To: President of EURACOAL Pawel Smolen
CC: Secretary General of EURACOAL Brian Ricketts

HEAL
Promoting environmental policy that contributes to good health

Brussels, 24 April 2013

Dear President of EURACOAL Pawel Smolen,

I am writing to you with regard to a position statement issued by the European Association for Coal and Lignite EURACOAL, published on 18 April 2013, attacking the Health and Environment Alliance (HEAL) as an organisation as well as the findings of our recent report on the health impacts of coal-fired power plants in Europe.

Released six weeks ago, HEAL's report entitled '**The unpaid health bill: How coal power plants make us sick'** provides the first-ever calculation of the effects of coal-fired power generation on chronic lung disease and some heart conditions. It shows that the European Union-wide impacts amount to more than 18,200 premature deaths, about 8,500 new cases of chronic bronchitis, and over 4 million lost working days each year. The economic costs of the health impacts from coal combustion in Europe are estimated at up to €42.8 billion per year. Adding emissions from coal power plants in Croatia, Serbia and Turkey, the figures for mortality increase to 23,300 premature deaths, or 250,600 life years lost, while the total costs are up to €54.7 billion annually.

We were particularly shocked by one of EURACOAL's comments. The statement says: "EURACOAL questions therefore why HEAL has targeted coal-fired power stations when over 95% of the estimated impacts are due to emissions from other sources, such as transport." While our report acknowledges that: "Coal power plants are only a small portion of health impacts from air pollution", we consider that the estimated 23, 289 premature deaths per year in 30 European countries, which are associated with coal powered electricity generation, represent a major cause for concern.

This letter is a response to the claims made by EURACOAL, which were issued without giving HEAL the opportunity to respond to the criticism or to provide clarification. HEAL is ready to enter into a transparent dialogue in the public sphere on the topic of our report.

We are staggered and disappointed at the allegations made in this statement. They completely disregard HEAL's long standing and well respected track record in providing science-based expertise on the health impacts of environmental policies to EU institutions. They also ignore our 10-year participation in European stakeholder processes. Currently, HEAL is an official member of several European Commission expert groups, including the DG Environment stakeholder expert group on the review of EU air quality policy and the DG SANCO indoor air quality expert group. HEAL is also a member of the WHO working group on climate change and health.

HEAL's diverse membership includes major European health networks, such as the European Public Health Alliance, the European Respiratory Society, the European Federation of Allergy and Airways Diseases Patients Associations and the European Lung Foundation – representing leading public health experts as well as patients' and doctors' associations. These members and other partners have contributed significantly to the development of our coal and health report.

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The EURACOAL statement ignores the fact that HEAL represents the health expertise and perspectives of over 65 member organisations in 26 countries across Europe. HEAL also represents the individual members of our member organisations and their interest in defending health and a healthy environment as important public goods, thus HEAL's work is driven by public health interests. HEAL's activities are fully transparent through our annual reports, and HEAL is registered in the EU transparency register.

Scientific credibility of the report

Our report is a comprehensive review of the scientific evidence on the health effects of air pollution, to which emissions from coal power plants contribute. It features the first EU-wide assessment of how coal may be harming our health, and the economic costs of this harm. No-one in the scientific world doubts that air pollution has an effect on our health. In fact, the World Health Organization has just underlined the many consequences that exposure to air pollution has for our health.[1]

HEAL's report has been peer reviewed by five public health experts, including one of the leading researchers on coal and health who is based at the London School of Hygiene and Tropical Medicine, as well as seven other experts on either environment or energy. Our report also provides more than 100 scientific references, the majority from leading journals such as The Lancet, The British Medical Journal, the Journal of the American Medical Association, the Proceedings of the National Academy of Sciences of the United States of America, as well as from the WHO and the European Environment Agency (EEA). It is certainly not the result of a browse of the internet, as EURACOAL claims.

Representation of priorities for HEAL's membership

Not only is the report based on science, it also reflects the commitments of HEAL's membership in our work programme on energy, climate change and health. Its policy recommendations were adopted through member consultation in accordance with HEAL's statutes. Moreover, HEAL's report contains a preface from the European Respiratory Society, which represents 11,000 respiratory doctors and experts, and statements of support from five European health networks. HEAL would have welcomed the opportunity to counter contrary allegations about our membership prior to EURACOAL issuing their statement.

