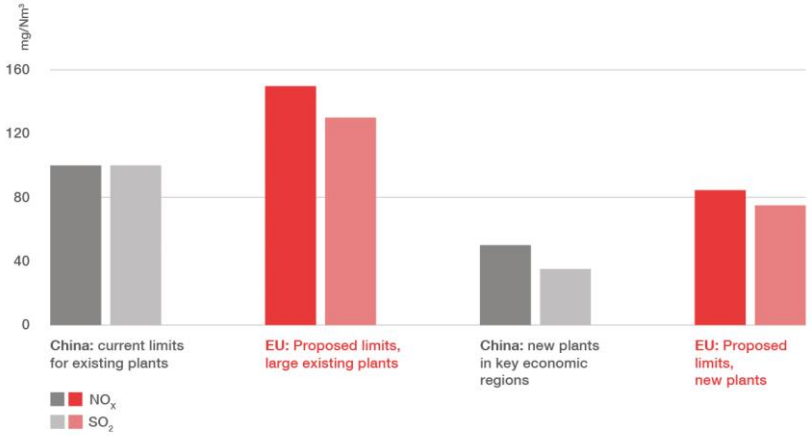
GREENPEACE **Briefing**

7 April 2015

New draft coal plant pollution limits leave EU trailing behind China

An EU expert body has released new draft coal plant pollution limits that are weaker than existing standards in China, the United States and Japan. The draft has only marginal changes compared to information released by Greenpeace in March, exposing the capture of the EU process setting coal air pollution standards by the fossil fuels industry[i].



Comparing SO_2 and NO_x regulation in the EU and China
Source: European IPPC Bureau proposal (1 April 2015) and China's currently applicable national emission standards (GB13223-2011).

The EU is currently updating its air pollution limits for large industrial installations, including lignite and coal-fired power plants, under the Industrial Emissions Directive. The decision-making process, also known as the "Seville process", will define best available techniques (BAT), which will in turn determine binding limits for several toxic emissions, such as sulphur dioxide (SO_2), nitrogen oxides (NO_x), mercury and particulate matter (PM2.5).

On 1 April 2015, the EU expert body, known as the European IPPC Bureau, published the proposal that will be examined by an EU working group later this year, before formal adoption in early 2016. An earlier draft of this proposal was published in June 2013.

Greenpeace research revealed that the emission limits in this draft were weaker than requirements and emission rates of best-performing power plants already in existence in China, Japan and the United States.

This briefing assesses the latest European IPPC bureau proposal and lays out Greenpeace policy recommendations.

Serious health effects of coal

Europe's coal-fired power plants are a major source of air pollution. Coal-fired power plants are the largest source of SO_2 and mercury emissions in Europe and one of the largest industrial sources of emissions of NO_x. These emissions have wide-ranging impacts on the health of Europeans, from increased rates of premature death, to the exacerbation of chronic respiratory diseases.

Exposure to PM2.5 increases the risk of death from heart disease, respiratory diseases and lung cancer, and shortens life expectancy by 6-12 months in most European countries[ii]. PM2.5 was recently identified as a leading environmental cause of cancer deaths by the World Health Organisation's cancer agency[iii]. SO_2, NO_x and dust emissions all contribute to PM2.5 exposure.

Research by Stuttgart University commissioned by Greenpeace estimates that the collective impact of air pollution from coal-fired power plants in the EU was responsible for 22,300 premature deaths in 2010[iv].

Coal-fired power plants are the largest source of mercury air emissions in the EU and the largest source of mercury fallout into Europe. 200,000 babies are born each year in the EU with mercury levels that are known to be harmful to their mental and neurological development[v].

