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National Pollutant Inventory
Department of the Environment and Energy

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The Australian Sustainable Business Group (ASBG) is pleased to comment on the National Environment Protection Council's Review of the National Pollutant Inventory – Discussion Paper.

The Australian Sustainable Business Group (ASBG) is a leading environment and energy business representative body that specializes in providing the latest information, including changes to environmental legislation, regulations and policy that may impact industry, business and other organisations. We operate in NSW and Queensland and have over 110 members comprising of Australia's largest manufacturing companies and other related businesses.

ASBG has addressed the questions in the NPI review paper in a table below. However, there are a number of key themes which emerge from the NPI review:

- Use of the NPI as a scientifically relevant data set
- The accuracy of NPI data and its representation
- Contextual information especially with diffuse sources

ASBG has also answered the questions in the NPI review paper, which add to the main issues above.

1. NPI as Scientific Data

The NPI desired environmental outcomes include its use to improve and maintain air and water quality. However, in delivery the NPI focuses on facility emissions, and pays poor attention to diffuse and natural sources. It is unscientific to largely focus on one source area, while ignoring another. Diffuse sources are identified in the NPI Review as being inconsistent[1], out of date, variable in type and measurement and poorly reported under the NPI. To derive effective information and conclusions from the NPI all data sets should be consistent and accurate, at least to have a know error margin. NPI's focus on facilities and poor descriptions and explanations of diffuse sources v facilities results in skewed outcomes and consequently poor regulatory and policy decisions. NPI data is therefore often misused by interest groups and even some regulators. Nevertheless, ASBG accepts the public will continue to drive reporting of pollutants, but in this the public also has the right to receive correct and accurate information or at least be informed of its error ranges.

From a scientific perspective the accuracy of the data must be considered when drawing conclusions. Accuracy or error ranges of NPI data is not identified publically despite for facilities, this is collected. Diffuse sources should also require accuracy or error ranges to be identified. Then all sources of contaminants need to be considered when assessing any area to determine the context of either facility, diffuse or natural source. Hence the NPI needs to better discuss this contextual information which was called for during its establishment, but poorly undertaken.

[1] See answer to question 26 in Table 1

R1 ASBG recommends the NPI provide better explanations of the contextual nature of each pollutant with reference to diffuse and natural sources, to enable uses of NPI data to apply it in a scientifically sound way.

2. NPI Accuracy Issues

The NPI offers NPI reporting facilities the choice of the measurement method for its emissions. Use of the Estimation Technique Manuals (Manuals) is considered the least accurate with most based on or using the US Toxic Release Inventory manuals, which are based on 1970 -1980s US based production processes and US raw materials. As a consequence of using these estimation techniques, based on processes designed over 50 years ago, not only badly estimates similar industrial sectors and processes in Australia it greatly over estimates the actual emissions. ASBG members report some Manuals produce emission estimations over ten times actual measured emissions.

ASBG's issue is not so much on the accuracy of the data produced, but the use and miss-use of such data. Regulators and the public often cite NPI data as actual emissions, which if the Manuals are used is often an over estimation. To correct such misinterpretation the NPI should identify either the measurement method and or its accuracy category for each substance. Additionally, the NPI should provide information regarding the accuracy of Manuals which needs to be considered in drawing any scientific valid conclusions. This will also assist in dispelling miss interpretations of NPI data such as when comparing similar process emissions where the measurement method is quite different.

