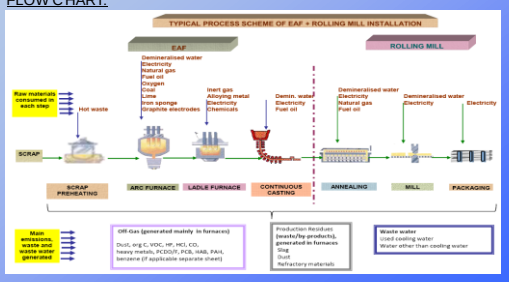
Endemic flora or fauna

Protected soil

PROJECT REPORT

3. SUMMARY OF THE PRODUCTION PROCESS

FLOW CHART:



PROJECT REPORT

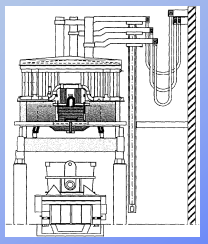
3. SUMMARY OF THE PRODUCTION PROCESS

FLOW CHART:

PROJECT REPORT

3. SUMMARY OF THE PRODUCTION PROCESS

EAF:



PROJECT REPORT

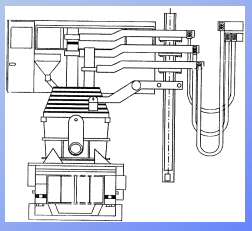
3. SUMMARY OF THE PRODUCTION PROCESS

ladle:

PROJECT REPORT

3. SUMMARY OF THE PRODUCTION PROCESS

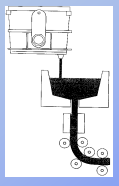
Ladle furnace:



PROJECT REPORT

3. SUMMARY OF THE PRODUCTION PROCESS

Continuous casting:



PROJECT REPORT

3. SUMMARY OF THE PRODUCTION PROCESS

Continuous casting:

PROJECT REPORT

3. SUMMARY OF THE PRODUCTION PROCESS

Re-heating Furnace:

PROJECT REPORT

3. SUMMARY OF THE PRODUCTION PROCESS

rolling mills:

PROJECT REPORT

4. SUMMARY OF THE PRODUCTION PROCESS

LIST of machinery used in the process

Torch cutting machine
SMS DEMAG- SIDERNAVAL
Flow : 60.000 Nm3/h aprox.
Tº gas 60 ºC
Abatement system: Fabric filter
Energy : Electric energy
Power: 250 KVA A 400 V/50 Hz,

Annealing furnace
Furnace HC – 9
Stein Roubaix
Capacity 40 T/h
Energy Natural Gas
Thermal Power 7.234 Th/h
Electrical Power 237 CV

PROJECT REPORT

4. Implementation of BATs and Best environmental practices (BEPs)

BATs/ BEPBs	Environmental improvement	Is in place? If not , what is the date of implementation ?
Primary and secondary dedusting : Efficient extraction of all emission sources by using one of the techniques listed below and to use subsequent dedusting by means of a bag filter: I. A combination of direct off-gas extraction (4th or 2nd hole) and hood systems	The overall average collection efficiency associated with BAT is >98 %. Dust level: <5 mg/Nm3, determined as a daily mean value.	yes
Hot Rolling Mill: Grinding: Enclosures for machine grinding and dedicated booths, equipped with collection hoods for manual grinding and dust abatement by fabric filters	dust level: < 20 mg/Nm³	March 2013
…….		

PROJECT REPORT

5. Detailed description of the natural resources, raw and auxiliary materials and products, specifying the type, characteristics and quantity

•Raw materials and auxiliary materials

Description	State (solid, liquid, gas)	CPA code	Storage place	Annual amount(t)
scrap	Solid	27103063	Parque chatarra	621.540
Ferro-chrome	Solid	27351200	Parque chatarra	4.650
desulfurizing substances	Solid	14111150	Auxiliary Materials stock	192

PROJECT REPORT

6.1 ATMOSPHERIC EMISSIONS

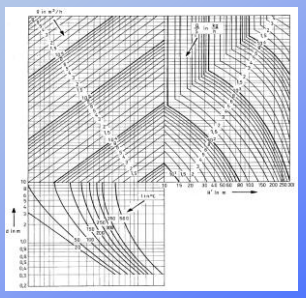
6.1.1Channeled emissions:

▪Description of emissions points: for the emissions produced in each stage, specify the destination. In particular, indicate whether:
-It is piped directly to the atmosphere (in this case indicate the number characterizing the emission point).
-It is sent to successive stages of work.
▪Requirements and technical conditions of the focus: height to ground level, diameter, outlet horizontal / vertical.
▪Gaseous effluents generated: characterize the emissions that originate, specifying them qualitatively and quantitatively. The description should at least provide the following data:
-Pollutants emitted indicating mass flow [kg / h] and concentration [mg / m³].
-Air flow [m^3 / h to 0ºC and 0,101MPa and % O_2].
-Temperature.
-Abatement equipment: techniques adopted for the treatment of emissions originated in each stage

PROJECT REPORT

6. 1 ATMOSPHERIC EMISSIONS

Height to ground level:



PROJECT REPORT

6.1. ATMOSPHERIC EMISSIONS

Emission point		Flow (Nm^3/h)	T (°C)	Pollutant	Process	Emission point height above ground (m)	Diameter or side section (m or m^2)	Abatement system	Observations
No	Description			Concentration (mg/Nm^3)					
1	EAF	765.000	62	**Dust 2,3** **SO_2 <29** **CO <10** **NO_x <20** **HCl<0,5** **HF <0,19** **PCDD/F 0,015 ng/Nm3** **COT 7** **Zn 0,01** **Pb <0,001** **Ni< 0,014** **Cr 0,004** **As < 0,002** **Cd < 0,001** **Hg< 0,0002**	EAF Canopy Hood	30	5,3	F.T.	

PROJECT REPORT

6.1. ATMOSPHERIC EMISSIONS

PROJECT REPORT

6.1. ATMOSPHERIC EMISSIONS

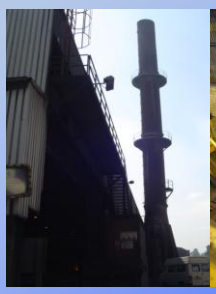
PROJECT REPORT

6.1. ATMOSPHERIC EMISSIONS

Emission point		Flow (Nm^3/h)	T (°C)	Pollutant	Process	Emission point height above ground (m)	Diameter or side section (m or m^2)	Abatement system	Observations
No	Description			Concentration (mg/Nm^3)					
2	Re-heating furnace	57.000	320	Dust 5,4 CO <9 NO_x 288	Hot rolling	39	2,32		
3	Pickling	10.200	61	HCl 3,7 Dust < 3,2	Pickling	21	0,7	scrubber	

PROJECT REPORT

6.1. ATMOSPHERIC EMISSIONS



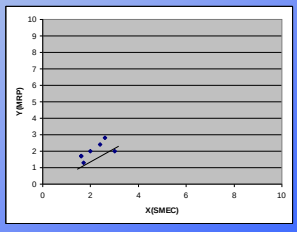
PROJECT REPORT

MONITORING AND CONTROL

Process	Parameter	Frequency	Method
EAF	Particles	Continuous	CEMS (UNE-EN 14181)
	Particles CO NOx SO2 HCl HF PCDD/F Metals (Zn, Pb, Ni, Hg, Cu, Cr, As, Cd) NMCOV	Once per year	UNE-EN 13284-1 UNE-EN 15058 UNE-EN 14792 UNE-EN 14791 UNE-EN 1911 UNE-ISO 15713 UNE-EN 1948 UNE-EN 14385 UNE-EN 12619
	PAH, PCB	Once first year and then as appropriate	
Re-Heating furnaces	NOx SO_2	Once every 1 or 3 years depending on the power and capacity	
Pickling	*Coal and low alloyed steel* Particles/HCl	Once in three years	

PROJECT REPORT

6.1. ATMOSPHERIC EMISSIONS



Y=ax+b

Y=bx (cluster)

PROJECT REPORT

FUGITIVE EMISSIONS

6.1.2 Non channelled emissions (fugitive emissions):

- Description of the sources of fugitive emissions and identification of the substances that may be present in such emissions must be provided, mentioning as well as the existence of nearby villages.

- Estimation or calculation of fugitive emissions arising from the installation, expressed as a mass flow for each pollutant, describing the procedure of estimation / calculation used to obtain the quantities. If the estimate is made from real measurements, the relevant certificate and an analytical plan in which sampling points are defined must be attached.
Note : International EFs (emission factors) are available

PROJECT REPORT

FUGITIVE EMISSIONS

PROJECT REPORT

FUGITIVE EMISSIONS

PROJECT REPORT

6.2 AIR QUALITY

Plan de vigilancia

For the installations which are required to do so according to the national legislation, provide the relevant data on automatic monitoring stations.

Debido al impacto de las emisoines de la aceria y su cercania a poblacion puede ser necesario la realizacion de un estudio de la calidad del aire que puede llevar a la instalacion de equipos de inmision de PM10 en continuio. Para la ubicacion de estos equipos habra que tener en cuenta:

. Ubicacion poblacion
. Vientos predominantes
.Puntos de emisoin
.....

PROJECT REPORT

6.3. NOISE EMISSIONS TO THE SURROUNDINGS OF THE INSTALLATION.

Noise study:

Noise measurements
mayor precision lugares puntuales

Noise modeling
-Mejor analisis de la zona
-Permite establecer medidas correctoras a la empresa
-Unica solucion para zonas complicadas(varias focos,…)

PROJECT REPORT

6.3. NOISE EMISSIONS TO THE SURROUNDINGS OF THE INSTALLATION.

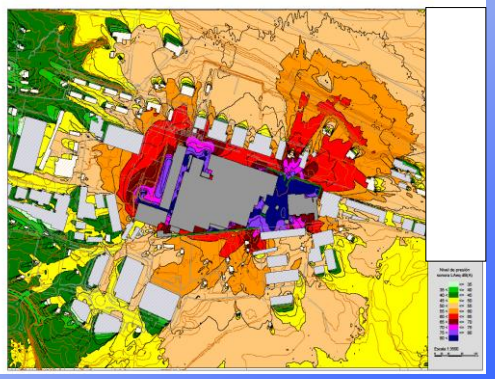
Noise measurements: UNE-ISO 1996:2009.

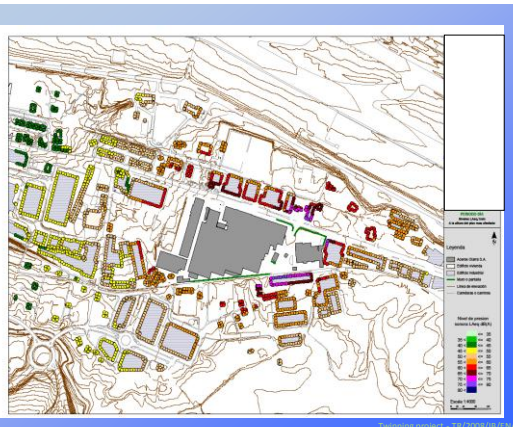
PROJECT REPORT

6.3. NOISE EMISSIONS TO THE SURROUNDINGS OF THE INSTALLATION.

Noise modeling:UNE- ISO 3744

Identification of noise sources	Location	Characteri-zation of noise	Sound Power Lwa(dbA)
EAF duct	aceria	23:00-8:00	112
Fan	EAF duct	23:00-8:00	106
Cooling tower		continuos	105
Door 5	Nave 2	23:00-8:00	96
Emision cubierta	Nave 3	Continuous	92





PROJECT REPORT

6.3. WASTEWATER DISCHARGES.

- **DESCRIPTION OF THE WASTE WATER FLOWS: PROCESS, SANITARY AND RAIN WATERS.**

- **INDUSTRIAL WASTE WATERS: EMISSION SOURCES, POINTS TO THE RECEIVING MEDIUM, FEATURES OF WWTP.**

- **RAINWATER DISCHARGES.**

- **SANITARY WATERS.**

- **OTHER DISCHARGES.**

PROJECT REPORT

6.3. WASTEWATER DISCHARGES.

3. Volume flow, amount and type of waste water for particular stream which is conducted on that discharge			
Kind of stream: industrial, sanitary and rainwater on that discharge			
Stream code	X1	X2	X3
Waste water type (industrial, sanitary, rainwater)	INDUSTRIAL	SANITARY	RAINWATER
Max. 6 hours average volume flow (l/s)			
Max. amount per day (m^3/day)	**4.600**		
Max. annual amount (m^3/a)	**338.000**	20.000	45.000
actual annual amount (m^3)			
Type of discharging:	**DISCONTINUOUS**	**DISCONTINUOUS**	**DISCONTINUOUS**
Total area collecting rainwater (m^2)			

PROJECT REPORT

6.4. WASTEWATER DISCHARGES.

WWT control status of monitoring system	
Discontinuous measurement (key parameters)	
COD	10 mg/l
PH	7
SS	9 mg/l
Fe	1,4 mgFe/l
Cr	0,03 mg/l
Oil, grease	<1 mg/l
Ni	0,03 mg/l
Zn	0,12 mg/l

PROJECT REPORT

ABSENCE OF SPILLAGE OF WASTE WATER FOR TOTAL RECIRCULATION OF THE WATERS.

*Technical justification of the total reutilization of the water (spilt zero), with express indication of the water line of the installation and destination of the residual industrial sludges having into account the industrial processes of production and the available facilities of purification.

*Technical descriptive memory of the facilities of purification, with justification of the volumes and flows to processing, as well as reduction of the pollutant present parameters in the residual water.

*Certification of not existence of discontinuous spillages to riverbed, soil or subsoil, area or reservoir.

* Measures of control and emergency, respect of the accidental spillages.

PROJECT REPORT

ABSENCE OF SPILLAGE OF WASTE WATER FOR ACCUMULATION IN TANK

- Certification of the impermeability and water tightness of tank, with express incorporation of the absence of water exits for bottom or wings.

- Justificative calculation of the dimensions of the pit of storage and characteristics of the materials.

-Regime of emptying of the warehouse, contract with company in charge of the cleanliness of the same one, and destination of the waste water so much of industrial as domestic origin.

-Justification of the annual volume and flows generated in both lines of water.

- Supporting vouchers of the frequency and periodicity with which the extractions and cleanliness are realized.