The independent expert who is author of the technical report, which detailed the assessment of health impacts and costs from coal power generation, is the leading expert in the field. He regularly undertakes assignments from institutions such as the European Commission and the European Environment Agency (EEA).

Unfounded attacks on the methodology and the results of the report

The attacks on the methodology and findings of our report are unfounded. The full response to specific methodological questions is given in the annex, while general points are emphasised here:

- The EURACOAL statement is critical of the facts about the methodology of the HEAL expert assessment; in fact, the critique completely **ignores the actual methodology** on which this assessment is based – a methodology used by the European Commission and emissions data published by EEA;
- EURACOAL **fails to acknowledge the relevance** of HEAL's findings: that coal is the most emission intensive energy source in Europe, that energy generation is the most important industrial source of air pollution, and that exposure to coal fumes, though smaller, can nevertheless be justifiably compared with traffic related air pollution. The criticism also disregards HEAL's strong track record in addressing air quality since the founding of the organisation ten years ago and ignores the reality that the health effects of air pollution represent a

[1] REVIHAAP first results

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major concern among health and medical experts from all over Europe (see for example the Ten Principles for Clean Air of the European Respiratory Society);

- In their statement, EURACOAL tries to confound HEAL's analysis of air pollutant impacts with CO_2 emissions and **tries to downplay the importance of CO_2 emissions from coal power generation**. It disregards HEAL's track record, as well as the track record of some of HEAL's members, in working on climate change and health, including at the international level and as a member of the WHO working group on climate change and health. It further fails to acknowledge that the high CO_2 and air pollutant emissions from coal power generation constitute a double threat for human health and that medical professionals have good reasons to raise awareness about the impacts of coal power generation (and have already done so, for example at a summit by the British Medical Journal on climate change in 2011);

- EURACOAL reiterates a position commonly cited by some industry representatives that coal power plants are complying with current EU standards so that the coal industry does not need to act. This completely disregards the fact that staying below emission limit values is no guarantee for sufficiently low levels of background air pollution, and that **existing EU limit values for ambient air quality do not provide adequate protection for human health** as they are considerably above the guideline values recommended by WHO. As part of the efforts to raise awareness of the significant health and environmental problems that persist with regard to air pollution in Europe, HEAL has repeatedly urged for improvements to EU air legislation. In fact, one could question whether Europe still has the world's leading legislation when the USA has just adopted a much stricter air quality standard than the EU (for PM2.5, which is the most problematic pollutant for human health), and as both the USA and China have stricter emission limit values for coal power plants in place than the future binding limits of the Industrial Emissions Directive;

- EURACOAL criticises HEAL for not considering the benefits of coal power generation. However, by simply listing a number of goods and services that run on electricity and implying that the benefits of electricity generation would suffice as an excuse for the high external costs to health, EURACOAL just **makes the very same mistake by** not considering the benefits AND costs of power generation from coal. HEAL's motivation in preparing a report on the health costs related to coal power generation was the fact that these costs have largely been missing from the debate on energy choices and that – unlike many other industries – the coal industry fails to pay for the net economic damages it causes.

Regards,

Genon K. Jensen
Executive Director, HEAL

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ANNEX

Response to attacks on the methodology

The EURACOAL statement fails to recognize the scientific basis of the HEAL expert assessment by ignoring the actual methodology on which this assessment is based. The EURACOAL statement claims that the assessment commissioned by HEAL would apply a linear factor of 3.7% to the total health impacts of air pollution in Europe. Instead, the methodology applied for the HEAL assessment is the Clean Air For Europe health impact assessment methodology, which is used by the European Commission and European Environment Agency (EEA) and using an official dataset reporting real world emissions from large combustion plants, a dataset owned by the EEA. The methodology and data sources are clearly stated in the text and explained in detail in Annex 1 of the HEAL report. The fact that EURACOAL ignores the foundation of HEAL's report suggests that the association is not willing to start an open dialogue that is based on science.