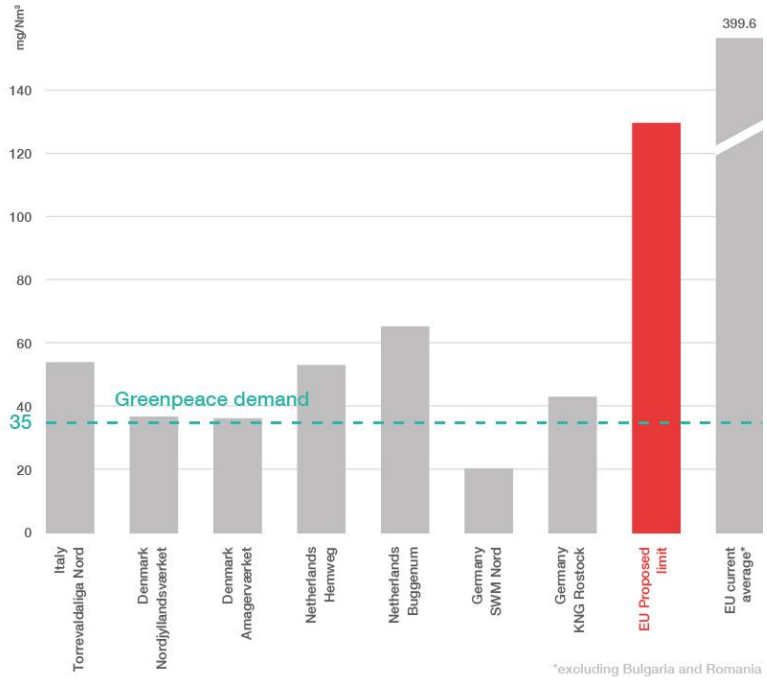
The economic cost of the health impacts of coal combustion-related air pollution is substantial. Recent research by the Health and Environment Alliance estimated the financial impact of coal-related air pollution in the EU to be as high as €42.8 billion every year[vi].

According to the OECD, the most affordable way to reduce deaths from air pollution is to invest in end-of-pipe controls, as well as moving to cleaner technologies[vii]. Strict limits on air pollution from coal-fired power plants could ensure the implementation of these controls, thereby significantly improving European air quality and reducing related negative health impacts for Europeans.

European IPPC Bureau leaves EU trailing on pollution standards

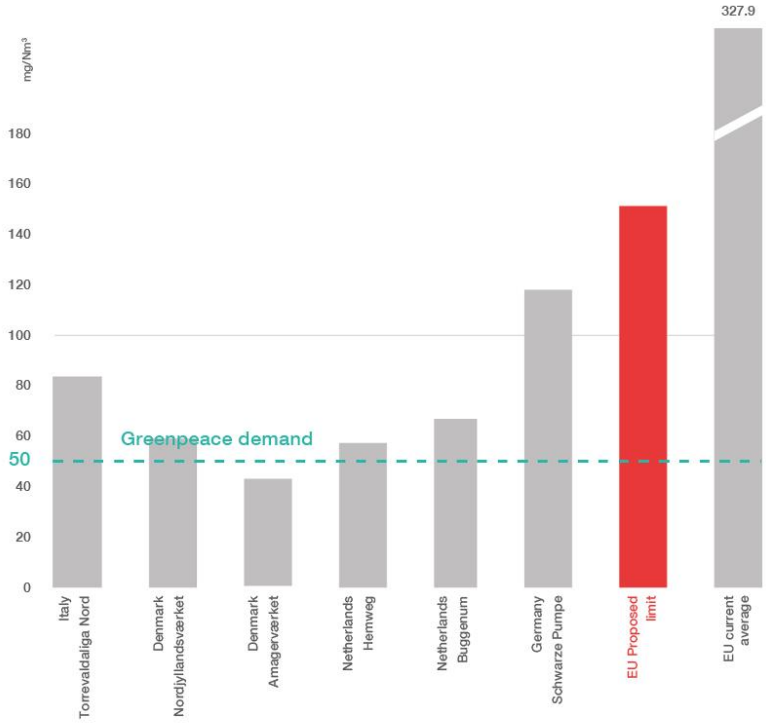
In a recent report[viii], Greenpeace assessed air pollution limits for lignite and coal-fired power plants under consideration in the Seville Process. The report found that emission limits in the European IPPC Bureau's previous draft proposal from June 2013 are much weaker than many of the emission rates of best-performing power plants already in existence and weaker than current emission limits in China, the United States and Japan. The final proposal by the IPPC Bureau dated 1 April does not have substantial changes compared to the June 2013 proposal.