PROJECT REPORT

6.4. WASTE.

6.4. 1. WASTE PRODUCTION.

- **ANNUAL AMOUNT.**
- **LER CODE**
- **ORIGIN**
- **STORAGE**
- **HAZARDOUS, NON-HAZARDOUS AND PACKAGING WASTE.**

PROJECT REPORT

HAZARDOUS WASTE

European Waste Catalogue	Description of the activity	Quantity	Unit (kg, g...)	Waste management
130110 OILS	MAINTENANCE OF MACHINES	6680	KG	OÑEDER Gestor Autorizado
100207 Polvos de acería	EAF fabric filter	1.503.000	KG	EKONOR Gestor Autorizacion
100211 Lodos de Laminacion	Rolling mills	14.120	KG	.....
.....				

PROJECT REPORT

NON- HAZARDOUS WASTE

European Waste Catalogue	Description	Quantity	Unit
100201 White slag	WHITE SLAG	2.417.0000	Kg
100210 Cascarilla laminacion	Rolling mill	310.500	Kg

PROJECT REPORT

6.5.SOIL AND GROUNDWATER PROTECTION.

Storage tanks with description						
Tank code	Tank volume (m3)	Content	Age of tank	Date of last check/ test	Prevention techniques	Type: underground/ on the ground tank
1	98	Sludge storage	10 YEARS	NOV-2011	SPILL PICK BUND	ON THE GROUND TANK
2	5	Sodium Hypochlorite	20 YEARS	NOV-2011	SPILL PICK BUND	ON THE GROUND TANK
3	50	Gasoil	20 YEARS	NOV-2011	SEALED	UNDERGROUND TANK
....						

ACCORDING TO IED : SOIL CONDITIONS CONTROL EACH 10 YEARS GROUNDWATER CONTROL EACH 5 YEARS.

PROJECT REPORT

6.6.OPERATION UNDER NOT NORMAL CONDITIONS.

-Start-up and shut-down operations, leaks, malfunctions, momentary stoppages: description of the operation and the situations that cause them.

-Expected emissions in those cases.

-Measures planned.

-% of operation under not normal conditions.

- Emergency situations.

- Measures to be taken upon definite cessation. Baseline report.

WHEN THE ACTIVITY FINISH DEFINITELY THE PLACE WHEN IT TOOK PLACE MUST BE IN THE SAME CONDITIONS AS IT HAD BEFORE THE ACTIVITY BEGAN[iii]

OTHER DOCUMENTATION

1. **ENVIROMENTAL IMPACT ASSESMENT.**
2. **URBAN REPORT.**
   - **FOR THE APPLICATION:**
     - PLANE OF THE PLOT
     - BRIEF DESCRIPTION OF THE FACILITY
     - NEEDS OF USING AND UTILIZATION OF THE SOIL
     - REQUIREMENTS OF THE INSTALLATION WITH REGARD TO THE PUBLIC ESSENTIAL SERVICES

3. **REPORT OF CONTROL OF MAJOR-ACCIDENT.**
4. **CONFIDENTIAL INFORMATION.**
5. **ANY OTHER DOCUMENTATION ACCORDING TO THE APPLICABLE LEGISLATION.**
6. **ANY OTHER DOCUMENTS REQUIRED BY THE COMPETENT AUTHORITY.**
7. **BASELINE REPORT.**
8. **NON-TECHNICAL SUMMARY**

OTHER DOCUMENTATION

GRAPHIC INFORMATION:

1. **LOCATION MAP.**
2. **PLANT DRAW WITH KEY INSTALLATION ELEMENTS.**
3. **MAP OF THE EMISSION POINTS.**
5. **WATER LINES AND DISCHARGE POINTS.**
6. **WASTE STORAGE.**
7. **CHEMICAL STORAGE.**

THANKS FOR YOUR ATTENTION¡¡

Eşleştirme Projesi TR 08 IB EN 03
IPPC – Entegre Kirlilik Önleme ve Kontrol
T.C. Çevre ve Şehircilik Bakanlığı

PERMIT APPLICATION CONTENTS IRON & STEEL ELECTRIC ARC FURNACE INSTALLATIONS.

BASIC PROJECT FOR THE REQUEST OF THE INTEGRATED ENVIRONMENTAL PERMIT OF THE FACILITIES OF :

LOCATED IN:

DATE OF ISSUE:

PREPARED BY[1] :	APPROVED BY[2] :
Name Signature	Name Signature

[1] Persons or company that have prepared the permit application

[2] Person who certifies the validity of this permit application on behalf of the company that owns the facilities for which the integrated environmental permit is requested.

PRELIMINARY NOTES:

1.-The meaning of the colours that have been used in the production of this document is the following:

- ✓ **Black color: like what is indicated in the initial Guide " Integrated Environmental Permits: Suporting Guideline for the applicants ".**
  Orange color: examples of how should the content of the Check-list be completed by the operator of the installation.

2.-We have based this document on the document elaborated in previous missions: " Integrated Environmental Permits: Suporting Guideline for the applicants ".

3.-This document has been designed to adapt as much as possible to the iron & steel electric arc furnace sector based on the experience that we have in this sector.

PROJECT REPORT

The project report shall include, at least, the following basic elements related to the installation:

1. General data:

- Name of the company, trade name, VAT number, full address (including location, province, town, region and country), telephone, fax, e-mail.
- Owner of the installation, operator, legal representative, person in charge of the plant or production (if applicable), person in charge of environmental issues (if applicable) and contact person with his/her corresponding data (full name, position in the company, address, telephone and e-mail).

COMPANY	
Trade name	
Head office	
ZIP code	City VAT
Province	Telephone
Fax	E-mail
INSTALLATION	
Name	
Adress	ZIP code
City	Province
Telephone	E-mail
Person of contact	

2. Description of the installation:

2.1. Number of work centres, plants, delegations, headquarters, corporate address... The data of the contact person, position, address, telephone, fax and e-mail should be included for each of the centres.

2.2. Register number of industrial establishments.

2.3. National Classification of Economic Activities (NACE).

2.4. Total number of workers.

2.5. Investments targeted to environmental improvements.

2.6. Organization chart (hierarchic representation of the staff with their corresponding positions or jobs).

2.7. Location: The UTM coordinates should be included, attaching a location map and an installation map.

2.8. Local and/or regional information on the urban planning, soil uses and conditions (orographical, morphological, geological conditions ...), soil classification (urban land, non-urban area, rural land, and industrial and special soils ...) and weather conditions.

2.9. Activity of the Annex 1 of the By-law to which the main activity and associated production capacity belong.

2.10. Main activities and others

2.11. Description of the environmental status of the site where the installation will be located and any impacts that may be foreseen, including any that may arise upon definitive cessation of the activities at the installation(for installations subject to EIA, this information is included in the EIA report).

CHARACTERIZATION OF WORKING REGIME		
Number of staff	Permanent	
	Temporal	
Working hours	Hours/year	
Indicate hours and days per week of the activity normal operation		
Indicate if the activity occasionally is operated in other periods (weekly annual variations, peak loads, etc.)		
Date of the start of the activity of the facilities		
Date of commissioning of the Facility		

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Coordinates UTM	X:	Y:	UTM zone[3]:
Geographical coordinates	Latitude:	Length:	
Extension of the Facility [m^2]			
Neighboring municipalities			
Watercourses affected*			
Nearby infrastructures (highways, roads...) and main accesses to the installation*			
Environmental elements affected* *Nature reserve, zone of hunt, endemic flora*			

*Location and distance with respect to the installation

Note:Attach a site plan for 1:5000 mapping

CATEGORY OF ACTIVITIES AND FACILITIES	
Main category of activity /Facility	Heading annex 1 of IEP By-Law
Production of pig iron or steel (primary or secondary fusion) including continuous casting, with a capacity exceeding 2,5 tonnes per hour.	*2.2*
Other categories activity/Facility	Heading annex 1 of IEP By-Law
. Processing of ferrous metals: *(a) operation of hot-rolling mills with a capacity exceeding 20 tonnes of crude steel per hour;*	*2.3*
NACE (National Classification of Economic Activities) code:	
Investments targeted to environmental improvements*	

* Indicate in the last 4 years in the case of existing installations .

Comentario [Cesar1]: To be commented with Turkish experts, maybe not necessary.

Information on the Urban planning

[3] UTM Zone: Turkey is between the zones 35 and 38.

Show if the facility has an urban compatibility report issued by the corresponding Competent Authority.

Information has to be provided about where is located the installation: if it is an industrial area, if the soil is an industrial urban one or not (it could be an undeveloped land or a protected soil) and if that zone has the necessary equipments developed or not (like a sewage network, street lighting…)

Comentario [Cesar2]: Turkish experts should indicate what is currently requested to operators regarding urban planning.

Organization chart (hierarchical representation of the staff with their corresponding positions or jobs).

Note : attach chart

Environmental status of the site where the instalation is located.

Here the goal is to know if the installation is located in a zone or close to a zone with some special environmental value, for example near a nature reserve

Environmental impacts.

For existing installations, provide a brief summary about environmental status and impacts.

For new installations or substantial changes, they should submit the EIA report (when applicable).

- Planned date for commencing and completion of building activities: date planned for commencing building activities (for new installations or substantial changes).

- Planned date for starting operation (for new installations or substantial changes).

3. **Summary of the production process**.First describe the production process, with a schematic flow chart dividedinto phases[4]. For each of these phases the following information must be provided:

   - A description of the phase.
   - The duration (operational hours).
   - The methods of operation (continuous or discontinuous).
   - Nominal production/treatment capacity or size: indicate the present capacity

   As a reference, the production process may include the following phases: ∴

   - Storage and handling of raw materials
   - Scrap charging
   - Arc furnace melting and refining.
   - Secondary steel making.
   - Casting
   - Hot rolling mills
   - Cold rolling mills
   - Finishing treatments (shredding, cooling, quality control)
   - Slag treatment, landfills, dust collection.
   - Other related processes (surface treatments, HCl recovery,..)

…

4. Implementation of BATs and Best environmental practices (BEPs).

A listing of BATs implemented. Summary of each indicating what environmental improvement related to the BAT was achieved when it was implemented. List first the BATs which are general for the whole installation, and afterwards the ones which are specific for particular processes.

Indicate as well, in each of the categories below, any Best Environmental Practices (BEPs) carried out (BEPs are those actions which are not BAT but which contribute to the reduction of the environmental impact of the installation).

[4] The term "phase" means any activity in which the raw materials and auxiliaries, even if made from waste, and intermediates are being processed on a continuous or discontinuous way, extracted, processed, combusted, mixed, supplied, stored, etc.

BATs/ BEPBs	Is BAT? Yes / No	Environmental improvement	Is in place? If not , what is the date of implementation ?

5. Detailed description of the natural resources, raw and auxiliary materials and products, specifying the type, characteristics and quantity:

- Natural resources[5]:
  a. energy : use of fuel for heat and steam generation and for transport inside the enterprise not including use of fuel for production of electricity or combined power and heat, use of heat and steam from external suppliers, use of electricity, use of fuel for production of electricity and heat -power plants and boiler houses. Possible measures to increase energy efficiency.
  b. water: quantity of water used in the process, intake of surface, ground and marine water – detailed description of intake, and indication of the cases of supply of water from outside or re-circulated
- Raw materials: list and quantities of raw materials, indicating hazardous or non-hazardous character
- Auxiliary materials: list and quantities of auxiliary materials, indicating hazardous or non-hazardous character
- Products and by products: list of output products types and quantity generated of each of them, per hour, day or year, or as expressed in the units indicated in the Annex I of the Integrated Environmental Permit By-Law.

Electricity

Input stage processs	Consumption(kw/h)

[5] The applicant should provide data of the last 4 years (for existing installations) or estimates for the next 3 years (new installations)

Gas

Input stage processs	Consumption(m^3/h)

Raw materials and auxiliary materials

Description	State (solid, liquid, gas	CPA code	Input stage processs	Storage place	Annual amo
Ferro-chrome					
desulfurizing substances					
.....					

Comentario [Cesar3]: To be discussed in training mission

- The figures provided should be representative (for existing installations), or for the new installations estimates made based on the design of the installation.

6. Environmental emission and controls:

6.1. Atmospheric emissions:

6.1.1.Channeled emissions:

- Description of emissions points: for the emissions produced in each stage, specify the destination. In particular, indicate whether:
  - It is piped directly to the atmosphere (in this case indicate the number characterizing the emission point).

- It is sent to successive stages of work.

- Requirements and technical conditions of the focus: height to ground level, diameter, outlet horizontal / vertical.
- Gaseous effluents generated: characterize the emissions that originate, specifying them qualitatively and quantitatively. The description should at least provide the following data:
  - Pollutants emitted indicating mass flow [kg / h] and concentration [mg / m³].
  - Air flow [m^3 / h to 0ºC and 0,101MPa and % O_2].
  - Temperature.
- Abatement equipment: techniques adopted for the treatment of emissions originated in each stage.

  This table should be provided:

Emission point		Flow (Nm^3/h)	Hours of emission per day (h/day)	T (°C)	O_2(%)	Pollutant		Process	Equipment	Emission point height above ground (m)	Diameter or side section (m or m^2)	Abatement system[6]	Observations
No	Description					Concentration (mg/Nm^3)	Mass flow (kg/h)						

[6] For example: C= Cyclone; F.T.= Fabric filter ; P.E.= Electrostatic precipitator; A.U.V.= Venturi wet scrubber; A.S.= Absorber; A.D.= Adsorber; P.T.= Thermal post-combustion; P.C Catalytic post-combustion; Others= specify.

- Plan for Monitoring and Control:It will contain the following data: Emission point, pollutant, sampling, control and data collection, transmission and registration system. The plan may be in any case subject to the modifications considered relevant by the Competent Authority.

  This table should be provided:

Emission point	Pollutant	Monitoring and Control			
		Internal/ External[7]	Frequency (continuous, daily…)	Description of sampling method	Reports

6.1.2.Non channelled emissions (fugitive emissions):

- Description of the sources of fugitive emissions and identification of the substances that may be present in such emissions must be provided, mentioning as well as the existence of nearby villages.
- Estimation or calculation of fugitive emissions arising from the installation, expressed as a mass flow for each pollutant, describing the procedure of estimation / calculation used to obtain the quantities. If the estimate is made from real measurements, the relevant certificate and an analytical plan in which sampling points are defined must be attached.
- Note : International EFs (emission factors) are available.