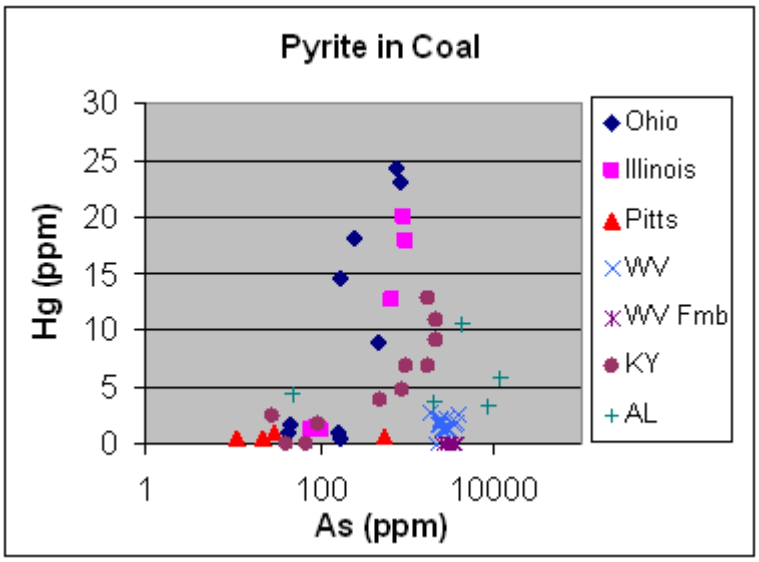
Facilities using the on-line reporting NPI system already provide a 1 -4 measurement accuracy level for each substance. In addition, the Manuals rank measurement accuracy from A to E (poor) depending on the estimation technique used. Considering that both the Manual and non-manual measurement techniques have accuracy ranking, it is strange why this is not published on the NPI website.

R2 ASBG Recommends that:

- ***The type of measurement method used for NPI data be identified***
- ***The accuracy of the measurement of each substance for each facility be published using the current ranking system provided by the NPI in its reporting forms and Manuals.***
- ***NPI website provide an explanation describing the accuracy levels rankings and their corresponding scientific validity and use.***

Use of the Manuals is often the simplest and most cost effective means in which to report by facilities. For small levels of emissions use of the Manuals makes sense. Preparation of site specific measurements are far more costly and are generally only used when there is another regulatory requirement such as a licence condition. Many Manuals are based on estimation factors which vary according to the use of storage of a substance. Given the straight forward nature of the Manuals, improved accuracy can be easily achieved by updating these over time. But this process has been sporadic and many Manuals still date from the late 1990s and are based on the old USA TRI Handbooks.

For example, many Australian companies use the NPI Combustion in Boilers Manual to estimate their emissions of arsenic, lead, mercury and Benzo(a)Pyrene (B(a)P). Tables 8 to 15 in the NPI Boiler Manual still use USA data from 1995 and 1998 on a small number of US based coal fired boilers. Considerable differences in trace element occur between Australian and north American coal. In addition the Boiler Manual is often applied to non-boiler processes, but where coal is burnt resulting further inaccuracies.



Plot of mercury in pyrite plotted versus arsenic content (log scale) based on reconnaissance laser ablation ICP-MS analysis of 6 U.S. eastern bituminous coal samples. USGC

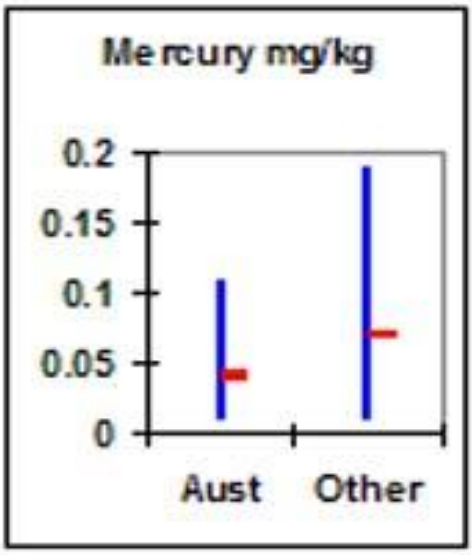


Chart compares level of mercury in Australian coal with other internationally traded coal. CSIRO

Chart 1 Comparisons of US and Australian and International Coal Mercury Content

As can be seen in chart 1 the concentration of mercury in US coal is much higher, up to 240 times higher, than Australian coal. It is also common for the US TRI to adopt an environmentally conservative estimation level. As a consequence the NPI Manual data based on TRI estimation techniques can result in errors of over 2 orders of magnitude compared to actual emissions experienced at NSW industrial sites.

Concentration of Lead in:	**mg/kg**
Australian Export Coals	2 –14 (3)#
Other Internationally Traded Coals	<1 – 22 (6) #
Australian Domestic Coals	3 – 18 (10)#

This CSIRO table displays the range of lead concentrations for Australian coals. In comparison north American coals can have 4 to 5 times the concentration of Pb.