SO_2: The best performing power plants in the EU emit on average 20-60 mg/Nm_3 of SO_2 every year. Some power plants in the United States achieve even lower annual average rates of 5-15 mg/Nm_3 of SO_2 emissions. Yet the proposal recommends annual average limits of 130 mg/Nm_3 for existing plants and 75 mg/Nm_3 for new plants. There was no improvement on the June 2013 draft proposal. This means that the proposed emission limit for SO_2, which is the pollutant responsible for approximately half of the premature deaths attributed to coal-fired power plants[ix], remains 3-5 times above levels that can be achieved with best available techniques.



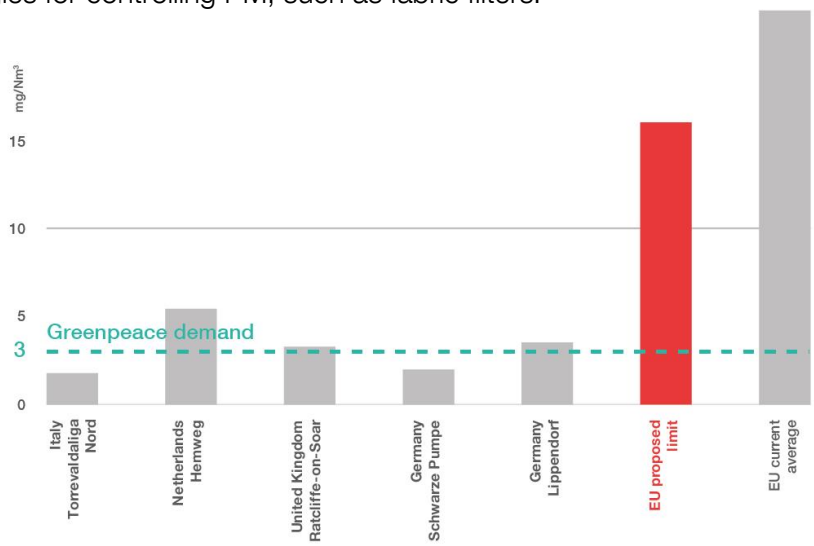
Examples of EU power plants with SO_2 emissions far below the proposed standard
Source: European IPPC Bureau proposal (1 April 2015) and Greenpeace analysis. Emission levels for the plants are calculated as yearly averages based on air pollutant and CO_2 emissions reported to the E-PRTR database.

NO_x: The best performing plants in the EU emit on average 50-80 mg/Nm_3 every year. In China, best performing plants achieve an annual average of 30-50 mg/Nm^3. While the June 2013 proposal recommended 180 mg/Nm^3 for existing plants, the final proposal has only slightly lowered recommended emission limits to 150 mg/Nm^3. For new coal plants the limit was also marginally changed from 100 to 85 mg/Nm^3. The IPPC Bureau proposal would allow many European plants to avoid the installation of selective catalytic reduction technology, the most effective way to control NO_x emissions.