[7] Here by “internal” it is meant that the monitoring and control is done by the operator of the installation, and “external” means that this task is performed by an external company.

- NOTE: Attach a location map of emission sources and an elevation drawing of them.

Comentario [Cesar4]: to be commented in training

6.2. Air quality

For the installations which are required to do so according to the national legislation, provide the relevant data on automatic monitoring stations, as indicated in the table below.

Comentario [n5]: to be discussed in the training: what is required in Turkish legislation on air quality, and to which installations.

Automatic monitoring stations		
Number of stations		
Parameters controlled		
Station name	Parameter/s	Value average (daily, monthly or yearly)

6.3. **Noise emissions to the surroundings of the installation** (emissions within the installation are excluded):

- Description of the main sources, including:
  - Description of the type of activity, existing or planned the production process, equipment and machinery that are expected to be used, location of the installation and the description of the surrounding area.
  - Description of the scheduling of activities and those of main and subsidiary operations within the installation, specifying the temporal characteristics of activities, such as the possible seasonal nature, duration during the day and night and if that period is continuous or discontinuous, the operating frequency, the possibility/need during the year that doors or windows are open, simultaneous sound sources, etc.

- Description of noise sources related to the activity, their location and the characterization of each noise. It will include the indication of the data related to acoustic power of the different noise sources or, if not available, sound pressure levels, presence of an impulsive and tonal component, and, if necessary, the directionality of each source. In situations of uncertainty on project type or location of sound sources to install, emission levels should be estimated by analogy with those from similar sources.

- Identification and description of receivers (eg hospitals, schools, homes, parks, etc.) present in the surrounding area, with details of their relevant characteristics in terms of noise (eg intended use, height, distance from the installation or activities planned, etc.).

Note :Noise issues must be conditionesd as specified in the laws of the Turkey.

For existing installations they must attach the noise assessment report. At new installations or substantial changes, operators must provide estimations about how much the noise could increase when the new installation or change in the installation takes place.

6.4. Wastewater discharges:

- Description of the Waste Water Flows: A summary list of flows (including process, sanitary and rain waters), together with maps, drawings and supporting documentation should be included. For each of the flows the following information should be provided:
  - Industrial wastewaters: details of all emission sources of industrial waste waters[8] and emissions points from them to the receiving medium (inland and sea surface water) or to the public sewage system with the industrial waste water (pre)treatment plant data should be provided.
  - Sanitary Waters: details of all emission sources of sanitary waste waters and emissions points from them to the sewage system with external or internal waste water treatment plant data should be provided.
  - Rainwater discharges: details of all emission sources of rainwater (rainwater drainage) and emissions points from them to the receiving media should be provided.
  - Other discharges: a detailed overview and a summary of emissions into ground (land spreading) should be provided. An assessment of waste water discharge into the ground from existing or planned waste water discharges should be provided and it should include at least the following information: amount of water per day/per year, way of discharging (filtration, land spreading), protection of groundwater – description of the geology, hydrogeology, meteorological conditions, location of discharging, distance to drinking water zones, …

This table should be provided:

[8] In case of cooling systems (direct cooling, indirect cooling, open/close loops), description and supporting documentation (like the list of substances used in cooling waters in an existing installation, and heat discharge calculation sheets) should be also provided.

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1. Data for the discharge					
Discharge name		code			
U.T.M. coordinates		X:		Y:	
Municipal/region name		code		Parcel No:	
2. General data					
Discharge into:					
Public sewage (y/n)		Sewage with WWT (y/n)		WWT name	
Sewage network		Sewage with WWT (y/n)		WWT name	
Inland or sea surface water (y/n)		Surface water name			
Soil (groundwater) (y/n)		External professional opinion by institute enclosed (y/n)			
Other		description			

3. Volume flow, amount and type of waste water for particular stream which is conducted on that discharge				
Kind of stream: industrial, sanitary and rainwater on that discharge				
Stream code	X1	X2	X3	X4
Waste water type (industrial, sanitary, rainwater)				
Max. 6 hours average volume flow (l/s)				
Max. amount per day (m^3/day)				
Max. annual amount (m^3/a)				
actual annual amount (m^3)				
Type of discharging:				
Total area collecting rainwater (m^2)				

- Requirements and technical conditions of the discharging points: Detailed description of the existing sampling points within the installation, for each of the wastewater flows. Besides, the following information about existing wastewater depuration systems shall be provided:
  - Industrial Waters: Detailed description of the industrial WWT plant or other depuration systems. For each industrial WWT plant the operational procedure should exist together with operational records. The operational procedures should include at least the following information:
    - WWT plant operator.
    - Information regarding the input specific substances/pollutants.
    - Treatment techniques; Pollution reduction %.
    - Average emission value after (pre)treatment: Normal operation (Kg/tonnes product)/ Abnormal operation (start-up, etc).
    - WWT plant operational data (technology/process description, WWT plant efficiency).
    - Management of sludges (solid or liquid) after treatment.
    - Operational and maintenance procedure.
    - Procedure for the control together with monitoring system.
    - Corrective actions in case of accidents (incidents) together with start-ups and WWT plant interruptions.
    - Maintenance and preparation procedure of operational records.

This table should be provided:

WWT operator[9]	**Treatment techniques of the industrial WWT**[10]**:**				
	Specific substances input	**Average EVLs after treatment at normal condition, kg/tonnes**	**Average EVLs after treatment at abnormal condition, kg/tonnes**	**WWT efficiency, %**	**Sludges (liq./sol.), kg**
WWT control status of monitoring system					
Continuous measurement			Discontinuous measurement (key parameters)		
pH			COD		
T			Heavy metals		

[9] It can be the same operator as the one of the installation that discharges the wastewaters, or a different one, for example it may be a different operator in Organised Industrial Zones.

[10] Examples: mechanical treatment, chemical treatment, biological treatment

Waterflow, m^3		other[11]	
Accident/incident: (examples : malfunction of the chemical or biological treatment, unexpected events like filtration from wastewater tanks, breakdown of some of the equipment...)			
Corrective action:			
Maintenance:			
Date/Location/Signature:			

- Sanitary Waters: detailed description of the sanitary WWT plant and all techniques for pollution prevention should be described.
- Rainwaters: description of all the buffer measures implemented to contain rainwaters.
- Other discharges: detailed description of the decentralised or centralised (on-site or off-site) treatment facilities or other depuration systems and all techniques for pollution prevention should be described.

NOTE: Attach a plan of the water and wastewater flows within the installation, and the discharge points.

- Plan for Monitoring and Control: It will contain the following data: Emission point, pollutants, sampling, control and data collection, transmission and registration system. The plan may be in any case subject to the modifications considered relevant by the Competent Authority.

[11] Include at least all those which are established as compulsory for your kind of installation in the national legislation.

This table should be provided:

Discharging point	Pollutant/s	Monitoring and Control				
		No.sample	Internal/ External[12]	Frequency (hourly, daily…)	Description	Reports

Reports should be available about the water body that receives the discharges of treated wastewater. Physical, chemical and biological parameters of the receiving water bodies of the effluent from the facility (upstream and downstream of the discharge point).
The environmental quality of the receiving environment must be known.

Comentario [Cesar6]: To be commented during the training.

6.4. **Waste:**

6.4.1. Hazardous waste (including waste oils):

6.4.1.1. Waste production:

- Waste characterization:Detailed description of the activities (related to the production processes or to other activities not related to production processes) where the hazardous waste is generated. Information related to classification, labelling and storage of hazardous waste should be provided.

- Storage conditions:Description of key features of storage (area, height, type of floor, presence of isolating covers, spill prevention devices).

This table should be provided:

European Waste Catalogue[13]	Description of the activity	Quantity	Unit (kg, g…)	Storage system

[12] Here by "internal" it is meant that the monitoring and control is done by the operator of the installation, and "external" means that this task is performed by an external company.

[13] See Annex 7 of the By-Law 25755, published in the Official Gazette on the 14/03/2005, on Hazardous Waste Control

- Plan for the minimization of waste.A detailed description of the plan prepared to minimize hazardous waste generated per product unit in production processes. The plan may be in any case subject to the modifications considered relevant by the Competent Authority.

6.4.1.2. Waste management:

- Offsite transfer to authorised waste operators: identification of the transfer and shipment notification of hazardous waste should be provided.

- In-site treatment of waste: describe in detail treatment given to each waste, quantities treated. Include a detailed map showing the areas related to the treatment given to each type of waste. Measures to handle waste to mitigate the risks to human health and the environment should be provided.

This table should be provided:

European Waste Catalogue	Description	Quantity	Unit	Treatment operations[14]

[14] Any method, technique, orprocess, including neutralization, designed to change the physical, chemical, or biologicalcharacter or composition of any hazardous waste so as to neutralize such waste, or so as torecover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store, or dispose of; or amenable for recovery,amenable for storage, or reduced in volume.

- Admission procedure for waste: description of the procedure for admission of waste should be provided including the way that the operator implements the following aspects:

  1. Check of the documentation (approval of the vehicle, monitoring and control document fill-in...).
  2. Weight and register of the load (weighing, date and time of arrival, waste origin, type of waste, waste vessel...).
  3. Visual inspection.
  4. Characterization and / or periodic sampling of the waste.
  5. Notification to the Competent Authority in the absence of waste acceptance.

- Treatment operations:description of the treatment operations including the following aspect:

  1. A flow chart of treatment operations.
  2. The techniques[15] used for the treatment operations.
  3. The quantity of materials recovered.
  4. Any energy recovery (mode, use, quantity).
  5. Nominal capacity of the system (kg / h).
  6. Current capacity of the system (kg / h).
  7. Number of daily hours of operation.
  8. Number of days in a year.

- Technical requirements for disposal: describe in a detailed manner the activities that will be carried out for the final disposal of the rejected materials resulting from the treatment operations.

6.4.2. Non-hazardous waste:

6.4.2.1. Waste production:

[15] A comparison of the techniques used with respect to the BATs included in the BAT Conclusion documents approved by the European Commission should be provided.

- Waste characterization:Detailed description of the activities (related to the production processes or to other activities not related to production processes) where the non hazardous waste is generated.

This table should be provided:

European Waste Catalogue	Description	Quantity	Unit

6.4.2.2. Waste management:

- Offsite transfer to authorised waste operators: identification of the transfer and shipment notification of non hazardous waste should be provided.

- In-site treatment of waste: describe in detail treatment given to each waste, quantities treated. Include a detailed map showing the areas related to the treatment given to each type of waste. Measures to handle waste to mitigate the risks to human health and the environment should be provided.

This table should be provided:

European Waste Catalogue	Description	Quantity	Unit	Treatment operations[16]

[16] Any method, technique, orprocess, including neutralization, designed to change the physical, chemical, or biologicalcharacter or composition of any hazardous waste so as to neutralize such waste, or so as torecover energy or material resources from the waste, or so as to render such waste non-hazardous, or less hazardous; safer to transport, store, or dispose of; or amenable for recovery,amenable for storage, or reduced in volume.

6.4.3. Packaging waste:

6.4.3.1. Waste production:

- Waste characterization:Detailed description of the packaging waste generate (related to the production processes).

This table should be provided:

European Waste Catalogue	Description	Quantity	Unit

- Plan for the minimization of waste: A detailed description of the plan prepared to minimize[17] packaging waste generated in production processes. The plan may be in any case subject to the modifications considered relevant by the Competent Authority.

NOTE: Attach a map indicating the points where waste is generated and where it is stored.

6.5. Soil and groundwater protection:

- Requirements and Technical Conditions:
  - Safety measures for storage: Detailed list of all storage tanks and other storage should be indicated (see the following table) as follows:
    1. Reference number, location/code.
    2. Content (chemical substances, products and/or by-products).
    3. Type (underground, on the ground, indoors) and size.

[17] Minimization means reducing the material amount of the packaging waste in (quantitative prevention) and the harm that these materials can cause in the environment (qualitative prevention).

4. Age.
5. Location on site.
6. Distance from sewer – enclosed a map.
7. Date of last check/test made by competent laboratory.
8. Technical check-up, prevention techniques.
9. Other requirements derived from the By-Law 27605, published in the Official Gazette on the 08/06/2010 on soil pollution.

This table should be provided:

Storage tanks with description						
Tank code[18]	**Tank volume (m3)**	**Content**	**Age of tank**	**Date of last check/ test**	**Prevention techniques**	**Type: underground/ on the ground tank**

- Systems of drainage or collection of potentially polluted waters: A detailed description concerning maps, drawings of systems of drainage or collection of potentially polluted waters should be provided by the operator of the installation.

6.6. Operation under not normal conditions:

- Description of the operation modes different from the normal operation (start-up and shut-down operations, leaks, malfunctions, momentary stoppages, definitive cessation of operations, etc) and of the situations which cause them.
- Expected emissions under those circumstances (pollutants and concentrations).
- Expected percentage of operation under those circumstances (hours/year).
- Special measures planned to be followed under those circumstances and goals to be achieved by taking those measures.
- Systems for the monitoring and control of parameters under those circumstances.
- Description of the operation under emergency situations.

[18] Identification code according to the plant design

- Measures previewed to be taken upon definite cessation of activities to avoid any risk of pollution and return the site of operation to the state defined in the baseline report (the baseline report is defined below, in subsection III.vi)

ANNEXES TO THE PROJECT REPORT

Annex 1. - Future actions in the company in order to minimize the environmental impact of its activities and / or adapt to the new legal requirements.

For example: improvements in water consumptions, improvements in plant's wastewater treatment, improvements in energy consumptions .... It includes also those investments which are expected to be done and which are not a consequence of a legal requirement stated in national legislation.