Chart 2 Comparison of Lead in Coal from Australia and International Coals

For lead (Pb) (Chart 2) and arsenic (Chart 3) the difference is narrower between North American and Australian coals. It is worth noting there are major variations within different Australian coals. Even if the NPI Manual estimation techniques used Australian coal data, which they do not for lead, (it is based on TRI techniques and data) there should be an expectation of variability of at least 3 times.

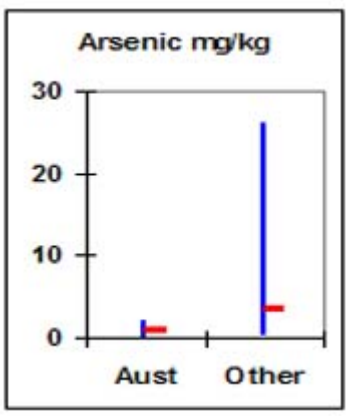


Chart compares level of arsenic in Australian coal with other internationally traded coal. CSIRO

Chart 3 Comparison of Lead in Coal from Australia and International Coals

This is not to say that all NPI data is inaccurate as many companies report far more accurately measured emissions, such as required under environmental licence conditions, to the NPI annually. Such variations between accurate and NPI Manual emissions estimation techniques gives misleading ranking of sites on the NPI data base. Consequently, choosing companies and industry types based on NPI ranking is a poor indicator of actual ranking and actual emissions. ASBG members highlighted Manuals covering Fugitive Emissions, Combustion in Boilers, Fuel and Organic Liquid Storage for low flow rates from storage and mining as those requiring review with each affected industry sector invited for input.

R3 ASBG Recommends the NPI update the Manuals over time, in consultation with each industry sector, using a more relevant estimation technique.

Another issue is the double standard which applies to facilities compared to jurisdictions. Facilities have NPI requirements strongly enforced on them with a suite of fines for non-compliance. Jurisdictions at best measure diffuse and natural sources of emissions roughly once every 5 years. However, facilities must report annually. Comparability and coverage of diffuse sources is poor, with wood heater $PM_{2.5}$ emissions, prescribed burns and other diffuse sources, which are major air pollution sources, are simply ignored.

Considering the cost burdens on both Government and facilities by the NPI ASBG proposes moving to a two year reporting period, with a staggered reporting of 50% of facilities each year. This should result in cost savings for the Commonwealth, jurisdictions and facilities. These savings can be invested into improving the NPI in accuracy, public information on accuracy of measurements, review of substances and other areas.

R4 ASBG recommends the NPI move to a two year reporting period and use the savings to invest in improving the scientific usefulness of the NPI.

Mass levels of many substances reported by facilities is in the trivial range, however are still required to be reported under the NPI.

For example, benzene emissions of less than 500 grams per annum from a facility could be considered the reporting threshold for NPI. 500g is used as an example of a trivial amount. Consider 13.7 m passenger motor vehicles (according to the NPI data) emitted 9,600 tonnes benzene per annum in 2016-17. Hence, each vehicle on average emitted 700 g of benzene per annum. Australian fuel standards require maximum of 1% benzene in fuel and 17.4 GL of petrol was consumed making 174 kL (152,000 t) of benzene used. However, there are many sites NPI reporting emissions of well under that of an average motor vehicle using petrol as a fuel source.

ASBG considers if there is any review of the NPI substance list it should also consider a threshold value where the facility has the option to report trivial emissions or not. Trivial emissions would be those of such small emission size it would be considered environmentally trivial, as it would be swamped by other common diffuse sources. Also ASBG does not support any lowering of the current set of *reporting thresholds* for the 93 reportable substances.

R5 ASBG recommends when reviewing NPI substances a reporting threshold on trivial emissions be established for each substance based on total contribution to the general area and its harmfulness.

ASBG notes a 2014 NPI review justified removing a number of industry sectors from the NPI based on a risk assessment method. This is supported and discussed in ASBG's answer to question 31 in Table 1.

3. Contextual Information

Contextual information is mentioned once in the NPI Review, but it was a key recommendation when the NPI was first prepared. The NPI Review points out *Improving aggregated emissions data in the NPI at least up to the standard originally envisaged, could contribute to improving the management of emissions.* Yet the quality and age of diffuse data is poor and misses some of the main sources of air pollution, such as $PM_{2.5}$ for wood smoke, wood heaters, prescribed burns and natural events such as dust storms and bush fires. Manuals for diffuse sources have not been reviewed since 1999 and do not include newer substances which

have been added to facilities, with $PM_{2.5}$ being significant. Application of diffuse source emissions do not generally cover the State or Territory, but only deal with specific areas leaving vast gaps in the data set. Without good data across the full data set the NPI cannot perform its role to improve and maintain environmental quality in a scientific manner.

