

National waste data and reporting cycle 2017-19

State and territory feedback and suggested improvements

7 OCTOBER 2019

PREPARED FOR

The Department of Environment and Energy

PREPARED IN ASSOCIATION WITH



Report title	National waste data and reporting cycle 2017-19
Client	The Department of Environment and Energy
Status	State and territory feedback and suggested improvements
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Project number	
Report date	7 October 2019
Contract date	
Information current to	16 September 2019
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Abbreviations and glossary

ACT	Australian Capital Territory
C&D	Construction and demolition (waste)
C&I	Commercial and industrial (waste)
EPA	Environment Protection Authority
FOGO	Domestic kerbside collection of food organics and garden organics together
GISA	Green Industries South Australia
hazwaste standard	<i>The Australian Hazardous Waste Data and Reporting Standard</i>
HEPA	Heads of Environment Protection Authorities
HWiA	<i>Hazardous Waste in Australia 2019</i>
HWIN	<i>Assessment of Hazardous Waste Infrastructure Needs and Capacities in Australia 2018</i>
MSW	Municipal solid waste
NEPM	National Environment Protection (Movement of Controlled Waste between States and Territories) Measure
NPI	National Pollutant Inventory
NSW	New South Wales
NT	Northern Territory
NWR	<i>National Waste Report 2018</i>
PFAS	Polyfluoroalkyl substances
QLD	Queensland
SA	South Australia
SV	Sustainability Victoria
TAS	Tasmania
VIC	Victoria
WA	Western Australia

Summary

Blue Environment, supported by Randell Environmental Consulting and Ascend Waste and Environment, was commissioned by the Australian Government Department of the Environment and Energy to produce the *National Waste Report 2018*, *Hazardous Waste in Australia 2019*, *Assessment of hazardous waste infrastructure needs and capacities in Australia 2018* and other outputs related to waste data.

A primary component of this work was liaison with the states and territories including collecting, collating and analysing their data for inclusion in the reports.

In completing the project, the consultants held workshops with each state and territory to review the project findings and obtain feedback on how the next iteration of the reports could be improved. This report documents the workshop feedback and summarises the state and territory improvement ideas.

Following the workshop feedback, the following recommendations are addressed to the Department.

Major directions

1. Ensure the direction of national waste reporting reflects the content and actions under the National Waste Policy and vice-versa.
2. Develop a national standard for non-hazardous waste data and reporting. The process should include a forum for state and territory waste data specialists to share difficulties and exchange ideas. The scope should build on Appendix B of the *National Waste Report 2018* and also cover:
 - management of stockpiles
 - data quality and facility auditing
 - comparability of cross-border flows
 - rules for when waste stops being a waste in a processing cycle
 - default assumed compositions for waste to landfill
 - reporting of disaster waste.
3. Continue to support or drive the development of a multi-jurisdictional tracking system for hazardous waste.
4. Continue to develop the accessibility of waste data with a view to eventually providing a 'dashboard' for reporting hazardous waste data and comprehensive national data.

National waste report content

5. Continue to include non-core waste in national waste reporting but be cautious not to imply this is comprehensive when it is not. Do not add incomplete data to the 'waste generation' chart without clearly showing uncertainty. Consider a 'case study' type approach. Liaise with WA and NT to obtain better quality data on mining wastes. Consider developing thresholds of dispersion for reporting agricultural wastes.
6. Seek to improve the data on markets for recycled wastes and circular economy metrics.
7. Consider reporting issues and data that focus on particular regions and region types, including northern Australia and perhaps regional, rural and remote areas generally.
8. Consider incorporating an assessment of industrial wastewater treatment infrastructure in national reporting.

9. Report accessibility to garden waste and food and green organic waste systems by the proportion of population.

Hazardous waste reporting content

10. Review the default use of 'receiving jurisdiction' data for interstate cross-border flows. Use 'generating jurisdiction' data where this proves more comprehensive.
11. Include in Australian Hazardous Waste Data and Reporting Standard a clear recommendation on which wastes should be tracked and reported as hazardous.
12. In the next iteration of the *Assessment of Hazardous Waste Infrastructure Needs and Capacities in Australia*, assess asbestos receiving infrastructure and map the known hazardous waste infrastructure, potentially through coordination with GeoScience Australia.
13. Provide better information on how the management of waste transferred interstate is reported in the statistics presented in the documents.