OTHER DOCUMENTATION DIFFERENT FROM THE PROJECT REPORT

i. **Submittion of an Environmental Impact Assessment (EIA) Report according to the legislation on the environmental impact assessment to the Competent Authority and after its acceptance preparation of the EIA report and project presentation file**(if applicable to the installation, taking into account if it is a new or existing installation)**.** The report is the one mentioned in article 11 of the EIA By-Law 26939.

ii. **A report from the competent administration responsible of development plans and landscape planning in which the site for the installation is located, evidencing compatibility of the project with urban planning provisions.** If the applicant applied for such report to that competent administration and no report is provided within 40 working days, that report shall be replaced by the applicant with a copy of the application for the report. In any case, if the urban report is negative, the Competent Authority will bring the permit procedure to an end.

iii. **A report from the Competent Authority on control of major-accident hazards involving dangerous substances, classifying the activity according to the legislation.**

iv. **Identification of the information which the applicant deems to be confidential under the provisions in force.** When assessing this point, the applicant should take into account that the application will be submitted to public information during 15 working days, plus the legislation applicable.

v. **Any other documentation evidencing compliance with the requirements under the applicable environmental legislation on obligatory security or insurance**[19].

vi. **Any other documentation evidencing compliance with the requirements under the applicable environmental legislation.**

vii. **Any other documents required by the Competent Authority.**

viii. Where the activity involves the use, production or release of relevant hazardous substances and having regard to the possibility of soil and groundwater contamination at the site of the installation, the operator shall prepare and submit to the Competent Authority with the application a baseline report or before a permit for an installation is updated for the first time. The baseline report shall contain the information necessary to determine the state of soil and groundwater contamination so as to make a quantified comparison with the state upon definitive cessation of activities provided for under Article 29.2(site closure)**. The baseline report shall contain at least the following information:**

[19] We should take care that this part is compatible with the final version of the By-Law.

A. information on the present use and, where available, on past uses of the site;

B. **information on soil and groundwater measurements that reflect the state at the time the report is drawn up having regard to the possibility of soil and groundwater contamination by those hazardous substances to be used, produced or released by the installation concerned**.

C. Plan for monitoring and control of surveyof the state of soil and groundwater contamination.

ix. **The application for an Integrated Environmental Permit shall be accompanied by a non-technical summary of the details specified in the foregoing paragraphs, to enable their comprehension in the public information period**. Concerning this report there is no maximum size.

ANNEX I. CHECK-LISTS TO BE USED IN THE ASSESSMENT OF THE PERMIT APPLICATION

CONTENTS OF THE PERMIT APPLICATION FILE					
	DESCRIPTION			CHECK	
PROJECT REPORT	Owner of the company		Name of the company	1	☐
			Full address	2	☐
			VAT number	3	☐
			Main activity	4	☐
	Operator (if is different from the owner)		Name of the company	5	☐
			Data of the contact person (in each work centre)	6	☐
			Full address	7	☐
			VAT number	8	☐
			Main activity	9	☐
	Description of the installation and technical characteristics		Number of work centres	10	☐
			Register number of industrial establishments	11	☐
			National Classification of Economic Activities (NACE)	12	☐
			Total number of workers	13	☐
			Investments targeted to environmental improvements.	14	☐
			Organization chart	15	☐
			UTM coordinates	16	☐
			Activity of Annex I of the By Law	17	☐
			Main activity and others	18	☐
			Nominal production/treatment capacity and size	19	☐
			Planned date for commencing and completion of building activities (for new installations)	20	☐
			Planned date for starting operation (for new installations)	21	☐
			Operational time of the installation	22	☐
	Description of the production process		Production process description, with a schematic flow chart divided into phases.	23	☐
			Description of the phases	24	☐
			Operational hours in each phase	25	☐
			The methods of operation (continuous or discontinuous)	26	☐
			Description of the equipment and the techniques used, specifying which of them are considered as Best Available Techniques (BAT)	27	☐
	Detailed description of the natural resources, raw and auxiliary materials and products		Energy consumption: use of fuel for heat and steam generation and for transport inside the enterprise not including use of fuel for production of electricity or combined power and heat, use of heat and steam from external suppliers, use of electricity, use of fuel for production of electricity and heat -power plants and boiler houses. Measures to increase energy efficiency.	28	☐
			Water: quantity of water used in the process, intake of surface, ground and marine water –detailed description of intake, and indication of the cases of supply of water from outside or re-circulated	29	☐
			Raw materials: list and quantities of raw materials, indicating hazardous or non-hazardous character	30	☐
			Auxiliary materials: list and quantities of auxiliary materials, indicating hazardous or non-hazardous character	31	☐
			Products and by-products: list of output products and by-products, types and quantity generated of each of them, per hour, day or year.	32	☐
PROJECT REPORT		Air quality	Modelization requirements	33	☐
			Plan for monitoring of immisions	34	☐
		Air: Channelled	Description of the emission points	35	☐
			Requirements and technical conditions of the focus (including operational hours)	36	☐
			Gaseous effluents generated (air flow, temperature and pollutants emitted and their amounts)	37	☐

CONTENTS OF THE PERMIT APPLICATION FILE					
T	DESCRIPTION			CHECK	
	Environmental emissions and controls	emissions:	Abatement equipment, specifying which ones are BAT	38	☐
			Plan for Monitoring and Control	39	☐
		Air: Non channelled emissions	Description of the emission points	40	☐
			Pollutants emitted	41	☐
			Abatement equipment, specifying which ones are BAT	42	☐
			Plan for Monitoring and Control	43	☐
		Noise	Description of sources (location and characterization)	44	☐
			Acoustic study	45	☐
			Abatement measures, specifying which ones are BAT	46	☐
			Plan for Monitoring and Control	47	☐
		Waste water	Description of the flow (including discharging points) and the associated process (industrial, sanitary, rainwater or other discharges)	48	☐
			Requirements and technical conditions of discharging points	49	☐
			Description of pollutants and emitted amounts	50	☐
			WWTP (specifying BAT)	51	☐
			Monitoring and control (sampling points)	52	☐
		Hazardous waste	Production (amounts) and characterization (classification according EWC and labelling)	53	☐
			Storage conditions	54	☐
			Prevention on pollution measures (specifying BAT)	55	☐
			Waste management (inside/offside treatment)	56	☐
			Plan for minimization of waste	57	☐
		Non hazardous waste	Characterization (classification, amounts and labelling)	58	☐
			Prevention on pollution measures (specifying BAT)	59	☐
			Waste management (inside/offside treatment)	60	☐
		Packaging waste	Characterization	61	☐
			Plan for minimization of waste	62	☐
		Soil and groundwater protection	Safety measures for storage, specifying BAT	63	☐
			Systems of drainage or collection of potentially polluted waters.	64	☐
			Plan for monitoring and control	65	☐
		Not normal operation conditions	Situations when not normal operation will take place. Characterization	66	☐
			Measures which will be taken to minimize environmental impact in these not normal conditions	67	☐
			Description of operation under emergency situations	68	☐
			Measures to be taken upon definite cessation of activities	69	☐
ADDITIONAL INFORMATION	Non-technical summary of the details specified in the foregoing paragraphs			70	☐
	Environmental Impact Assessment (EIA) Report (for new installations, article 11 By Law 26939)			71	☐
	Development plans and landscape planning report			72	☐
	SEVESO report (classification of the installation according to applicable legislation on control of major-accident hazards involving dangerous substances)			73	☐
	Identification of the information which the applicant deems to be confidential under the provisions in force			74	☐
	Any other documentation evidencing compliance with the requirements under the applicable environmental legislation including, where applicable, the legislation on obligatory security or insurance required under the applicable environmental legislation			75	☐
	The baseline report, that shall contain the information necessary to determine the state of soil and groundwater contamination so as to make a quantified comparison with the state upon definitive cessation of activities			76	☐
	Receipt of the fees paid by the operator			77	☐

BREF SECTIONS TO BE TAKEN INTO ACCOUNT TO ESTABLISH THE PERMIT'S CONDITIONS

The sections indicated below correspond by default to the BREF Document for Iron & Steel Industry. Where there is reference to other relevant BREF Documents, their name is explicitly indicated.

	SUBJECT	BREF SECTION
1	EAF process optimisation	8.3.1
BATs on air emissions		
2	Advanced emission collection systems	8.3.4, 9.7
3	Abatement techniques for primary and secondary emissions to air from electric arc furnaces	8.3.5, 9.7
4	Reducing of dust emissions from slag processing	8.3.3, 9.7
Adopted BAT Conclusions		
5	Diffuse dust emissions from materials storage, handling and transport of raw materials and (intermediate) products	9.1.5, 9.7
6	Prevention of mercury emissions	9.7
7	Primary and secondary dedusting	9.7
8	Dust emissions from slag processing	9.7
BATs on emissions to water and wastewater		
9	Treatment of waste water from continuous casting	8.3.6
10	Closed loop water cooling system	8.3.7
11	Adopted BAT conclusions	9.1.6, 9.7
BATs on solid waste and by-products		
12	EAF dust processing for the recovery of heavy metals	8.3.8
13	EAF slag processing	8.3.9
14	Treatment of high alloyed and stainless steel EAF slags	8.3.10
15	Adopted BAT conclusions	9.1.4, 9.7
BATs on raw materials and fuel and energy consumption		
16	Scrap preheating	8.3.2
17	Near net shape strip casting	8.3.11
18	Adopted BAT Conclusions	9.1.2, 9.1.3, 9.7
BATs on noise and vibrations		
19	Techniques to prevent noise emissions	8.3.12
20	Adopted BAT conclusions	9.1.9, 9.7
21	**BATs on soil and groundwater pollution prevention**	
22	**BAT conclusions on Environmental management and Monitoring**	9.1.1, 9.1.7
23	**BAT conclusions on Decommissioning**	9.1.8
BATs on processes associated to EAF: Hot rolling , cold rolling , wire drawing plants and galvanizing of sheet		
24	Hot rolling mill	BREF Ferrous Metals Processing Industry: o A.4.1.2.1-2 o A.4.1.3.1 o A.4.1.3.4-5 o A.4.1.3.7 o A.4.1.7 o A.4.1.8.8-9 o A.4.1.12.2 o A.4.1.13.2 o D.2.2
25	Cold rolling mill	BREF Ferrous Metals Processing Industry:

SUBJECT		BREF SECTION
		o A.4.2.2.7-8 o A.4.2.2.10 o A.4.2.2.11-14 o A.4.2.2.18 o A.4.2.2.19-20 o A.4.2.2.28 o A.4.2.3.8-9 o A.4.2.4.3-5 o A.4.2.4.9-11 o A.4.2.6.1 o A.4.2.6.4 o A.4.3.3.1-4 o A.4.3.5.1 o A.4.3.6.2-3 o A.4.3.8/10 o D.5.2-3
26	Galvinizing of sheet	BREF Ferrous Metals Processing Industry: o B.4.1.3.1-2 o B.4.1.3.4 o B.4.1.3.6-7 o B.4.1.7.3-6 o B.4.1.9
HORIZONTAL ISSUES		
27	Emission monitoring and reporting	BREF on General Principles of Monitoring

BEST AVAILABLE TECHNIQUES (BATS) ASSOCIATED EMISSION LEVELS

ELECTRIC ARC FURNACE STEELMAKING AND CASTING

BAT Conclusions for Electric Arc Furnace Steelmaking and Casting.

- mass of emitted substances per volume of waste gas under standard conditions (273,15 K, 101,3 kPa), after deduction of water vapour content, expressed in the units g/Nm 3 , mg/Nm 3 , µg/Nm 3 or ng/Nm 3
- Mass of emitted substances per volume of waste water, expressed in the units g/l, mg/l or µg/l.

Best Available Techniques / Split views on BAT	**BAT associated emission levels**
Primary and secondary dedusting	
Efficient extraction of all emission sources by using one of the techniques listed below and to use subsequent dedusting by means of a bag filter: I. A combination of direct off-gas extraction (4th or 2nd hole) and hood systems II. direct gas extraction and doghouse systems III. direct gas extraction and total building evacuation (low-capacity electric arc furnaces (EAF) may not require direct gas extraction to achieve the same extraction efficiency).	The overall average collection efficiency associated with BAT is >98 %. Dust level: <5 mg/Nm3, determined as a daily mean value. Mercury level: <0.05 mg/Nm3, determined as the average over the sampling period (discontinuous measurement, spot samples for at least four hours)
Prevent and reduce polychlorinated dibenzodioxins/furans (PCDD/F) and polychlorinated biphenyls (PCB) emissions by avoiding, as much as possible, raw materials which contain PCDD/F and PCB or their precursors using one or a combination of the following techniques, in conjunction with an appropriate dust removal system: I. appropriate post-combustion II. appropriate rapid quenching III. injection of adequate adsorption agents into the duct before dedusting	Polychlorinated dibenzodioxins/furans (PCDD/F) level: <0.1 ng I-TEQ/Nm3, based on a 6 – 8 hour random sample during steady-state conditions. In some cases, the emission level can be achieved with primary measures only

Slag processing	
Reduce dust emissions by using a: I. efficient extraction of the slag crusher and screening devices with subsequent offgas cleaning, if relevant	dust level: < 10-20 mg/Nm³ , determined as the average over the sampling period (discontinuous measurement, spot samples for at least half an hour)
Casting	
Minimise the waste water discharge from continuous casting by using the following techniques in combination: I. the removal of solids by flocculation, sedimentation and/or filtration II. the removal of oil in skimming tanks or in any other effective device III. the recirculation of cooling water and water from vacuum generation as much as possible.	Levels for waste water based on a qualified random sample or a 24-hour composite sample, are: suspended solids <20 mg/l iron <5 mg/l zinc <2 mg/l nickel <0.5 mg/l total chromium <0.5 mg/l total hydrocarbons <5 mg/l

HOT ROLLING MILL: Emission levels associated with the best available techniques (BAT)

All emission figures are expressed as daily mean values. Emissions to air are based on standard conditions of 273 K, 101.3 kPa and dry gas. Discharges to water are indicated as daily mean value of a flow-rate-related 24-hour composite sample or a flow-rate-related composite sample over the actual operating time (for plants not operated in three shifts).