Despite the prior requirements to contextualise emission data the NPI website provides little in terms of comparisons between reporting facilities, diffuse sources and natural sources of pollution. This should be a major part of the NPI if it is to provide scientific data in a way to make good environmental policy and practice. If for example wood heaters are ignored, many urban areas will still suffer from poor air quality. This can occur when reporting facilities are trivial emitters, but are miss-conceived as the main sources. Consequently, no action is taken failing the objectives of NPI and environmental agencies.

R6 ASBG recommends that

- ***Diffuse source emission data be reviewed standardised in type and measurement across all jurisdictions and be reported in a contextual manner along with facility data.***
- ***The diffuse data set be aligned to the main types of pollutants.***

ASBG is also concerned over the contextual information in relation to NPI reporting variations from facilities. If a 25% variation is identified when entering data in the NPI data base it is called an advisory level. Consequence, the system requires advice as to why the variation occurred. While this reason is captured it is not published on the NPI website for that substance and facility. Such contextual information is critical in preventing erroneous concerns, accusations and miss-interpretation.

R7 ASBG Recommends the NPI website also publish the collected advisory information provided when > 25% difference in substance reporting is triggered.

4. ASBG's Answers to Questions

The table 1 lists the 50 questions in the NPi review and ASBG's answers to these.

Table 1 NPI Review Question List and Answers		
No	**NPI Review Question**	**ASBG answer**
1	Do the NPI NEPM outcomes remain relevant? If not, how might they be changed?	The NPI fails to provide accurate and comparable data on diffuse and natural sources. Contextual data and explanations of both non-industrial and natural emissions are poorly explained and identified. Australia's manufacturing sector has significantly shrunk by more than 50% since the NPI was formed. As it still focuses on industrial emissions it can lead to miss interpretation of where the major sources of pollution are. For example wood smoke is now recognised as by far the dominant $PM_{2.5}$ source in Sydney and many other southern cities and towns. However, wood smoke $PM_{2.5}$ is poorly measured under NPI for Australia. Prescribed burns is also identified as a major peak pollution source for PM and other air toxics, but is not listed under the NPI. See recommendations above for changes.
2	Do you think the NPI or other PRTRs enhance environmental quality? If so, to what extent? Can you provide any examples?	Occasionally they can identify dominant sources, but in many cases, where there has been regulatory action based on NPI, it was from inaccurate or over estimated emissions, in some cases being an order of magnitude over real levels once checked. This has lead such facilities to revisit the measurement method rather than taking action on the source as the measurement errors under the Manual used greatly overestimated the actual emission. To improve the NPI again both accuracy of Manuals should be improved and the error ranges of the measurement methods identified and explained.
3	Does the NPI sufficiently raise awareness of and encourage public, industry, government and academic users to engage with and use its data to improve environmental outcomes through greater understanding? If not, why not?	Yes it can, but suffers from poor data and lack of contextual data. Often the NPI data is miss-used prompting regulatory action to investigate. This simply results in changes to the measurement of the facility. There are many cases of miss-use of NPI data by interest groups. However, NPI website has poor explanations on contextual data, variations in data and errors in measurement. If this was better addressed then many false claims would be far more quickly identified rather than the current inefficient use of regulator and facility resources to prove innocence. This is covered in ASBG's recommendations above.
4	What data could be collected and published through the NPI to make it more useful for you or other users?	• Error ranges for each measurement, which is in part already captured by not published. • Explanations of error ranges (measurement accuracy) for both public and scientific consumption. • Diffuse sources both non-industrial and natural are poorly represented, collated and better presented.

