Update on CEPSA Refinery Campaign
ESG Analysis Nov 2009

We can confirm that a copy of the audit carried out on CEPSA Refinery CG, San Roque, has now been received. [1]

The audit was directed at investigating a particularly serious sulphur incident as well as intermittent flaring episodes produced at the Refinery during the early part of 2007. The impacts of such upsets on surrounding neighbourhoods had provoked outrage and public protest which led to the Consejeria De Medio Ambiente to order this independent audit. As the audit was running through the period during which industries like CEPSA would be issued with a new operating licence under the IPPC, it was made clear via official public statements that the audit results would be scrutinised by La Junta for IPPC compliance. (Integrated Pollution and Prevention Controls)[2].[3]

(*Attached are copies of statements made to the press by Spanish authorities at the time strongly criticising the polluting incidents produced by CEPSA, Campo de Gibraltar[4]).*

Our initial analysis of the audit does not hold CEPSA in good light. Moses Benrimoj, technical adviser to the ESG, has studied the audit and picked out numerous contradictions and areas at the plant which are described as being sub standard and not meeting BAT; (Best Available Technology). The IPPC licence demands that industry raises its standards to apply BAT and the reference to the lack of such adherence is peppered throughout the audit. This reveals a plant which is far from meeting its IPPC obligations. The impact from this industry therefore continues to be unnecessarily polluting, harmful and even dangerous in some areas.

No doubt in the knowledge that the audit was making its way to the public domain, CEPSA recently held a PR dinner where it celebrated its financial successes and made statements about the huge investment the company was "about to make" in safety issues, reducing greenhouse gases and improving its environmental performance".

It is shameful that only through public protest has La Junta exerted any type of controls over companies like CEPSA. It is why it is critical that pressure is maintained to ensure that public promises made by CEPSA, usually at times when it feels the pressure, are honoured in a transparent and accountable manner *and* within a given time scale.

It is very likely that the final analysis on the audit will confirm that the plant has and continues to contravene EU Directives. This lack of regulation and poor standards has allowed an environmental degradation of enormous proportions to take place.[5] These highly toxic emissions may have caused and exacerbated serious illness and possibly even higher mortality in the area.[6] Public pressure led by the ESG in Gibraltar has succeeded in seeing the launch of an independent Epidemiological Study which is now underway to investigate the rates of cancers locally and potential links to heavy industrial pollution. Firm action must now be taken to accelerate the cleaning up process at the CEPSA Oil Refinery as a historic and current major polluter in the region.

The ESG produced an interim analysis which, along with the original audit, has been studied by our international technical advisers and is attached here for information purposes.

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[1] Audit ordered in April 2007 and produced in April 2008
[2] IPPC certification in force since November 2007 for industries to be allowed to operate while applying BAT
[3] Article in media on La Junta specifically mentioning reviewing CEPSA compliance with its IPPC licence in light of the audit results
[4] More press articles interviewing Consejeria
[5] See ESG website for various reports including GCM Monitor Report on CEPSA Refinery www.esg-gib.net
[6] See Short Report on clusters of higher mortality by team led by Professor Joan Benach- University of Barcelona – on www.esg-gib.net

ESG Analysis of Audit on CEPSA Refinery – PART 1-

General commentary:

- The ESG believes the report highlights important issues. Firstly the "flavour" of the document is that the industry is following good practice, that improvements over time are ensuring its impact is constantly being improved upon, and that, in fact, it excels in many cases over emission levels in other parts of Spain, or even Europe!!
- The ESG and its cross border colleagues, would strongly dispute these assumptions. Expert advisors to the groups have described the Bay refinery to be in a shocking condition of third world standards (2004), such has been the lack of regulation over its massive expansion programme carried out over the last 15 years, protected under the Grandfather Clause (GC) status.
- This audit has been long awaited as it was expected to have revealed what has long been known, that you cannot run an industry of this size and impact for forty years **without** applying strict environmental stds it has managed to avoid under the GC clause, to then be assessed and confirmed to be doing so. The assessments made by undoubtedly prestigious bodies in the first 13 pages appear to be describing another plant altogether and to be dressing up a historically shameful and toxic industry. It is our view (ESG) that the audit report becomes meaningful and bears a link to reality from **page 14 onwards**.