Best Available Techniques / Split views on BAT	BAT-associated emission and consumption levels / Split views on associated levels
Machine scarfing	
• Enclosures for machine scarfing and dust abatement with fabric filters.	split view on dust level: < 5 mg/Nm³ < 20 mg/Nm³

• Electrostatic precipitator, where fabric filters cannot be operated because of very wet fume.	split view on dust level: < 10 mg/Nm³ 20 - 50 mg/Nm³
Grinding	
• Enclosures for machine grinding and dedicated booths, equipped with collection hoods for manual grinding and dust abatement by fabric filters	split view on dust level: < 5 mg/Nm³ < 20 mg/Nm³
Re-heating and heat treatment furnaces	
Careful choice of fuel and implementation of furnace automation/control to optimise the firing conditions. - for natural gas - for all other gases and gas mixtures - for fuel oil (< 1 % S)	SO2 levels: < 100 mg/Nm3 < 400 mg/Nm3 up to 1700 mg/Nm³
• Recovery of heat in the waste gas by feedstock pre-heating • Recovery of heat in the waste gas by regenerative or recuperative burner systems • Recovery of heat in the waste gas by waste heat boiler or evaporative skid cooling (where there is a need for steam)	Energy savings 25 - 50 % and NOx reductions potentials of up to 50 % (depending on system).
• Second generation low-NOx burners	NOx 250 - 400 mg/Nm³ (3% O2) without air pre-heating reported NOx reduction potential of about 65 % compared to conventional.
• Limiting the air pre-heating temperature. Trade-off energy saving vs. NOx emission: Advantages of reduced energy consumption and reductions in SO2, CO2 and CO have to be weighed against the disadvantage of potentially increased emissions of NOx	
Finishing train	
• Exhaust systems with treatment of extracted air by fabric filters and recycling of collected dust.	split view on dust level: < 5 mg/Nm³ < 20 mg/Nm³
Levelling and welding	
• Suction hoods and subsequent abatement by fabric filters	split view on dust level: < 5 mg/Nm³ < 20 mg/Nm³
Waste water treatment/ scale- and oil-containing process water	
• Operating closed loops with recirculating rates of > 95 %	

• Reduction of emissions by using a suitable combination of treatment techniques	SS: < 20 mg/l Oil: < 5 mg/l Fe: < 10 mg/l Cr_{tot}: < 0.2 mg/l Ni: < 0.2 mg/l Zn: < 2 mg/l

COLD ROLLING MILL: Emission levels associated with the best available techniques (BAT)

All emission figures are expressed as daily mean values. Emissions to air are based on standard conditions of 273 K, 101.3 kPa and dry gas. Discharges to water are indicated as daily mean value of a flow-rate-related 24-hour composite sample or a flow-rate-related composite sample over the actual operating time (for plants not operated in three shifts).

Best Available Techniques / Split views on BAT	**BAT-associated emission and consumption levels / Split views on associated levels**
Decoiling	
• Enclosures for machine scarfing and dust abatement with fabric filters.	split view on dust level: < 5 mg/Nm³ < 20 mg/Nm³
• Exhaust systems with treatment of extracted air by fabric filters and recycling of collected dust.	split view on dust level: < 10 mg/Nm³ 20 - 50 mg/Nm³
HCl pickling	
Regeneration of the acid by spray roasting or fluidised bed (or equivalent process) with recirculation of the regenerate; air scrubbing system for the regeneration plant; reuse of Fe2O3 by-product.	Dust 20 -50 mg/Nm³ HCl 2 – 30 mg/Nm³ SO2 50 - 100 mg/Nm³ CO 150 mg/Nm³ CO2 180000 mg/Nm³ NO2 300 – 370 mg/Nm³
Totally enclosed equipment or equipment fitted with hoods and scrubbing of extracted air.	Dust 10 - 20 mg/Nm³ HCl 2 – 30 mg/Nm

H2SO4 Pickling	
Recovery of the free acid by crystallisation; air scrubbing devices for recovery plant.	H2SO4 5 - 10 mg/Nm³ SO2 8 – 20 mg/Nm³
Totally enclosed equipment or equipment fitted with hoods and scrubbing of extracted air.	H2SO4 1 - 2 mg/Nm³ SO2 8 - 20 mg/Nm³
Mixed acid pickling	
Acid regeneration . - by spray rosting - or by by evaporation process	Dust < 10 mg/Nm³ HF < 2 mg/Nm³ NO_2 < 200 mg/Nm³ HF < 2 mg/Nm³ NO_2 < 100 mg/Nm³
• Enclosed equipment/hoods and scrubbing, and additionally: • Scrubbing with H2O2, urea etc. • or NOx suppression by adding H2O2 or urea to the pickling bath • or SCR.	for all: NOx 200 - 650 mg/Nm³ HF 2 – 7 mg/Nm³
Waste water treatment	
Treatment by neutralisation, flocculation, etc., where acidic water blow-down from the system cannot be avoided.	SS: < 20 mg/l Oil: < 5 mg/l Fe: < 10 mg/l Cr_{tot}:< 0.2 mg/l Ni: < 0.2 mg/l Zn: < 2 mg/l
Rolling and tempering	
• Exhaust system with treatment of extracted air by mist eliminators (droplet separator).	Hydrocarbons: 5 – 15 mg/Nm³.
Annealing furnaces	
• For continuous furnaces, low NOx burners.	NOx 250–400 mg/Nm³ without air pre-heating, 3 % O2. Reduction rates of 60 % for NOx (and 87 % for CO)
Levelling and welding	
• Extraction hoods with dust abatement by fabric filters.	split view on dust level: < 5 mg/Nm³ < 20 mg/Nm³

WIRE DRAWING PLANTS: Emission levels associated with the best available techniques (BAT)

All emission figures are expressed as daily mean values. Emissions to air are based on standard conditions of 273 K, 101.3 kPa and dry gas. Discharges to water are indicated as daily mean value of a flow-rate-related 24-hour composite sample or a flow-rate-related composite sample over the actual operating time (for plants not operated in three shifts).

Best Available Techniques / Split views on BAT	**BAT-associated emission and consumption levels / Split views on associated levels**
Pickling	
For of pickling baths with high vapour emission, e.g. heated or concentrated HCl-bath: installation of lateral extraction and possibly treating of the extraction air for both new and existing installations.	HCl 2 – 30 mg/Nm³.
Continuous annealing of low carbon wire and patenting,	
Good housekeeping measures, for the lead bath.	Pb < 5 mg/Nm³, CO < 100 mg/Nm³ TOC < 50 mg/Nm³.

GALVANIZING OF SHEET: Emission levels associated with the best available techniques (BAT)

All emission figures are expressed as daily mean values. Emissions to air are based on standard conditions of 273 K, 101.3 kPa and dry gas. Discharges to water are indicated as daily mean value of a flow-rate-related 24-hour composite sample or a flow-rate-related composite sample over the actual operating time (for plants not operated in three shifts).

Best Available Techniques / Split views on BAT	**BAT-associated emission and consumption levels / Split views on associated levels**
Pickling	
Refer to the chapter of Cold rolling Mills.	

Heat treatment furnaces	
• Low-NOx burners.	NOx 250 - 400 mg/Nm³ (3% O2) without air preheating CO 100 - 200 mg/Nm³
Galvannealing	
• Low-NOx burners.	NOx 250 - 400 mg/Nm³ (3% O2) without air preheating
Waste water	
Waste water treatment by a combination of sedimentation, filtration and/or flotation/ precipitation/flocculation. Techniques or equally efficient combinations of individual treatment measures For existing continuous water treatment plants which only achieve Zn < 4 mg/l, switch to batch treatment.	SS: < 20 mg/l Fe: < 10 mg/l Zn: < 2 mg/l Ni: < 0.2 mg/l Crtot: < 0.2 mg/l Pb: < 0.5 mg/l Sn: < 2 mg/l

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No. 3 Pollution prevention case studies

Recycling of cutting-oils in a metal industry company

Company background

LAMINADOS DE ALUMINIO ESPECIALES, S.A. (LAE). (Rubí. Spain) LAE is a company with 100 workers, approximately. Its main activity is the manufacture of evaporators for refrigeration devices from aluminium cylindrical shells 6 millimetres thick. These shells are cut-off and the evaporator design is drop forged. Then, the shells are welded and hot-rolled. In this first hot rolling is where the cutting-oils, the aim of this case study, are used.

Industrial sector

Manufacture of evaporators for refrigeration devices.

Environmental considerations

Metal-industry firms use coolant liquids such as oil-water emulsions (cutting-oils) in some of their more significant operations such as cutting, machine-tooling, rolling and plating, etc.

Direct contact with metal parts and the course of time are some of the causes of its degradation, which can accelerate the wear of machine-tools and prevent their correct operation. The replacement of old emulsions with new formulations generates a waste which must be treated by an authorized waste company.

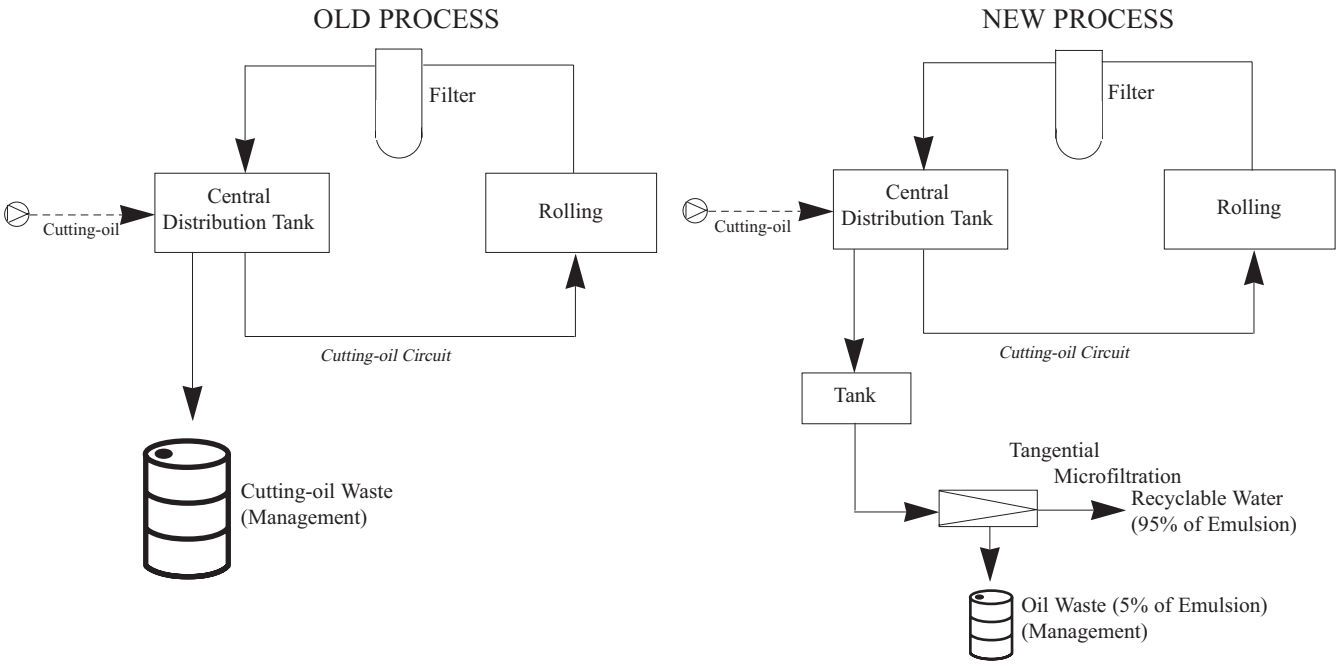
Background

The economic factor played a very important role in LAE's decision to go ahead with the implementation of a closed cutting-oil circuit with the separation of oil and water by means of microfiltration through membranes. This emulsion has a concentration consisting of 5% oils and 95% water. Before minimisation, waste management affected the total emulsion, with the attendant transport and treatment cost. At present, it is only necessary to treat off-site the part corresponding to the emulsified oil when its effective operating capacity is exhausted.

Summary of actions

The modification consisted of the installation of a 3,000-litre underground tank where the recirculated cutting-oil and the spills from manufacturing processes are stored by gravity. After filtering, the cutting-oil is sent to a central distribution tank for reuse. When it is considered to be faulty, the cutting-oil is sent directly from the collection tank to a vertical tank with capacity of 25,000 litres, which feeds an automatic tangential microfiltration unit constituted by 2 filtering modules with ceramic membranes, which have a filtering capacity of 2,900 litres/week. This unit separates the water, which can then be reused thanks to its high quality, from the oils which are no longer reusable and which must be managed as waste.

Diagrams



Balances

	Old process	New process
Waste generation	200,000 l/year	10,000 l/year
Expenses		
Waste treatment	13,333 USD/year	667 USD/year
Waste transport	3,333 USD/year	333 USD/year
Energy	400 USD/year	1,333 USD/year
Personnel	4,000 USD/year	4,000 USD/year
Total cost	21,067 USD/year	6,333 USD/year
Investment		34,067 USD/year
Payback period		2.3 years

Conclusions

Continuous recycling of cutting-oils and the process of concentrating oils by means of microfiltration which LAE has implemented in its Rubí factory, constitutes a good example of conceptually simple action which can be applied to companies that use cutting and machine-tooling fluids in their operations. The semi-permeable membrane technology is sufficiently tested to be successfully used on an industrial scale. One of the advantages which the system presents is its flexibility, since its modular design makes it possible to increase operating capacity with relative ease.

NOTE: This case study seeks only to illustrate a pollution prevention example and should not be taken as a general recommendation.