5	Would more interpretation or analysis of the data assist users, and if so in what form?	When listing the major sources of a pollutant, both industrial and diffuse sources should be at least jointly shown. A pie chart would be useful for each pollutant and its main sources – Industrial, non-industrial (anthropogenic) and natural to ensure the data is read in context. Also question 4's answers and the recommendations above in this context.
6	Does your organisation generate emissions? If so, how do you use NPI data?	Not applicable for ASBG, but relevant for our members. However, some of the NPI data is useful for comparison reasons and for the use in reports and other research documents if error ranges are considered.
7	How can NPI data be more useful to you, your organisation or your industry?	Improved accuracy of NPI data with comments that where Manuals and lower accuracy measurements are made the emissions are largely overestimates to real and actual emissions. Diffuse sources both non-industrial and natural sources, more accurate, collated and better presented. Again refer to ASBG's recommendations.
8	Do you/would you use the data on the emission reduction techniques facilities implement? How?	Not used by ASBG, but offers some useful information to others in industry with similar processes. This can lead to a better understanding of what is common practice in an industry sector.
9	Is the NPI a useful resource for tracking environmental progress?	It has caused confusion in the community when large changes occur. Interest groups of accuse sites of cheating, where in fact either a new more accurate measurement technique is used or new pollution control equipment is installed. Use of explanations for material changes by industrial sources can help. Again refer to ASBG's recommendations.
10	How can the data it collects or the way the data is presented be more useful for tracking environmental progress	NPI data requires far more explanation and contextual information for year to year or site to site comparisons to be made. Again refer to ASBG's recommendations.
11	Do you think the community expects to have emissions and transfer data for potentially harmful substances publicly available? How can the NPI better satisfy community expectations in this area?	Yes for emissions data, but there have been cases of confusion over transfers. Better explanations of what are transfers and they are not emissions. ASBG opposes expansion of the NPI to include transfer data, especially 'intermediate transfer data'. Transfers are already causing confusion and the administration involved with this proposed change would be very significant and would add very little value to the program.
12	Does your Government agency use the NPI in program and policy development?	Yes, but the NPI data is often miss-used to justify poor regulation and policy. For example, the NSW Load Based Licensing Review (see s4.2 and other sections) relies heavily on LBL data to estimate future revenues, prices and controls. This is despite that NSW EPA knows the NPI data they are referring to is in most cases significantly over estimated. However, such errors are not cited in reference to NPI data and proposed future policy direction is formed based on poor data, which is unscientific in its approach. There is a trend among regulators which consider NPI data is similar to a tax return declaration, but ignores the inherent errors built into the system often citing the data as absolutes, where this is clearly not the case.
13	How can the NPI be more useful in identifying priorities for environmental decision making?	Again NPI data must have its error ranges recognised and contextual comments that the Manuals will in general over estimate emissions. Correcting this would be to improve over time the accuracy of NPI reporting, especially Manuals, with a focus on the quantity and hazard of the substance.

14	On balance, to what extent do you think the NPI contributes, and what is its potential to contribute, to achievement of its desired environmental outcomes?	Many members report their NPI data to senior management, but its error ranges makes its internal use limited. Poorly on a facility level and in most cases should be used as guide and perhaps an investigation trigger. The NPI contains emissions data from industrial facilities but does not properly qualify and explain the quality and over estimation of Manual use. Such data applied with a lack of scientific method can deliver poor outcomes. Diffuse sources are very poor and require to be much improved, but for many substances diffuse sources are by far the major source. The NPI provides the false impression that industrial sources are the main contributors for many substances and in many areas where on closer inspection of the NPI and other data this is simply not the case. If the NPI is to be of better real use, in evidence-based and scientific-based manner its data quality, especially on diffuse sources and the way it explains and contextualises this data requires a major review and upgrade. Otherwise it can continue to be misused, misinterpreted resulting in false public views and poor and wrongly targeted policy and legislative actions.
15	Are there any substances you would like to see on the NPI substance list?	No
16	Are there any current substances you would like to see removed?	Yes, subject to a review considering the shrunken state of reporting facilities there could be a number of substances that no longer warrant reporting due to their trivial impacts.
17	Do you think a TAP should be formed to re-examine the substance list?	No
18	To what extent do you agree the NPI substance list should be further harmonised with international lists, for example through the OECD's recommended harmonisation processes?	Before any consideration of new substances, NPI would need to improve its accuracy and especially update and expand on its diffuse and including prescribed burns, wood smoke, etc and natural sources of emissions. Other lists are based on countries with a far larger and diverse industrial based. Australia's industrial base has shrunk considerably since the commencement of the NPI. Hence, many of the current substances may now not be relevant. Adding a large collection of new substances which are largely not used in Australia or in small quantities would be considered trivial emissions. To evaluate the list of such new substances would result in high cost to the Government on such a review, which may rule out most of the differing substances. Measurement would suffer the same issues if Manuals from other countries are used. Importing foreign emission factors will again lead to high error margins and the call to correct these.
19	Should the NPI substance list be able to be changed more easily than having to change the NPI NEPM legislative instrument?	No. Businesses require certainty, changes should preferably only occur over longer terms.
20	Have you used the NPI public website, ORS or data.gov.au web pages? How would you describe your experience?	Yes, not a bad website. It's the quality of the data and the way it is presented, which is more of an issue. Again refer to ASBG's recommendations.
21	What opportunities are there for the NPI to improve the user experience for the public, industry and government users?	Better explanation of sources of industrial, non-industrial and natural emissions. For example, a pie chart for each substance when referenced / called up identifying the source and comparable sources in the area including diffuse and natural. Improved explanation on the accuracy of NPI and where its should and should not be used. Again refer to ASBG's recommendations.
22	Would you use an NPI app if developed?	No.