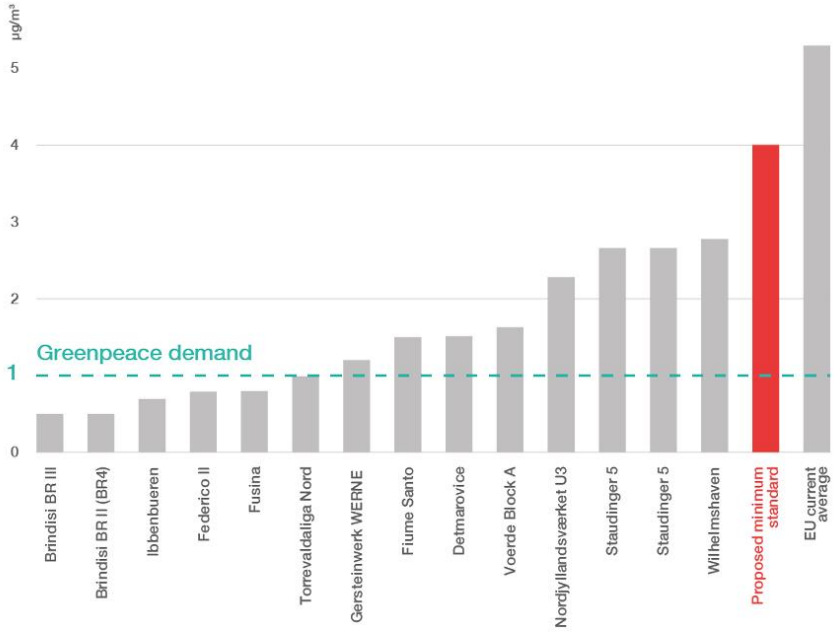
Examples of EU power plants with NO_x emissions far below proposed standard
Source: European IPPC Bureau proposal (1 April 2015) and Greenpeace analysis. Emission levels for the plants are calculated as yearly averages based on air pollutant and CO_2 emissions reported to the E-PRTR database.

PM: After retrofitting, Chinese plants can limit emissions of particulate matter to 5 mg/Nm3 per day. The best performing Japanese plants can achieve an even better result of 4 mg/Nm3 per day. Yet the draft proposal would allow large existing European plants to emit 16 mg/Nm3 per day and new plants to emit 10 mg/Nm3 per day. These limits would allow European plants to avoid installing the best available technologies for controlling PM, such as fabric filters.



Examples of EU power plants with PM emissions far below proposed standard
Source: European IPPC Bureau proposal (1 April 2015) and Greenpeace analysis. Emission levels for the plants are calculated as yearly averages based on air pollutant and CO_2 emissions reported to the E-PRTR database.

Mercury: In the United States, existing hard coal plants cannot emit more than 1.5 µg/Nm^3 of mercury every year. The June 2013 draft proposal would allow European hard coal plants to emit 6 µg/Nm^3, which the April 2015 proposal only slightly improved to 4 µg/Nm^3. Moreover, emission limits for lignite, which is an even more polluting energy source than hard coal, were not improved. These limits are so lenient that an estimated 85 percent of European plants are already in compliance.



Examples of hard coal power plants in the EU with mercury emissions far below the proposed limits
Source: European IPPC Bureau proposal (1 April 2015) and Greenpeace analysis. Emission levels for the plants are calculated as yearly averages based on air pollutant and CO_2 emissions reported to the E-PRTR database.

Greenpeace recommends the following emission limits under the EU's rules, based on what is reasonably achievable with the application of state of the art technology:

	Existing plants	**New plants**
Sulphur dioxide (SO_2)	<35 mg/Nm^3 (annual)	<20 mg/Nm^3 (annual)
Nitrogen oxides (NO_X)	<50 mg/Nm^3 (annual)	<40 mg/Nm^3 (annual)
Particulate Matter (PM)	<3 mg/Nm^3 (annual)	<3 mg/Nm^3 (daily)
	<3 mg/Nm^3 (daily)	
Mercury (Hg)	<1 µg/Nm^3 (annual)	<0.5 µg/Nm^3 (annual)

Note: Values refer to annual emission limits unless otherwise specified.

Conflicts of interest in the Seville Process

The most important body involved in drafting the new standards, the Technical Working Group, is dominated by the energy industry: on top of the 137 official seats for industry representatives on the Technical Working Group, Greenpeace found that at least 46 representatives in government delegations are in fact industry employees or lobbyists.

These individuals have been appointed by national governments as “experts” but their presence represents a clear conflict of interest as they are on the payroll of the companies or interest groups representing the companies that are being regulated. The result is that industry representatives make up over half of the members of the Technical Working Group.