Specifically:

1. **Data** upon which assessments are being evaluated is predominantly from the industry itself and has not been independently verified by this team of auditors
2. It appears that **inspection for compliance** to ISO certification by AENOR is carried out every three years within an internal and external programme. This may not give a true picture of the standards routinely adopted by the plant which could be revealed under spot check inspections for verification
3. Monitoring data from around the Campo de Gibraltar area is collected from **16 units**- 3 of which belong to the Consejeria; 6 belong to the Refinery and the remainder belong to other industries. In other words, it is difficult to accept this data as independent- **also and important** - while additional real time data is purportedly being transmitted direct to La Junta (*page 13, para 1*) – it would be important to see what this data shows –(ie peaks and types of pollutants)
4. In any event the data collected by the monitoring units are measuring **stack emissions**. What of **fugitive emissions and/or leaks**?
5. Report is also contradictory- whereas Refinery is described in the main to be adequately controlling emissions, under **recommendations** it clearly states that environmental impacts/problems are usually linked to **operational failures** within the plant
6. Recommendations are made to revise **maintenance programme**s with env impact in mind and to ensure strict follow through see *page 14,1st bullet point*
7. To expand use of **BAT** - *Best Available Technology - page 14, 2nd bullet point*
8. **To set up** a tight system for the recording of incidents and upsets- If in place this can be very effective in managing not only environmentally impacting problems, but also those affecting health and safety of personnel, and the security of the plant itself. Such a system would enable senior management of the site in question to properly investigate each incident to ensure that steps are taken to avoid re-occurrence. The report then states that this **new system of vigilance** and action needs to be periodically reviewed and improved upon to ensure progress in this area.

These last few points clearly highlight the manner in which the report is biased in favour of industry by firstly commending its operational standards to be adequate and then itemising a list of basic health and safety requirements and environmental improvements which illustrate that the plant is currently not following good practice in these areas-CONTRADICTION

Electrical Systems:-

Various important points are made about electrical and energy systems.

Some picked out as examples:

- The report identifies that **80% of the incidents** at the Refinery are caused by electrical failure– (see *page 14, last paragraph*)
- Refinery has capacity to **transfer power source** from external to internal (island power supply) – but systems to do this are either **faulty or inadequate.** Report states that this area is **PRIORITY** as a measure to reduce environmental impact as well as reduce the economic loss to the plant from interrupted activity(*page 14/15)*
- It states the **failure** by the plant to have in place a system of immediate back-up which should be possible given its cogeneration plant on site.
- The report makes several proposals for **immediate action** to further stabilise electrical supply to the plant suggesting that there is a lot to be done in this respect – **far from practising BAT or best practice.**

VOC's (volatile organic compounds) and Odours:

General Commentary

While the auditors recognise some improvements in this area, they cite several areas which remain unaddressed and cause offensive and harmful emissions to escape to the air and water systems. *(See pages 13 & 16)*

Furthermore the report refers to odours and offensive smells. Nowhere is there a mention of the **harmful effects** of these toxic substances when ingested or inhaled.

The following are some examples of specifics identified by the auditors:

(See pages 16 &17)

- Storage Tanks **inadequately capped** to keep **VOC's** from releasing to atmosphere (as is required under **BAT**)
- Use of Vapour Recovery Systems to be used throughout the plant
- Industrial **Waste Water treatment** produces offensive odours in neighbourhoods
- Changes **must be introduced** to limit these air and water pollutants – especially of **benzene a proven carcinogen**
- **No waste water movement** to be open to air
- **Enclosed systems** necessary and a solid maintenance programmes in place to ensure integrity

EMISSIONS of SO_2 and NO_x

(see pages 17 & 18)

- **Sulphur Recovery Plants** work towards the recovery of **99.5% (BAT) of sulphur** – this standard for recovery is not happening in the CEPSA Refinery because the plant **is not running adequately**/as it should
- Report recommends the **increase of the efficiency** of the sulphur recovery plant

- Report recommends review of **elimination of Nitrogen Oxides** and the use of **urea additives and scrubbing** to lower emission levels

- Report examines **energy supply** to power plant operations. It suggests that the Refinery should look at **increasing its gas supplies** to power its operations thus **further eliminating** levels of SO_2, NO_x and particulates. (BAT)

EMISSIONS of PARTICULATES

(see page 18)

- The report recommends that the CEPSA Refinery applies **Shell technology** to reduce particulate matter **by 30%** thereby ensuring the meeting of BAT

FLARING

General Commentary

(See pages 18 & 19)

ESG Comment: Flaring has occurred at the CEPSA Refinery during power failure as confirmed by the auditors report. However it has long been suspected that the Refinery has used flaring periods to release unwanted waste product to the air. This has been impossible to prove, but there have been several reports by workers at the plant of such practices going on in the past. Certainly the level and duration of flaring has reduced in recent years which is a direct result of public pressure locally, regionally and at European Level. However the auditors disturbingly state that the degree of flaring at CEPSA Plant **cannot be quantified?**
The report refers again **to the lack of a back up power supply** which results in avoidable, lengthy flaring. This problem was identified by expert advisers to regional NGO's several years ago.