23	Would the users of the NPI website benefit from a greater understanding of the distinction between the NPI and the State and Territory environmental regulatory measures?	Yes, and that there is a distinction between concentration limits and total mass over a year. Also measurements under licence are undertaken to a far higher level of accuracy. Comparisons of such data require better explanation on the NPI website.
24	Do you think public awareness of the NPI should be increased? If so, how? Would you support greater promotional activities including new measures to promote interesting uses of NPI data?	No, as it contains very poor diffuse data and contextual explanations it is often interpreted that industry facilities are the only sources that matter by the public. As industry shrinks other sources of pollutants such as wood heaters, prescribed burns and motor vehicles dominate the total masses of emissions. This is poorly communicated and can miss-lead the public. Increasing public awareness should only occur once major improvements to the NPI as discussed are achieved. Again refer to ASBG's recommendations.
25	Is transfer data providing sufficient value to stakeholders? How can its usefulness be improved?	Additional data collection requirements for businesses and at a cost for questionable outcomes. There is potential for confusion on what is meant by transfers. There is no diffuse source information provided from non-industrial NPI sources on transfers.
26	Do you report to the NPI? How could your overall user experience be improved?	Again the main issue is the poor diffuse source data and little natural emissions data that is included in the NPI. For example: For Volatile Organic Compounds top emission source 2016-17: • WA has Biogenics at 2,100,000 tpa • Queensland had Biogenics at 220,000 tpa • NSW reports Motor Vehicle emissions at 64.000 tpa, no biogenics • South Australia - Motor vehicles at 23,000 tpa, no biogenics • Victoria has Motor vehicles at 87,000 tpa, no biogenics In this example there are inconsistencies between states on what they report on for diffuse sources. Even then the data is based on 2007 data for NSW and 2003 for Queensland. For $PM_{2.5}$ data on diffuse sources no data from any Australian jurisdiction, but full data on all industrial sources. There is no opportunity for contextualising $PM_{2.5}$. Again refer to ASBG's recommendations. Being able to upload a file containing all required data would be a significant improvement and assist in reducing manual transfer/error and unnecessary administration costs/resources.
27	How can NPI data be made more useful for State and Territory environmental regulators? Are there any opportunities to reduce duplications of effort in data collection?	NPI in its current form is not suitably accurate for determining facility level regulatory responses. At best it could be an indicative or investigative level. ASBG would prefer to see any such investigation level based on the error ranges of the measurement method and this be fully considered before any investigation commences.