Other

14. Provide opportunities for states and territories to review and sign-off on their historical waste data as used for national waste reporting.
15. Produce a metadata guide for the national waste database.

1. Introduction

Blue Environment, supported by Randell Environmental Consulting and Ascend Waste and Environment, **(the consultants)** was commissioned by the Australian Government Department of the Environment and Energy **(the Department)** to produce:

- the *National Waste Report 2018 (NWR)*
- *Hazardous Waste in Australia 2019 (HWiA)*
- the *Assessment of Hazardous Waste Infrastructure Needs and Capacities in Australia 2018 (HWIN)*
- the *Australian Hazardous Waste Data and Reporting Standard – 2019 revision (the hazwaste standard)*
- hazardous waste data collations covering the calendar years 2016 and 2017 for reporting to the Basel Convention secretariat.

A primary component of this work was liaison with the states and territories. This involved collecting, collating and analysing their data for inclusion in the reports, and consulting with them on draft versions.

Prior to developing the outputs listed in the first four dot points above, an ‘improvements process’ was run incorporating research, an international review and a tour of states and territories to obtain feedback. One of the key outcomes of that process was identification of support for a national standard for non-hazardous waste data and reporting. As a result, the NWR included an Appendix B itemising some possible content for a national standard.

In completing the project, the consultants held workshops with each state and territory to review the project findings and obtain feedback on how the next iteration of the reports could be improved. This included further questioning on the idea of a national standard for non-hazardous waste data and reporting, and the content in Appendix B of the NWR. A final presentation was then made to the Department.

This report documents the workshop feedback and summarises the state and territory improvement ideas. A summary of the discussions at each of the workshops is given in Appendix A.

2. Workshop details

The workshops were held at the offices of the relevant agencies in each capital city. In general, based on previous experience, they were well attended and participation was good.

The workshops were mostly spaced over three-hours. Excluding preliminaries, introduction, break and close, about half of the time was spent on the NWR and half on the hazardous waste projects. In most cases, participants waived the break because of lack of time. Geoff Latimer of Ascend Waste and Environment delivered the presentations on HWiA, Paul Randell of Randell Environmental Consulting presented on the HWIN 2018, and project manager Joe Pickin of Blue Environment led the remainder of the presentations.

Joe attended all of the workshops in person and Geoff and Paul attended most by telephone, Paul taking most of the notes (reproduced in Appendix A). Two microphone/speaker sets were purchased to help ensure Geoff and Paul could participate effectively but it was often unclear to Paul who said what, so many of the comments are attributed only to the jurisdiction generally.

A summary of the workshops schedule is tabulated below.