Below follows a series of recommendations by the auditors to the Refinery which, it is hoped, will now be taken up by the company:-

- Current flaring controls **are inadequate** – in other refineries operations can be normalised within **10** minutes, while in the CEPSA refinery it can take **20 to 30 minutes**. Exposes **lack of automatic response** in place as reparations are **done manually**
- **BAT practices on** flaring response and mechanisms would ensure safe controls – Flaring causes the **release of vast volumes of toxic gases** into the atmosphere in a **short space of time**- this can be easily avoided by adopting measures as advised
- Report also recommends the **recovery of gases** as a way of saving potentially lost product
- **Flaring** at the CEPSA Plant has not been **measured or quantified**- the environmental impact from this activity is difficult to assess
- Air injectors and lighting systems need good maintenance for optimum performance

(For general interest following have produced Audit on CEPSA)

- Instituto Tecnologico de Flandes (VITO) with its headquarters in Belgium and experience in assessing BAT application in various industries including refineries. Has undertaken similar projects for the Belgian Government and for the refinery in Haifa, Israel. The team was coordinated by Dr Karl Vrancken. (**ESG adds:** Haifa Bay experiences similar health and environmental concerns similar to the Bay of Gibraltar.[7])
- La Fundacion AICIA with headquarters in Seville and wide experience in analysis of industrial electrical processes. Work coordinated by Dr David Velasquez (energy assessment) and Dr Jose Maria Maza (electrical assessment)
- Dr Hendrik van Rompeay, de VITO y colborador de la EC en materia de BREF
- Profesor D Ramon Velasquez. Catedratico de Ingeniera Energetica en la Escuela Superior de Ingenieros Industriales de Sevilla.
- D. Arturo Albardiaz. Licenciado en Ciencas Quimicas y Master en Direccion General (IESE-Universidad de Navarra). Profesional del Refino y Petroquimica, con experiencia de cuarenta anos en puestos técnicos, de gestión y de alta dirección en el sector.

Group coordinator: D. Juan Luis Ramos, Profesor de Investigación del Consejo Superior de Investigaciones Científicas, with headquarters in Estación Experimental in Granada.

The auditing team began its work in the summer of 2007 and the conclusions are the results of the work undertaken by this team.

[7] Haifa Bay health and environmental hotspot document available on request

Analysis of Audit on CEPSA Refinery – PART 2

Following is a series of questions to be put to Industry/Regulators and to those responsible for producing the audit[8].

1) Re: Frame of Reference for the Audit

"What is the standard to which the CEPSA plant is being compared in this audit?" (Pages 3, 6 & 7 refers)

2) Re: Independence of the Auditors

"Are the organisations and expert individuals assigned to the CEPSA audit independent enough of CEPSA, TOTAL and the petrochemical industry to be entirely free to be critical of CEPSA's performance?" (Page 4)

3) Re: Investments in Environmental Protection

"Can CEPSA/TOTAL advise how it /they have invested in environmental protection and specify what investments are made for regular maintenance to prevent deterioration of current performance, and what has been made to improve performance above current levels?" (Page 6)

4) Re: Emissions

"Audit contains graphs of SO_2 emission reductions but does not show equivalent trend in benzene emissions. Both these were measured in significant quantities by NGO's in the area. VOC and benzene emissions are also referred to on Pages 13 & 16 as causing problems in surrounding neighbourhoods requiring action to be taken by the industry. These emissions are scientifically proven to be carcinogenic and therefore are a threat to the health of the surrounding populations. Audit should be amended to include a trend graph in VOC and benzene emissions."

Given the proven health impacts of PM2.5 emissions (considered to be more significant than PM10's which *are* mentioned in the report), it would be useful for the "audit to be amended to include trends in PM2.5 emissions."

"The audit refers to the refinery's emissions as comparing favourably with other "similar refineries" in Spain. Could the audit also be amended to include a comparison with other refineries in other countries, including the best-performing (in environmental terms) refineries in TOTAL?"

5) Re: Incidents

"The audit report refers to incidents on pages 10-12. It would be useful to have a clear definition of the threshold for defining an "incident", in order to ensure that trends reported over time are accurate."

6) Re: Environmental Management System:

The audit refers to the refinery's EMS, certified as complying with ISO 14001 by AENOR. Could the audit be amended to include:
The refinery's complete list of Environmental Aspects?
The refinery's list of "significant" Environmental Aspects?
The refinery's list of Environmental Objectives for improvement?