Even national delegations that do not include industry representatives have been found to advocate industry positions, often using statements directly copied from industry representatives. The impact of this undue influence can be seen in the weakness of the emission limits under consideration.

Indicative Seville process timeline

- 1 April 2015: European IPPC Bureau releases proposal with definition of BATs and associated emission limits.
- 1-19 June 2015: Final Technical Working Group (a body composed of government, industry and civil society experts) gives its opinion.
- July / September 2015: The Industrial Emissions Directive Forum (another expert body with member states, industry and NGO representatives) gives its opinion.
- End 2015: EU member state committee chaired by the European Commission (under so-called EU comitology rules) votes on the proposal by qualified majority.
- January 2016: Formal adoption by the European Commission and subsequent publication in the Official Journal of the EU. This is the start date for the permit review trigger, which foresees a transition period of maximum four years for existing power plants.
- January 2016 to January 2020: National implementation process (process depends on national law and procedures).
- January 2020: Deadline by when the new requirements need to be applied at plant level. The deadline for compliance depends on the publication date of the BAT conclusions in the Official Journal.

The need for robust European air pollution limits

Greenpeace is deeply concerned that the health of European citizens and best available air pollution control technologies are not being properly taken into account in EU decisions to set emission limits for coal plants.

We call on EU environment ministers, national members of Parliament and the European Parliament to intervene in the Seville process and beyond, and to take the following actions:

Policy recommendations

- ✓ The EU should ensure timely adoption of emission limits. This means that the publication of best available technique definitions and emission limits for large combustion plants should take place by January 2016 at the very latest.
- ✓ The EU should adopt robust standards. In addition to being sufficiently stringent, this means standards should be equally robust for all power plants and binding for all member states, without any derogations.
- ✓ Emission limit values should be based on best international performers.
- ✓ The EU should prescribe continuous measurement of mercury emissions at mid-sized and large industrial installations (in addition to continuous measurement of other pollutants), including coal-fired plants, in order to allow regulators to check compliance.
- ✓ National governments should end conflicts of interest in the Seville Process. This means excluding staff on the payroll of industries affected by the Industrial Emissions Directive from EU member state delegations in the decision-making process.

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[i] Greenpeace (March 2015), Smoke & Mirrors - How Europe's biggest polluters became their own regulators: http://www.greenpeace.org/eu-unit/en/Publications/2015/Smoke-and-Mirrors-How-Europes-biggest-polluters-became-their-own-regulators.

[ii] EEA (2007), Loss of statistical life expectancy attributed to anthropogenic contributions to PM2.5, 2000 and 2020: http://www.eea.europa.eu/data-and-maps/figures/loss-of-statistical-life-expectancy-attributed-to-anthropogenic-contributions-to-pm2-5-2000-and-2020.

[iii] WHO (2013), Outdoor air pollution a leading environmental cause of cancer deaths: http://www.euro.who.int/en/health-topics/environment-and-health/urban-health/news/news/2013/10/outdoor-air-pollution-a-leading-environmental-cause-of-cancer-deaths.
[iv] University of Stuttgart research, in Greenpeace (2013), Silent Killers: http://www.greenpeace.org/international/Silent-Killers.
[v] Ibid.
[vi] HEAL (2013), The Unpaid Health Bill: How coal power plants make us sick http://www.env-health.org/news/latest-news/article/the-unpaid-health-bill-how-coal.
[vii] OECD (2012). OECD Environmental Outlook to 2050: The Consequences of Inaction, p287. http://www.oecd.org/environment/indicators-modelling-outlooks/oecdenvironmentaloutlookto2050theconsequencesofinaction.htm.
[viii] Greenpeace (2015) Smoke and Mirrors http://www.greenpeace.org/eu-unit/en/Publications/2015/Smoke-and-Mirrors-How-Europes-biggest-polluters-became-their-own-regulators.
[ix] Greenpeace (2013), Silent Killers: http://www.greenpeace.org/international/Silent-Killers.