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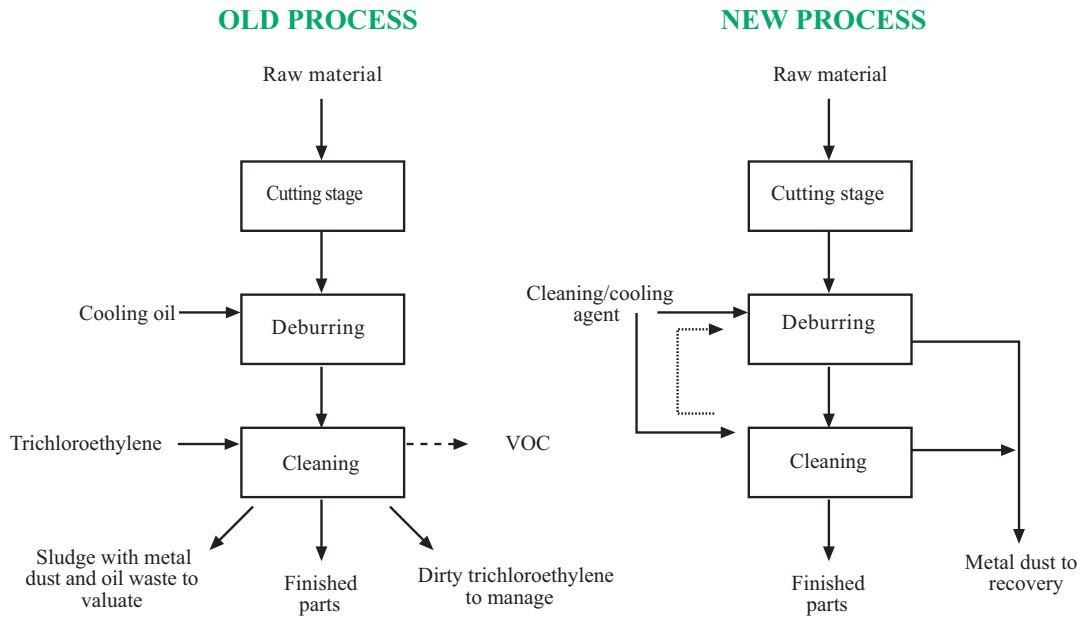
No. 30 Pollution prevention case studies

Elimination of trichloroethylene in the production of metal parts

Company background	Sasonia de Corte Fino, SA. La Roca del Vallès (Barcelona-Spain).
Industrial sector	Metallurgy. Manufacture of thin cut press parts.
Environmental considerations	The company manufactures metal parts with high-precision cuts. The raw material (metal strip coils) is passed through a roller straightening machine to straighten it and is then cut in the press. To facilitate the cut, the material is impregnated with a thin oil layer. Afterwards, to eliminate the rough edges, the parts are smoothed with abrasive bands and metal brushes, and cut oils are also used as cooling agents. The parts without rough edges are totally impregnated with oil. This means that the parts have to be washed and degreased. The company used trichloroethylene that had to be periodically renewed. Consequently, wastes containing trichloroethylene were generated (and externally treated) as well as sludge containing metal dust and oil residues that were recovered with scrap.
Background	The company decided to implement a series of pollution prevention measures at source due to the following reasons: • Possibility of eliminating trichloroethylene in the facility and prevent its potential health and environmental effects (VOC emissions). • Possibility of reducing management costs of wastes generated containing trichloroethylene. • Possibility of unifying the products used in the deburring stage and in the washing of the parts. • Possibility of reducing the handling of the parts between the different stages of the process.
Summary of actions	The actions carried out by the company have consisted in installing a new cleaning machine at the end of every line that eliminates rough edges. These machines use a non-hazardous water-based cleaning agent (96% deionized water). The characteristics of this cleaning product, which is also a lubricating/cooling agent, enable it to be used in the deburring stage. This way, the use of lubricating oils in this subprocess may be eliminated. Cleaning machines include a system to separate oils (from the cutting stage) and metal dust (from the deburring stage). Thus, the cleaning agent may be recycled and after being used in the cleaning stage may be reused in the deburring stage. With the carrying out of this project, all foreseen background objectives have been achieved.

Diagrams



Note: Flows of materials are only shown in those stages where actions have been implemented.

Balances

	Old process	New process
Balances of material		
Trichloroethylene consumption	9,600 kg/year	0 kg/year
Consumption of cooling oil	6,500 kg/year	0 kg/year
Consumption of the new cleaning agent	0 l/year	700 l/year
Economic balances		
Trichloroethylene consumption	6,058 €/year	0 €/year
Consumption of cooling oil	7,813 €/year	0 €/year
Trichloroethylene management	4,788 €/year	0 €/year
Management of sludge containing trichloroethylene	847 €/year	0 €/year
Consumption of the new cleaning agent	0 €/year	3,142 €/year
Total savings		16,364 €/year
Investment		€79,393
Payback period		4.85 years

Conclusions

The advantages obtained when redesigning productive processes with environmental criteria are clear. In this specific case, after the use of the new cleaning agent, the use of halogenated solvents has been totally eliminated and thus the environmental quality of the company and work and health conditions have been improved without damaging the quality of the parts produced required by the company's customers.

In addition, the characteristics of this new product have enabled its use as a cooling agent in the deburring stage and the elimination of the consumption of cooling oils in this process stage.

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No. 48 Examples of waste and emission minimisation actions

Installation of immersed compact piping for heating flux removal baths

Company background

VALTI (Montbard, France) is a company which manufactures steel tubing. It employs some 260 people and manufactures 41,552 tonnes of tubing per year. It is a member of the Vallourec group, a world leader in the manufacture of seamless steel tubing for various industrial sectors.

Industrial sector

Manufacture of steel tubes for the bearings industry.

Environmental considerations

Flux removal is an essential stage in the manufacture of steel tubing, and for this different kinds of heated baths have to be used (acid baths, rinsing baths etc.).

The baths were previously heated by a boiler:

- The acid baths were heated by passing steam, generated by the boiler, through a graphite exchanger.
- The rinsing baths were heated by immersed coils with condensate recovery.

Background

In 1999, the company found itself faced with the problem of bringing its boiler into line with standard NF E 32020 on steam generators. Since the boiler was by then very old, it was decided to replace it. Two alternatives were considered:

- Purchase of a new boiler.
- Investment in a compact immersed piping system.

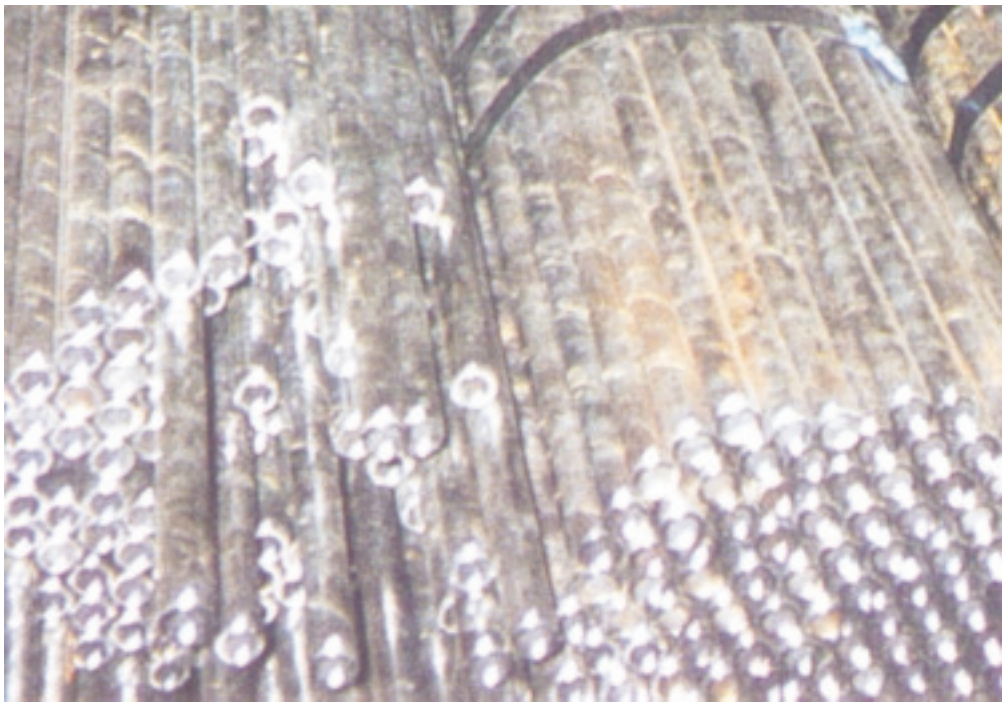
Summary of actions

Despite the larger initial investment involved, the company finally opted for the compact immersed piping solution, which enables a 50% reduction in operating costs thanks mainly to the energy savings obtained.

To ensure better heat exchange, some of the baths had to be modified. With others, the pipes had to be installed in auxiliary tanks.

Installation of a new heating system involves a total re-think of heating needs, given the potential for savings which compact immersed pipes provide.

With the application of this new operational procedure the company has made a 40% saving on the energy consumed in heating the baths. At the same time, safety has been improved thanks to the elimination of pressurised steam, while water consumption (and the associated generation of condensates) has also been reduced.



Pipes under treatment

Balances	Old process	New process
Material balance		
Energy consumed in heating baths (MWh/y)	10,867	6,520
Savings (MWh/y)		4,347
Economic balance		
Energy savings (€/y)		58,500
Savings in maintenance costs and treatment of wastewater (€/y)		21,000
Annual savings (€/y)		79,500
Investment (€)		75,000
Payback period		11 months

Conclusions

In addition to the energy savings obtained, the elimination of steam from the flux removal installation has enabled a more simplified piping layout and reduced the risks associated with steam generation.

This practical case has been extracted from the ADEME's publication: *Bonnes pratiques énergétiques dans l'industrie*.

NOTE: This case study seeks only to illustrate a pollution prevention example and should not be taken as a general recommendation.

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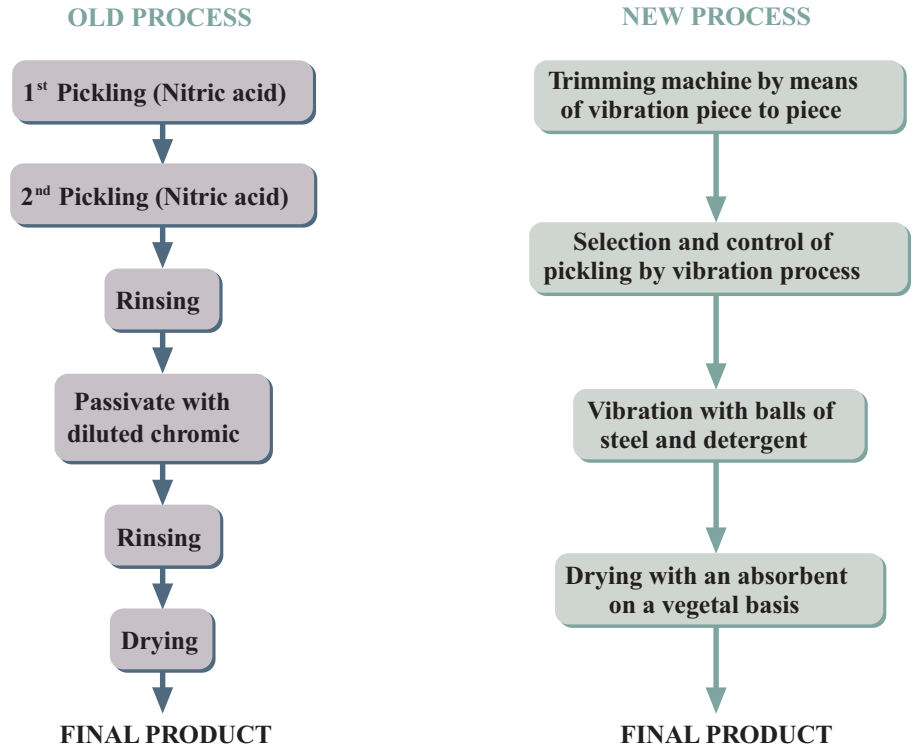
No. 51 Pollution prevention case studies

Substitution of a system of chemical pickling by a process of pickling by vibration

Company background	Munne Alsina, SL (Cornellà de Llobregat, Spain)
Industrial sector	Steel and metal industry. Non-iron metal forge and hot hobbing.
Environmental considerations	The company is dedicated to forging and hot hobbing of non-ferrous metals using brass, bronze and other metals as raw materials to obtain a wide range of articles, basically hobbed pieces for several industrial sectors. The company also manufactures special pieces upon request by its customers. The production process consists of the following steps: first, the moulds are produced according to the pieces to be made; second, the pieces are obtained by means of forging presses that perform, in the same machine, cutting, hobbing and typing. Finally, the finishing process of the brass pieces is made. Finishing is carried out by means of chemical pickling with nitric acid and chromic passivation. Between operations, the necessary rinsings are carried out. During the finishing process, water and acid raw materials are consumed, generating sludge with heavy metals during the treatment of the waste flows in the wastewater treatment plant.
Background	In the production process described in the previous section, Munne Alsina, SL generated acid and chromic aqueous waste flows which, along with the drags with heavy metals, generated sludge in the wastewater treatment plant and water with nitrates. The amount of sludge generated was 69 tons per year. Therefore, the company considered as objectives: • To reduce waste generation at source. • To make savings in the purchase of raw materials.
Summary of actions	In order to carry out the objectives proposed, a new installation was installed to replace the process of chemical pickling. This new installation consists of a trimming machine which works by vibrating each individual piece and pickling by vibration with steel balls and detergent which, through physical contact, makes it possible to obtain the desired quality in the pieces. With this new installation, the following is achieved: • Reduction in water consumption. • Reduction in electricity consumption. • Reduction in raw materials consumption. • Reduction in the generation of sludge in the wastewater treatment plant. • Less use of hazardous raw materials.

Diagrams



Balances

	Old process	New process
Material balance		
Sodium hydroxide (kg/y)	42,911	5,871
Sodium bisulphite (kg/y)	11,880	0
Nitric acid (kg/y)	48,031	0
Chlorhydric acid (kg/y)	2,200	0
Dilute chromic (kg/y)	15,510	0
Vegetal-based absorbent (kg/y)	0	500
Detergent (kg/y)	0	5,000
Water (m^3/y)	6,497	5,493
Energy (kW/y)	92,000	42,000
Sludge (t/y)	69	5
Economic balance - Savings		
Raw material (€ /y)		21,223
Water (€/y)		911
Energy (€/y)		3,900
Treatment of sludge (€/y)		5,050
Total savings (€/y)		31,084
Investment (€)		106,284
Payback period		3.42 years

Conclusions

By carrying out this project, the company has been able to reduce 95.44% the consumption of raw materials, sludge equivalent to 92.75% of the generated waste volume and finally, reduce 15.45% the water consumption. In addition, the quality of the wastewater has been improved, which favours its recycling by means of a previous process of regeneration. This action of pollution prevention at source is part of the environmental policy of the company since it is included within the framework of continual improvement initiated by the company in 2000.

NOTE: This case study seeks only to illustrate a pollution prevention example and should not be taken as a general recommendation.