Instead of delivering constructive criticism on the methodology, and by ignoring the actual methodology and scientific basis of HEAL's assessment, the EURACOAL statement attacks the results of the HEAL expert assessment. For example, EURACOAL states that the results would be a gross overestimate because for Bulgaria and Serbia they would make up more than 10% of the GDP of the two countries. This claim completely ignores what the report makes explicit in the results chapter: that the division of health impacts and costs between European countries does not reflect where the health impacts finally occur. A large part of the air pollution originating from Bulgarian and Serbian coal fired power plants is actually transported over long distances, so that impacts also occur in other European countries. Thus all health impacts calculated for the emissions of coal power plants are valued with the same price across Europe. These prices would of course be lower if they were applied for Bulgaria and Serbia instead of the European average values. In addition, in both Bulgaria and Serbia a large fraction of the population is exposed to levels of air pollution which are higher than the EU limit value for the protection of human health. In Bulgaria, 83% of the people are estimated by WHO to be exposed to PM10 levels higher than 50 microgram per cubic metre while in Serbia the *entire* population is estimated to be exposed to levels higher than 40 microgram per cubic metre (40 is the EU limit value).[2] The guideline value of the WHO for the annual average exposure to PM10 is 20 microgram per cubic metre.[3]

Secondly, the EURACOAL statement tries to discredit the results of HEAL's assessment by referring to research from Germany which would show that in the proximity of coal fired power plants the numbers of respiratory or cardiovascular diseases would not be elevated, but instead more or less uniformly distributed across the country. Again EURACOAL fails to deliver criticism based on the actual subject of HEAL's assessment as the health impacts calculated for the HEAL report are not the health impacts for the local residents in the proximity of coal fired power plants, but the health impacts that occur in the whole population. As a large fraction of the pollution that is released from the smokestack is transported in the atmosphere over long distances and as the flue gases, such as sulphur dioxide and nitrogen oxides, react in the atmosphere in photochemical reactions to form inorganic secondary aerosols and thus particulate matter, the health impacts related to these secondary particles are more widely spread across the entire geographic area of Europe. HEAL makes this reference to the whole population explicit in the report, but EURACOAL fails to consult the methodology.

[2] World Health Organization Regional Office for Europe; European Environment and Health Information System (ENHIS); indicator 'Exposure to particulate matter in outdoor air'; http://data.euro.who.int/eceh-enhis/Default2.aspx [accessed 22 April 2013]
[3] World Health Organization Regional Office for Europe (2005): Air quality guidelines. Global update 2005. Particulate matter, ozone, nitrogen dioxide and sulfur dioxide. WHO Regional Office for Europe, Copenhagen, Denmark; http://www.euro.who.int/__data/assets/pdf_file/0005/78638/E90038.pdf

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The EURACOAL statement goes so far as to state that a causal link between coal-fired power plants and illnesses or premature deaths was 'not tenable'. This incorrect claim is supported by the argument that a shorter life expectancy was determined by a range of social, behavioural and economic factors. It thus fails to acknowledge that environmental factors also determine health, cause disease or reduce life expectancy. The analysis of the Global Burden of Disease, which was published earlier this year, shows that air pollution ranks 11th among all health risk factors in Western Europe.[4] Epidemiological studies from Europe and globally have repeatedly demonstrated a significant correlation between exposure to air pollution and mortality[5] and several reviews including review studies by the WHO[6] have been able to quantify this statistic correlation so that a certain degree of exposure can be linked to quantified health impacts in the form of ill-health or mortality. The causal link to emissions from coal-fired power plants is that classic air pollutants, such as sulphur dioxide and nitrogen oxides, contribute to the formation of secondary fine particulates as well as the formation of ozone (in the case of nitrogen oxides), which can further be transported over very long distances and thus impact on a large share of the total population. Because of the atmospheric transportation, the emissions from coal-fired power plants lead to increased background levels of air pollution.
EURACOAL claims that HEAL was using outdated figures on the average life expectancy lost, taken from a WHO report on particulate matter from 2006 but for the reference year 2005. It ignores that both the WHO[7] and the EEA[8] continue to use this figure in more recent publications, not because the figure had not been updated by new research, but because the situation of pollution with fine particulate matter (PM2.5) in Europe has not significantly improved in the period between 2005 and 2010.