Table 1 Workshops summary

	Date	Attendees	
		Consultants	Jurisdiction (primary contact in bold)
ACT	20/9/19	Joe Pickin (in person), Geoff Latimer & Paul Randell (by phone)	Gayan Ratwatte , Greg Haraldson, David Power (EPA), Valerie Papin, Jason Rose, Alex Taylor, Attie Nel, Catherine Harrington, Ann Denholm. (9, from ACT NOWaste except where stated)
NSW	11/9/19	Joe Pickin (in person), Geoff Latimer & Paul Randell (by phone)	Sara-Rose Pogson , Sarah Sutton, Heather Brooks, Phoebe Ashe, John Klepetco, Erwin Benker, Jerome Koh, Megan Webb, Andrew Ward-Harvey, Heather Brooks. (10, all from NSW EPA)
NT	3/9/19	Joe Pickin (in person), Geoff Latimer & Paul Randell (by phone)	Leonie Cooper , Deb Vidal, Mark Donnelly, Christine Tylor, Fity Peehikuru, Sean Redden (Department of Trade, Business & Innovation). (6, from NT EPA except where stated)
Qld	2/9/19	Joe Pickin (in person), Geoff Latimer & Paul Randell (by phone)	Nadia Engstrom , Laurence Knight, Dylan Walker, Sally Thomas, Kylie Hughes, Mark Hilton, Helena Svalbe. (7, all from Department of the Environment & Science)
SA	18/9/19	Joe Pickin (in person), Geoff Latimer (by phone) ²	John Vanzo , Vaughan Levitzke, Ian Harvey, Kylie McLeod (SA EPA), Steve Sergi (SA EPA). (5, from Green Industries SA except where stated)
Tas	20/9/19	Joe Pickin (in person), Geoff Latimer & Paul Randell (by phone)	Joe Tranter , Alasdair Wells, Brad Arkell, Tammy Miller, Rachel James, Cindy Ong, Jo O'Brien, Elke Bobenhausen. (8, all from Tas EPA)
Vic ¹	11/2/19	Joe Pickin (in person)	<i>No record – estimate 25 attendees</i>
	17/9/19	Joe Pickin, Geoff Latimer & Paul Randell (in person)	Luke Richmond , Nick Chrisant, Jessie Johnston, Cate Turner, Ella Badu, Gustavo Recaman, Robyn Hopcroft, Omkar Gupte (Department of Environment, Land, Water and Planning), Roya

Attendees			
	Date	Consultants	Jurisdiction (primary contact in bold)
			Mohebbati-Arany (Department of Environment, Land, Water and Planning). (9, from Sustainability Victoria except where stated)
WA	4/9/19	Joe Pickin (in person), Geoff Latimer & Paul Randell (by phone)	Julie Wyland , Cara Francis, Bernard Ryan, Bryce Pitts-Hill, John McGowan, Yeliz Kayaalp (6, all from Department of Water and Environmental Regulation)
Austr.	24/9/19	Joe Pickin, Geoff Latimer & Paul Randell (in person)	Paul Starr, Willy Kornoff, Emma Highland, Danielle Klomp, Kath Fife, Sarah Lendaruzzi, Kath Fife, Mary Milne, Adam Canarelle (sp.?), Emma Scott, Rene Analaca (sp.?), Amanda Foreman, Lyn Turner, Glen Whitehead, Elizabeth Paul, Stephanie Claydon (ASEA)

- 1 *Victoria requested and received an earlier presentation on the NWR so the second workshop was abbreviated.*
- 2 *The SA workshop was rescheduled due to a flight cancellation. Paul was unable to make the revised time.*

3. Feedback and improvement ideas

Feedback and improvement ideas expressed at the workshops are collated below by jurisdiction. The ideas were mostly prompted by the content presented, including raising again the concept of a national standard for non-hazardous waste data and reporting and the content of Appendix B of the NWR.

3.1 Australian Capital Territory

- Supports the development of a national standard for waste data and reporting. Needs to cover definitions and management of stockpiles.

3.2 New South Wales

- Concerned about reporting of data that is not of a high quality – prefer to not report at all or separate out lower quality data from the main data reports. Examples in the national reports: mining waste in the NWR (only includes National Pollutant Inventory substances); quantities of PFAS contamination in HWiA.
- Feeling that national waste reporting and the National Waste Policy are not synchronised. For example, the National Waste Policy says nothing about expanding the scope of wastes reported to cover non-core wastes.
- Why include non-core wastes when we don't control or regulate them?
- Suggest reporting of incomplete non-core commercial and industrial (C&I) waste separately in a case study format rather than combined with waste generation data.
- Supportive of a national standard for waste data and reporting. Heads of Environment Protection Authorities already working in that direction. The process should:
 - occur within the National Waste Policy framework
 - provide for a national forum to ensure states and territories can share approaches and difficulties (feeling that data system developers are too 'siloes')
 - cover data quality and auditing
 - improve the comparability of cross-border waste flows.