28	What additional supporting information if any would you like to see the NPI collect?	Contextual data discussing the major sources – facilities, diffuse and natural, according to substance type and emission quantities. Discussion of the data should identify which are the main sources with the main environmental and health impacts and distinguish between emission and exposure, especially in rural areas. This is discussed in Section 3 – Contextual Data.
29	Is there a sufficient basis to form a TAP to investigate ANZSIC industry sector inclusion codes and reporting thresholds?	Industry is shrinking, so the allocation of Government resources to this process is applied to fewer sites or site with shrinking inventories and scale of operations. See also Q31.
30	What changes could be made to the substance reporting threshold regime? Why?	Small mass emissions which are assessed below a risk threshold should not be reported as they can be considered trivial in health and environmental impact. For example, Benzene emissions of less than 500 grams per annum from a facility could be considered the threshold for reporting under the NPI. In comparison 13.7 m passenger motor vehicles (according to the NPI data) emitted 9,600 tonnes benzene per annum in 2016-17. Hence, each vehicle on average emitted 700 g of benzene per annum. Australian fuel standards require maximum of 1% benzene in fuel and 17.4 GL of petrol was consumed making 174 kL (152,000 t) of benzene used. However, there are many sites NPI reporting emissions of well under that of an average motor vehicle using petrol as a fuel source.
31	What changes could be made to the ANZIC industry sectors required to report or be excluded from reporting? Why?	On 24 December 2014 an update brief to the Deputy Secretary Malcolm Thompson with respect to the NPI review outlined in point 6 of the review that there was considerable scope to reduce the reporting burden on business, by providing easy to use tools. The review also recommend a risk-based revision of the reporting sectors, allowing sectors to be excluded from reporting when alternative sources of data were available or where cost of reporting exceeded the benefit to the public and the environment. Analysis indicated that excluding 14 ANZICC codes from the list of reporting sectors (see below) would remove 36% of reporting facilities whilst retaining 99.9% of the overall emissions 'risk' capture. ASBG supports the removal of the key ANZSIC industry classifications so listed, which included: Beef Cattle Feedlots, Petroleum Product Wholesaling, pig farming, poultry farming (meat and eggs), wine and alcoholic beverage manufacturing, water supply, gas supply, scientific research services, tobacco manufacturing and hydroelectricity generation. ASBG also considers since 2014 further ANZSIC industry sectors would have shrunk, moving below the threshold set.
32	Could NPI data from industry sectors containing smaller facilities be collected through industry associations?	Considering that such data would be in many cases swamped by diffuse sources and other non-NPI reporting sectors there is little benefit of undertaking a finer scale of assessment.
33	Do you support the current approach to allowing reporting outside the financial year reporting periods? Are there any changes to reporting periods you would recommend?	Yes, there are considerable benefits for being flexible on NPI reporting year start and end dates. Many members have differing internal and external reporting periods, be this environmental licensing reporting or Australian US or European reporting periods. Facilities should be made more aware of this provision.

34	Are you a reporter to the NPI? What are your experiences with the ORS? Are there any improvements to the NPI reporting process you would suggest?	No.
35	Does your government program interact with the NPI? Could the NPI be changed to improve the usefulness of these interactions? How?	N/A
36	How would the performance of the NPI's activities be affected if reporting under the NPI was centralised?	Commonwealth centralisation would add further bureaucracy to the NPI data collection. ASBG supports the current process of use of jurisdictional environmental agencies collecting and collating data.
37	Is there merit in examining ways in which the NPI could be made more relevant for State and Territory and National air quality measures? How might the NPI's relevance be enhanced?	Good data in = good data out. However, there are considerable accuracy issues with Manual estimation techniques and interpretation of such data, and almost useless diffuse source data and poor contextual data and how to compare emissions from an industrial source to a domestic source. Starting with the bad, diffuse sources require being updated and consistent between jurisdictions to remain somewhat relevant and scientifically useful and comparable. This is discussed in R3.
38	How accurate and reliable do you expect NPI data to be? What processes should be improved or introduced to make NPI data more reliable?	NPI should be more accurate than currently provided for facilities. A reworking of Manuals could achieve this, but they would still err on side of over estimating emissions, but be closer to the real emission target. Non-facility NPI reporting requires a major effort by the jurisdictions to be relevant. Standard formats or at least list of substances and sources to be assessed would improve this outcome. This is discussed in R1 and R3.
39	Would data accuracy be helped or hindered through methods to more explicitly place the onus on reporters? Such methods may include having reporters publicly release yet-to-be validated data or changing the relevant reporting clauses in the NPI NEPM.	The onus would only change if the complexity of the emissions estimation techniques increases. If for example the Manual had a different conversion factor —Australian based relevant to current processes, rather than old USA processes— this would be a minimal onus. If the estimation technique is dropped to be replaced by direct measurement then that would onerous. Releasing un-validated data is fraught. Wrong data that causes a public outrage is difficult to reverse.
40	Have you found the NPI Emission Estimation Technique (EET) manuals difficult to use or producing inaccurate, unreliable or variable estimates? Are there any in particular needing urgent attention?	ASBG members have gotten use to using the Manuals, but the inaccurate and over estimation of emissions causes considerable difficulties with regulators and concern to our members. In a number of cases regulators consider the NPI data actual emissions and refuse to accept or misunderstand the quality of the Manuals. The public can also be confused with the very poor diffuse source information and a lack of how to put this into context. This issue is also discussed under Section 2 NPI Accuracy Issues.
41	What measures are most effective to ensure compliance with NPI reporting legislative framework? Could enforcement of non-reporting and false reporting to the NPI be more effective? How?	Jurisdiction's environmental agencies generally collect and regulation NPI data collection. So the variation in enforcement is jurisdictionally based. Each will be different and allocate different resources to the enforcement of NPI data collection. Given the very poor diffuse data provided the jurisdictions do not provide a good role model for facilities reporting far more accurate data, but with its own accuracy issues.