Another main criticism from the EURACOAL statement is that the fraction of health impacts that is linked to air pollution from coal fired power plants (HEAL: 23, 289 for 30 European countries including Turkey) is only a small fraction of the total health impacts from air pollution (European Topic Centre: 492,000 for 39 European countries excluding Turkey). While HEAL has made it explicit in the report that pollution from coal fired power plants is only responsible for a small fraction of total air pollution, we still regard the total number of premature deaths as well as the numbers of ill-health as reason for concern. Coal power generation is still the most important source of total industrial air pollution, which was estimated at Euro €38 - 105 billion per year in a 2011 report by the European Environment Agency (excluding CO_2 health impacts).[9] In addition, HEAL's assessment and the study by the European Topic Centre on Air and Climate Change (ETCACC)[10] that estimated the total health impacts of air pollution in Europe follow two fundamentally different methodological approaches which means that a straight comparison of the results can be biased. The ETCACC assessment calculates exposure by extrapolating monitoring data for the observed total levels of air pollution in Europe while HEAL's assessment calculates exposure by modelling the impact of emissions and without including any information on existing levels of pollution. In addition, both studies have different reference years (ETCACC: 2005, HEAL: 2009) and two different sets of countries (ETCACC: 39 countries excluding Turkey, HEAL: 30 countries including Turkey). When comparing the results of HEAL's assessment with

[4] Lim SS, Vos T, Flaxman AD, et al. (2012): A comparative risk assessment of burden of disease and injury attributable to 67 risk factors and risk factor clusters in 21 regions, 1990—2010: a systematic analysis for the Global Burden of Disease Study 2010. The Lancet, 380(9859):2224-2260. http://www.thelancet.com/journals/lancet/article/PIIS0140-6736%2812%2961766-8/fulltext

[5] Compare: WHO European Regional Office for Europe (2013): Review of evidence on health aspects of air pollution – REVIHAAP; First results. World Health Organization Regional Office for Europe, Copenhagen, Denmark. http://www.euro.who.int/__data/assets/pdf_file/0020/182432/e96762-final.pdf [accessed 22 April 2013]

[6] WHO European Regional Office for Europe (2006): Health risks of particulate matter from long-range transboundary air pollution. World Health Organization Regional Office for Europe, Copenhagen, Denmark. http://www.euro.who.int/__data/assets/pdf_file/0006/78657/E88189.pdf

[7] WHO Regional Office for Europe (2011): ENHIS Fact Sheet. Exposure to air pollution (particulate matter) in outdoor air. http://www.euro.who.int/__data/assets/pdf_file/0018/97002/ENHIS_Factsheet_3.3_July_2011.pdf [accessed 22 April 2013]

[8] European Environment Agency (2012): Air quality in Europe – 2012 report. http://www.eea.europa.eu/publications/air-quality-in-europe-2012 [accessed 22 April 2013]

[9] European Environment Agency (2011): Revealing the costs of industrial air pollution in Europe. European Environment Agency, Copenhagen, Denmark. Page 31. http://www.eea.europa.eu/pressroom/newsreleases/industrial-air-pollution-cost-europe [accessed 22 April 2013]

[10] European Topic Centre on Air and Climate Change (2009): Assessment of the health impacts of exposure to PM2.5 at a European level. http://acm.eionet.europa.eu/docs/ETCACC_TP_2009_1_European_PM2.5_HIA.pdf

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assessments of the health impacts of air pollution from other sources, the orders of magnitude are much more similar. For example, the health impacts of traffic air pollution from lorries (so-called heavy goods vehicles) were estimated at Euro 43-46 billion per year in a report by the European Environment Agency published earlier this year[11] and thus within the upper range of the HEAL assessment for the health impacts of coal fired power plant emissions. These findings are further strengthened through the conclusion by the EEA that total health impacts from the transport sector are around Euro 100 billion per year[12] while industrial air pollution is found to be causing health costs of €38 - 105 billion per year.

[11] European Environment Agency (2013): Road user charges for heavy goods vehicles. European Environment Agency, Copenhagen, Denmark. http://www.eea.europa.eu/pressroom/newsreleases/reducing-the-20ac-45-billion [accessed 22 April 2013]
[12] See 8.

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