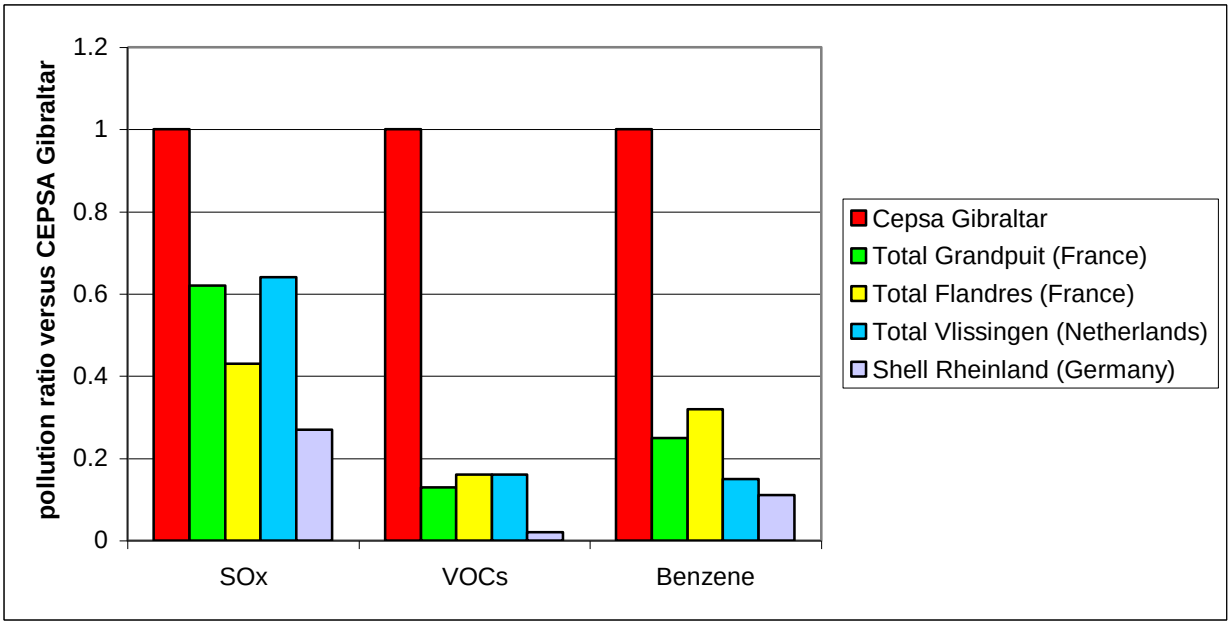
[8] This section taken from extensive advice received from international advisory bodies

7) Best Available Technology:

The definition of "BEST" in BAT in respect of the refinery has to be clearly explained. The audit states that the refinery conforms to Best Available Technologies (page 12). It would be useful to see a copy of the IPPC for the CEPSA Refinery to understand how this plant is complying with BAT.
The audit also recommends that the refinery implement BAT in a "cost-effective" manner.
It is difficult to see how such a get out clause can be given when BAT is demanded of industry to increase protection of health of people and the environment. This should be the benchmark. By allowing the refinery a cost effective clause it passes the costs of its operation onto the community, which then bears the cost in terms of health, quality of life, and so on.

The state will also bear these shifted costs, as it finances increased health care costs and decreased economic development from sources other than industry (e.g. tourism)

Comparison Table produced by NGO's after analysis of data available on EPER website[9] revealed alarming levels of dangerous pollutants released by the CEPSA Gibraltar Refinery



Based on data that refineries across Europe are required to report to the European Pollutant Emission Register, Figure 1 clearly shows that the **CEPSA** refinery is much dirtier than other European refineries.

Per tonne of oil refined, the Gibraltar refinery pollutes:

- *4 times more* benzene than TOTAL's Grandpuits refinery in France
- *7 times more* benzene than TOTAL's Vlissingen refinery in the Netherlands
- *9 times more* benzene than the Deutsche Shell refinery in Rheinland

CEPSA's Gibraltar refinery also produces *fifty times more* **Volatile Organic Compounds** than the Deutsche Shell refinery, per tonne of oil refined.

When considering production quantities, per tonne, **CEPSA Gibraltar Refinery** pollutes:

- *10 times more* benzene than TOTAL's Grandpuits refinery in France
- *19 times more* benzene than TOTAL's Vlissingen refinery in the Netherlands
- *12 times more* benzene than the Deutsche Shell refinery in Rheinland

[9] [9] 2006, European Pollutant Emission Register NACE Code 23.20