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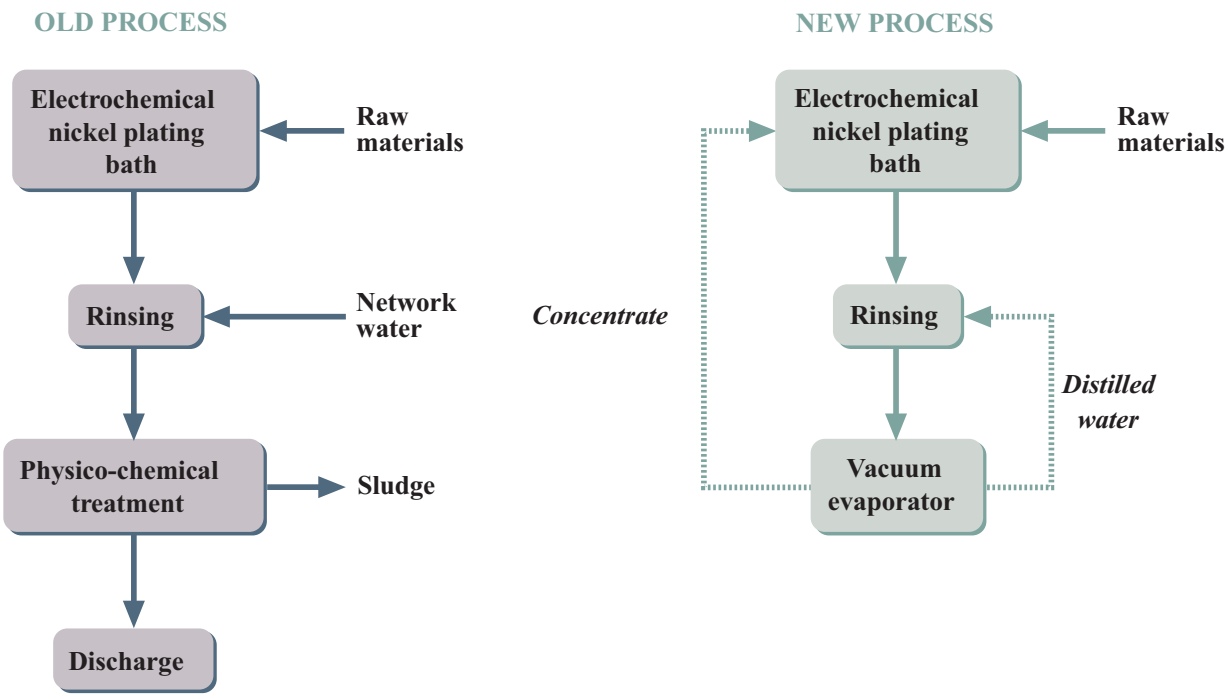
No. 52 Pollution prevention case studies

Recycling of rinsing water from electrochemical nickel plating by means of a vacuum evaporator

Company backgorund	Vitri Electro-Metalúrgica, S.A. (Torelló, Spain)
Industrial sector	Metal industry. Manufacture of illumination apparatuses.
Environmental considerations	The company Vitri Electro-Metalúrgica, S.A. manufactures caps for electrical lamps. One of the productive processes of the company, surface treatment, and more specifically, electrochemical nickel plating, is the one generating the most relevant environmental impacts. These impacts result in the generation of wastewater and sludge with a high nickel content.
Background	The factors that drove the company to carry out the investment required were the following: • Desire to reduce the wastewater pollution load generated in the process. • Reduction of costs of raw materials from nickel plating. • Reduction of cost for treating the sludge generated.
Summary of actions	The action that Vitri carried out consisted of installing a vacuum evaporator to treat water from the rinsing baths of electrochemical nickel plating. The system uses heat energy in order to evaporate the liquid part and concentrate the salts dissolved in the wastewater. The system used is vacuum evaporation, which allows evaporating an aqueous solution at temperatures as low as 30-40ºC, thus avoiding excessive and unnecessary consumption of energy to bring the solution to boiling point and, simultaneously, avoiding the degradation of certain organic components present in the bath. The action performed makes it possible to obtain, on one hand, distilled water that is recirculated to the rinsing baths and on the other hand, a concentrate of reagents that is recirculated to the nickel plating bath.

Diagrams



Balances

	Old process	New process
Material balance		
Nickel chloride (kg/y)	12,100	1,600
Nickel sulphate (kg/y)	7,020	480
Boric acid (kg/y)	3,900	220
Nickel anodes (kg/y)	10,880	6,400
Water (m^3/y)	10,000*	6,360*
Sludge (t/y)	40.68*	12.64*
Economic balance - Costs		
Raw materials (€/y)	236.6 thousand	95.9 thousand
Water (€/y)	6.0 thousand	3.8 thousand
Treatment of sludge (€/y)	7.6 thousand	2.5 thousand
Total costs (€/y)	250.2 thousand	102.2 thousand
Total savings (€/y)		140.0 thousand
Investment (€)		132.2 thousand
Payback period		0.9 years

* Values of the electrochemical nickel plating line including its subprocesses.

Conclusions

Installing a vacuum evaporator in the company Vitri Electro Metalúrgica, S.A. resulted in an interesting action of pollution prevention at source. The new process allows the company to reduce the pollution load and at the same time, the water consumption, the raw materials consumption and the amount of sludge generated in the physical-chemical wastewater treatment plant.

NOTE: This case study seeks only to illustrate a pollution prevention example and should not be taken as a general recommendation.

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No. 53 Pollution prevention case studies

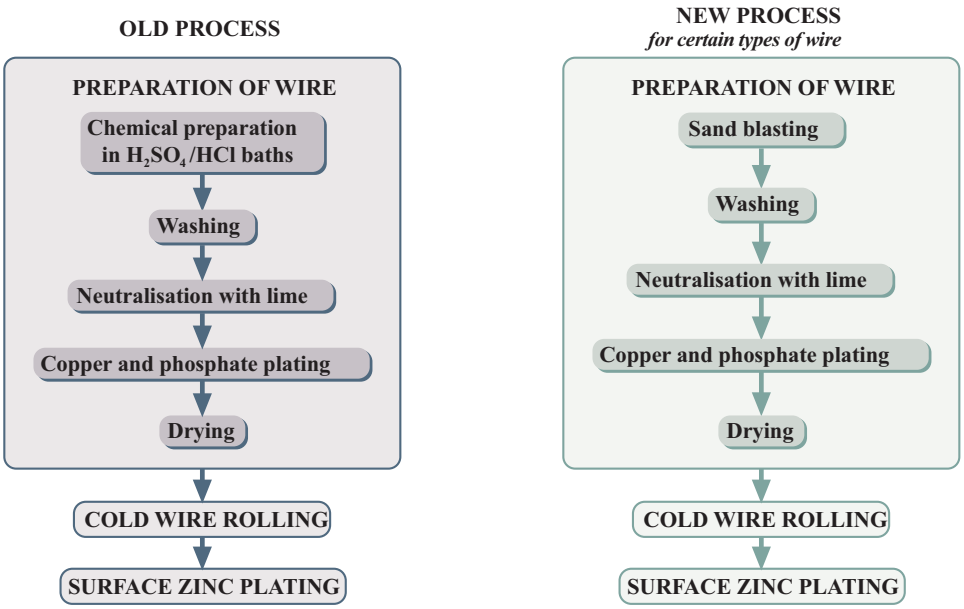
Cleaner production in black metallurgy

Company background	DD «ŽICA», Sarajevo (Sarajevo, Bosnia and Herzegovina), was established in 1950 as a working department for wire and nail production originally separated from the steel factory Zenica. During the period from 1950 to 1962, the industry produced wire and nails with constantly increasing production from 3,000 tons to 27,000 tons per year, and increasing number of employees from 225 to 630. Following the economic development of the country, the production in the factory increased, both by quantity and assortment. In 1985, production reaches approximately 186,000 tons of different products, while in 1990 the production was 120,000 tons with 2,000 employees.
Industrial sector	Production of wire and wire-like products using cold rolling process.
Environmental considerations	The major problems in black metallurgy are: • excessive water consumption and wastewater generation; • excessive energy consumption (electric energy and natural gas); • excessive consumption of lubrication materials, chemical substances, etc.; • complex treatment requirements for wastewater and other waste products generated in the production process.
Background	The industrial process of wire rolling consists of the following steps: 1. Preparation of wire surface for rolling: - chemical preparation in H_2SO_4 (12-18%) or HCl (15-20%) baths to remove iron oxides (FeO, Fe_3O_4 and Fe_2O_2) from the wire surface - washing in hot water (90ºC) - neutralization with lime at high temperature (85-95ºC) - copper plating to prevent corrosion and phosphate plating to enable higher rolling speeds, further processing of wire to finish product and prevent corrosion - drying in ovens at temperatures ranging from 0-350ºC 2. Rolling followed by thermal treatment for the purpose of changing the structure of steel wires. 3. Zinc, copper or phosphate plating depending on the type of wire unwinding: - pre-heating in soluble lead baths at 600ºC and plating in zinc/copper baths - wiping and cooling - winding The analysis of the industrial process revealed the following problems: • Excessive water consumption in the production line. • Excessive energy consumption in the form of electric energy, gas and steam. • Excessive consumption of chemicals: sulphuric acid, inhibitors, lime, phosphate, copper sulphate, etc. • Large quantity of water needed for recycling. • Large quantity of sludge that should be recycled before disposal on the municipal solid waste landfill site. • The wastewater treatment plant was destroyed during the war activities.
Summary of actions	Detailed analyses of the technological process showed that chemical preparation of wire surface for rolling accounts for most of the costs in the production chain. This process produces enormous quantities of wastewater that should be treated before reuse or discharge into the water stream.

After detailed analyses of the technological process and the latest achievements in science and technology, it was decided to introduce a new technological process of wire surface preparation prior to rolling, based on blasting by sand. It was anticipated that this would provide revenue and help in problems with wastewater generation.

According to the new technological solution, chemical preparation of wire is avoided in 90% of production, which eliminates the use of chemicals and water, and decreases energy consumption as well.

Diagrams



Balances

	Old process		New process	
	Quantity	Cost (€)	Quantity	Cost (€)
Material balance				
Sulphuric acid	195.5 t	18,049	0	0
Inhibitor	579,458 kg	5,823	0	0
Carbamide	579,458 kg	5,823	0	0
Lime	9,414 kg	965	0	0
Water	17,383 m^3	23,174	0	0
Natural gas	13,035.6 Nm^3	4,010	0	0
Steam	1,448,400 kg	40,852	0	0
Electric energy	225,226.2 KWh	15,592	173,815 KWh	11,969
Steel sand	0	0	72,423 t	3,714
Wastewater neutralisation	17,338 m^3	35,565	0	0
Water fee		18,461		4,923
Total expenses		168,314		20,606
Savings				147,707 € /y
Investment				297,435 €
Payback period				2.013 years

Conclusions

Along with environmental benefits, the wire factory achieved enormous economic benefits by decreasing consumption of electric energy by 86.57% and total expenditures by 87.76%. The complete program was developed for production level in 2002, i.e. 7,242 tons of wire treated with sand blasting. The payback period for this investment is 2.013 years. If this program had been developed at the production level of 1991, the payback period would have been approximately 1.68 months.

NOTE: This case study seeks only to illustrate a pollution prevention example and should not be taken as a general recommendation.

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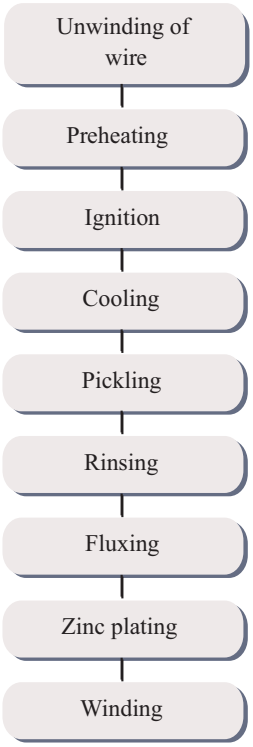
No. 80 Pollution prevention case studies

Cleaner production in the metalworking industry

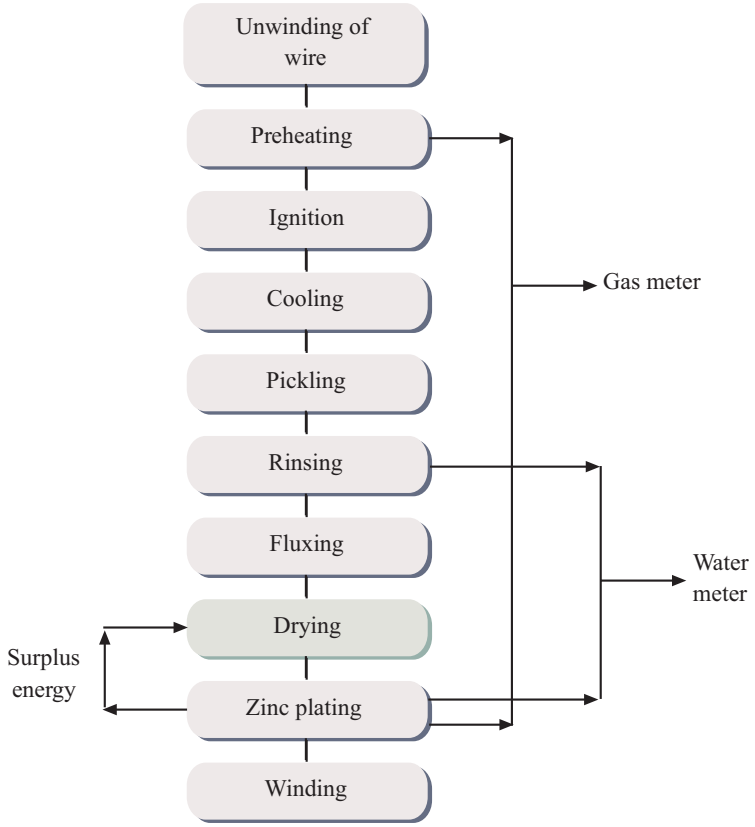
Company	Žica Sarajevo is a medium-sized enterprise producing wire and wire products. The production programme comprises low-carbon wire, high-carbon wire and steel ropes. Annual production amounts to 8,376 tons of wire. The total number of employees is 262.
Industrial sector	Metalworking industry, production of wire and wire products.
Environmental considerations	Based on an environmental analysis of the entire company, it was determined that the most interesting unit for a detailed diagnosis and introduction of cleaner production measures was the zinc plating unit. The analysis showed that many types of waste were generated in this plant, and that there were opportunities for the introduction of some improvements in the work method in this continuously operating unit.
Background	Within the EC LIFE Third Countries project "Capacity Building in Cleaner Production", 2002-2005, the analysis carried out in the unit chosen as the focus of diagnosis revealed problems that were typical for iron and steel production: • Excessive water consumption, and resulting wastewater generation that needed to be addressed. • Excessive energy consumption: electricity, gas. • Excessive consumption of different lubricants, chemicals, salts and similar agents. An additional problem was an existing wastewater treatment plant, which was not operating due to physical damage and malfunctioning of automatic mechanisms.
Summary of action	A team of experts identified a set of minimisation measures, of which the three most interesting ones were implemented, while the remaining ones would be implemented in due time. Measures focusing on the reduction of energy and water consumption and raw material management were selected as priority, including: • The continuous measuring of gas and water at points where it was the most necessary and feasible, with the purpose of consumption control and its their reduction. Two gas meters and two water meters were installed. One gas meter was installed to measure the gas consumption in the preheating and ignition process, and the other in the zinc plating process. Water meters were installed to measure water consumption in the rinsing process, after pickling and in the zinc plating process. • The surplus of thermal energy from the zinc bath was used for the drying of wire after the fluxing process in the drying chamber. That is how the zinc plating process was technically improved. • Monitoring of auxiliary metals consumption for their rational use.