42	Should regulatory penalties for facilities not reporting or providing poor quality data to the NPI be standardised across Australia? Why?	Penalties vary, but the non-compliance issues are usually done at the reporting level not at a penalty level i.e. threat of a penalty is enough to require compliance. As compliance is very high, the benefits of standardising penalties are one of tokenism, and considered unnecessary.
43	Is the diffuse source data (or aggregated emissions data) sufficiently accurate and current to be reliable? Could it potentially be more so? Should improving the quality of such data through for example, more regularly updated studies, be given a higher priority? Why?	No. It is indicative at best but not comparable between jurisdictions. Yes each jurisdiction has requirements under the Ambient Air Quality NEPM and its own legislation to greatly improve the detail and accuracy of diffuse sources and other non-NPI sources. From a scientific perspective the very poor data on diffuse sources means many of the conclusions can be questionable. ASBG has seen a number of examples of this to push poor environmental policy, ignoring pollutant sources which are diffuse and of high mass, such as wood heaters, but focusing only on industrial sources which in many cases is less than 10% of most air pollutants, such as NO_x, VOCs etc. This issue is also discussed under Section 2 NPI Accuracy Issues and Section 3 Contextual Information.
44	Do you think more or less public funds should be spent on the NPI?	As discussed in section 2 NPI Accuracy Issues, a reduction in the number and NPI facilities and reporting frequency can provide more resources without the need for more public funds.
45	What areas would more funds deliver more value for NPI users and stakeholders in your opinion?	As explained above in Q44, a better allocation of resources would result in a better NPI.
46	What areas of the NPI could be discontinued or allocated reduced funding?	As discussed in: • R4 – move to a biannual reporting period • R5 removing trivial emission quantities • Q41 Reducing the ANZSIC industry sectors required to report.
47	Should NPI facility reporters and/or NPI data users be asked to contribute to improvements to the NPI through a cost recovery model?	No, as the NPI should be a data-base for all the sources not just facilities. The costs with current compliance requirements are significant and further expense is simply not justified. The largest resource gap is diffuse sources, which is a jurisdictional resourcing issue.
48	If a user pays system were introduced, would you still access the data? Why/why not?	No. The quality of the NPI data is not of a commercial quality, especially for diffuse sources. Other data sources are available from most jurisdiction's for no cost. Finally, the NPI is supposed to be a community right to know, so user pays is against this principle.
49	Would the centralisation of data collection activities currently performed by the States and Territories result in the NPI delivering program efficiencies? Or false economies? Are there any costs or benefits not listed?	The current data entry system is workable but could be much improved. . Being able to upload a file containing all required data would be a significant improvement and assist in reducing manual transfer/error and unnecessary administration costs/resources. No, centralisation as seen with NGERs and EEO can lead to rather bureaucratic outcomes. It is better for jurisdictions to collect the NPI data, but the Commonwealth and NEPM process could provide standards for diffuse sources, defining the types of substances to be reported and how they can be measured. As discussed the AAQ NEPM has such requirements which should lead to a more consistent and accurate data set for NPI use.

Should you require further details and clarification of the contents of this submission please contact me.

Yours Sincerely

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