Diagrams

Zinc plating process before the introduction of cleaner production measures



Zinc plating process after the introduction of cleaner production measures



Balances

Energy Consumption	Old process			New process		
	Based on production of 1,665 t of wire		Costs (€)	Based on production of 1,665 t of wire		Costs (€)
Water	18,981 m³	11.4 m³/t	25,795	5,334 m³	3.2 m³/t	7,249
Natural gas	265,867.2 Sm³	159.68 Sm³/t	79,078	247,218 Sm³	144.03 Sm³/t	73,532
Acid	46,620 l	28 l/t	4,782	24,120 l	14.4 l/t	2,474
Total costs			109,655			83,255
Annual savings for the amount produced per programme						26,400
Annual savings for the amount produced in 2003						54,204
Total investment						500
Payback period of the investment						Immediate

Conclusions

By applying the above-mentioned measures, within one year the company reduced, water consumption by 72%, natural gas consumption by 10%, and the amount of acid consumed by 49%, accounting for an annual saving of €26,400, with an immediate payback on investment.

NOTE: This case study seeks only to illustrate a pollution prevention example and should not be taken as a general recommendation.

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STEEL WORKS
-AN EXAMPLE OF IPPC PERMIT-

IPPC UNIT: INTEGRATED POLLUTION CONTROL SECTION
REGIONAL MINISTRY OF ENVIRONMENT AND LAND PLANNING
REGION OF MADRID

Angela Pérez Rizaldos
Area de Control Integrado de la contaminación. Consejería de medio ambiente y ordenación del territorio- Comunidad de Madrid

Activity Description

FACILITY FIGURES

Location:	Comunidad de Madrid
Starting date (aprox):	70,s
Main activity:	Steel production and hot forming
Staff:	325
Raw material:	Ferrous scrap
Source of energy:	Electricity and natural gas
End Product:	Structural steel profiles
Annual profile production	418.582 t

Activity Description

The facilities have two different areas:

STEEL WORKS where the ferrous scrap is smelt and the composition is adjusted: (secondary metallurgy).Arc electric furnace (melting).Arc electric furnace (second metallurgy).

HOT FORMING OF STEEL

Furnace

Electrically powered rollers.

Process Description (1)- STEEL WORKS

Scrap
Lime, O2
Carbon , etc

Electric arc furnace:
- Charging the scrap/raw material
- Melting and oxidized
- Removing the slag
- Casting

Ferroalloys, Fluxes, etc

Ladle and Electric Arc furnace
Secondary Metallurgy: adjustment of the Composition:

Continuous Cast to a mold and cooling

Semi finished steel

Process Description (2)- HOT FORMING STEEL

Semi finished steel: Beam blank

Furnace
Optimum temperature: 1000-1100 ºC

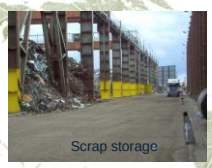
Electrically powered rollers:
Steel forming
+
Cooling system

Structural profile

Activity Description

Auxiliary Activities

Raw Material storage (SCRAP STORAGE).
Slag storage.
Cooling system in steelworks
Cooling system in steel forming activities.
Hazardous and non hazardous waste storage.



Scrap storage

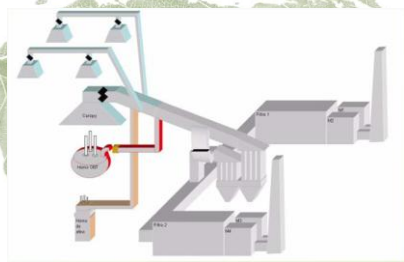
Slag storage

These activities are a source of potential impacts. For instance, handling Slag produces diffuse emissions to air and it will need actions to prevent the impact in the environment

Activity Description

	SOURCE OF EMISSION	ABATEMENT SYSTEM	EMISSION
STEEL WORKS	1. Electric arc furnace (melting); auxiliary fuel: natural gas	Common gas colletion for both furnaces connected to two fabric filters. Each one is connected to a stack	Point 1
	2. Electric arc furnace. (adjustment of composition)		Point 2
STEEL FORMING	3. Natural Gas furnace	-	Point 3

Air emission Sources 1 and 2. Points of emission 1 and 2



Facility s situation before IPPC permit

EMISSION TO AIR
Off gas collection system for sources 1 and 2 and fabric filters.
Dust concentration monitor in points 1 and 2.

MEASURES TO SAVE WATER
Closed loop water cooling system.

MEASURES TO PREVENT EMSSIONS TO SOIL AND GROUNDWATER
Scrap storage in a paved area
Slag storage in a paved area

IPPC Permit

REFERENCE DOCUMENT CONSULTED DURING THE ELLABORATION PROCESS OF THE PERMIT

	REFERENCE DOCUMENTS
STEEL WORKS	Best available techniques. Reference Documents on the production of Iron and Steel
HOT STEEL FORMING	Best Available Techniques. Reference Documents in the ferrous metals processing Industry

PERMIT´S CONDITIONS STRUCTURE

Annex I Technical measures and emission limit values.

Annex II Monitoring requirements and follow- up reports

IPPC permit: Annex I- AIR

1.TECHNICAL MEASURES TO PREVENT AIR POLLUTION

Steelworks building: Maintenance of the building´s enclosure to prevent diffuse emissions.

Improvement of the building for the slag storage.

Improvement of the slag cooling to prevent diffuse emissions.

2. EMISSION LIMIT VALUES (ELV) (daily mean value).

Emissions limit values based on the Document reference.

IPPC permit: Annex I- WATER

1.TECHNICAL MEASURES.

Rain water drainage system: Implementation of a suspended solid precipitator and oil separator system.

2. EMISSION LIMIT VALUES.

Compliance of the autonomous Law for wastewater emission to the local sewer system.

Emission limit values for suspended solids and Zinc based on the Document reference.

IPPC permit: Annex I-WASTE

1. **Closed loop water cooling system: Improvement in the decanter:**
   Automatic system to remove the suspended solids.
   Drying system for the sludge removed.

2. **Outside slag storage.**

   Storage in a paved area with roof and three walls to avoid diffuse emissions

3. **Compliance of binding rules about hazardous and non hazardous wastes.**

IPPC permit: Annex I

SOIL

Paved areas maintenance

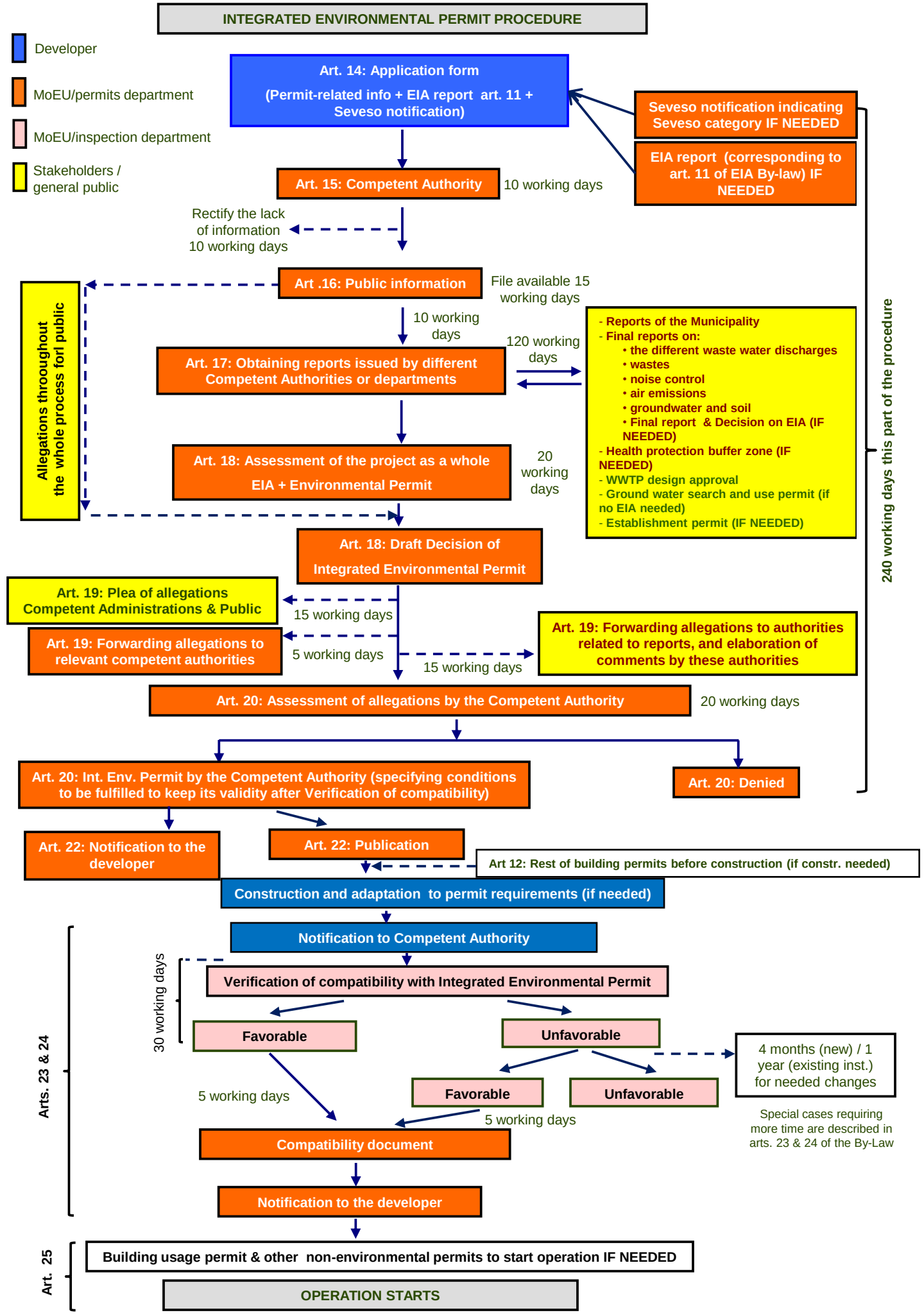
ACCIDENTS AND INCIDENTS

Protocol of actions in case of operation´s failures or accidents.

Obligation to inform to the IPPC Unit in case of accident or incident.

IPPC permit: Annex II

	Monitoring	Frequency	Parameters
Wastewater emission	Emission measurement	Every six months	All parameters with ELV
Ground water	Quality report	Yearly	Quality parameters
Emission to air	Points 1 and 2 Emission measurement	continuous	Dust, CO, NO_x
		Periodic (yearly)	All with ELV, except measured in continuous
	Point 3 Emission measurement	constant	NO_x, CO
		Periodic (yearly)	All with ELV, except measured in continuous
WASTE	Register and Report	Annual Report Half Yearly reports	Quantities and types of waste produced


INTEGRATED ENVIRONMENTAL PERMIT PROCEDURE
Developer
MoEU/permits department
MoEU/inspection department
Stakeholders / general public
Art. 14: Application form
(Permit-related info + EIA report art. 11 + Seveso notification)
Seveso notification indicating Seveso category IF NEEDED
EIA report (corresponding to art. 11 of EIA By-law) IF NEEDED
Art. 15: Competent Authority
10 working days
Rectify the lack of information
10 working days
Art .16: Public information
File available 15 working days
Allegations throughout the whole process for public
10 working days
Art. 17: Obtaining reports issued by different Competent Authorities or departments
120 working days
- Reports of the Municipality
- Final reports on:
• the different waste water discharges
• wastes
• noise control
• air emissions
• groundwater and soil
• Final report & Decision on EIA (IF NEEDED)
- Health protection buffer zone (IF NEEDED)
- WWTP design approval
- Ground water search and use permit (if no EIA needed)
- Establishment permit (IF NEEDED)
Art. 18: Assessment of the project as a whole
EIA + Environmental Permit
20 working days
Art. 18: Draft Decision of Integrated Environmental Permit
Art. 19: Plea of allegations Competent Administrations & Public
15 working days
Art. 19: Forwarding allegations to relevant competent authorities
5 working days
15 working days
Art. 19: Forwarding allegations to authorities related to reports, and elaboration of comments by these authorities
240 working days this part of the procedure
Art. 20: Assessment of allegations by the Competent Authority
20 working days
Art. 20: Int. Env. Permit by the Competent Authority (specifying conditions to be fulfilled to keep its validity after Verification of compatibility)
Art. 20: Denied
Art. 22: Notification to the developer
Art. 22: Publication
Art 12: Rest of building permits before construction (if constr. needed)
Construction and adaptation to permit requirements (if needed)
Notification to Competent Authority
30 working days
Verification of compatibility with Integrated Environmental Permit
Favorable
Unfavorable
4 months (new) / 1 year (existing inst.) for needed changes
Favorable
Unfavorable
5 working days
5 working days
Special cases requiring more time are described in arts. 23 & 24 of the By-Law
Arts. 23 & 24
Compatibility document
Notification to the developer
Art. 25
Building usage permit & other non-environmental permits to start operation IF NEEDED
OPERATION STARTS