3.3 Northern Territory

- Agree it would be good to review and correct historical data.
- NT data should be included in all references, rather than just referring to the major tonnages. The NT may not be important to national tonnages but national reporting is important to the NT.
- NT should be able to provide better C&I recycling data in future.
- More clarity is needed on what is included in waste generation and recycling data for each jurisdiction.
- Support the development of a national standard for waste data and reporting.
- Would like to see a separate 'northern focus' discussing the specific waste issues in the northern part of the continent (lower population, more mining).
- Propose that NT data on what is exported to other jurisdictions is used in preference to the other jurisdictions' data on what they received from the NT. Checking shows those data are deficient.
- Lack of data on industrial wastewater treatment is a big gap in the national data report – needs including. NT has identified this as an infrastructure gap.

- The NT believes they can provide data on contaminated soils and should also be able to provide data on mining discharges into the environment.

3.4 Queensland

- Support the development of a national standard. The timing is good. Unsure if an implementation timeframe is needed. Needs broad support from the states and territories.
- National waste reporting needs to include more data to characterise and measure progress towards a circular economy.
- ‘Degree of dispersion’ could be used as a criterion for whether to include an agricultural waste.
- The quality of Qld hazardous waste data remains a significant issue. The proposed Heads of Environment Protection Authorities (HEPA) process towards an eastern seaboard tracking system is supported, or a national system organised by the Commonwealth.
- The hazwaste standard should include a readily available list of what wastes should be tracked.
- Would be good if there was a ‘dashboard’ access to hazardous waste data.

3.5 South Australia

- Have some patchy information on markets that could be included next time.
- National standard strongly supported. Issues:
 - this should be a Commonwealth responsibility – ‘if they want states and territories to provide meaningful and comparable data, they should help resolve inconsistencies’
 - agree with NSW that a national forum would be a good component of this work
 - should define when something stops being a ‘waste’ – even more important now in the context of bans
 - SA would be happy to adjust its definitions for consistency with a national standard.
- The HWIN should look more closely at asbestos. Lack of infrastructure availability (rather than capacity) is a significant issue for SA – some landfills are declining to accept asbestos because of the cost, hassle or insurance or staffing difficulties.

3.6 Tasmania

- A data standard would be very valuable including any tools that could be provided. Issues:
 - would help Tas establish a workplan for what it needs to improve
 - Tas would be very willing to align its systems to a national standard
 - like the idea of a working group of state and territory data people to work on the standard
 - surprised this is not on the HEPA agenda
 - should cover stockpiles reporting for both hazardous and non-hazardous wastes.
- Would like closer links between reporting and what should be regulated.
- HWIN findings should be communicated to infrastructure departments.

3.7 Victoria

- Support the idea of a national standard for non-hazardous waste data and reporting. Developing this now would be good.
- Nationally consistent definitions would be great, including for when processed waste becomes ‘not waste’.

- Would be good if the Department provided a central database for imports and exports that all states could access.
- Include access to food organics and green organics (**FOGO**) collections by proportion of population, rather than by proportion of councils.
- The HWIN should map the relevant infrastructure sites.

3.8 Western Australia

- Include FOGO by proportion of population, rather than by proportion of councils.
- Support the concept of a national standard for non-hazardous waste data and reporting. Issues:
 - has found the NWR Appendix B content useful
 - should include a default national landfill composition
 - needs to describe how to handle disaster waste in generation and recovery data.
- Mining waste:
 - agree with pushing for better information on mining waste in the national waste report
 - the numbers shown (from the NPI) are a major underestimate
 - in the NWR 'generation' chart, it would have been better to put mining waste at the top and fade it out to represent the uncertainty in the overall quantity
 - state regulators have better and more specific information than national NPI staff, based on waste audits and other site-based information, and WA would be happy to cooperate
 - if including mining waste affects the timing of the national waste report, a separate report could be developed.
 - could also use a case study type approach if the data is incomplete.
- The national waste database requires a metadata guide.
- In hazardous waste, need better explanation of how interstate transfers are handled in 'management' data. Is interstate fate included in a jurisdiction's data or only the transfer component?

4. Summary and recommendations

This section summarises the feedback and ideas from the states and territories by theme, and recommends how the national waste reporting outputs should be improved in the next iterations.

4.1 Summary of improvement ideas

NSW expressed concern that national waste reporting and the National Waste Policy are not well aligned and emphasised that they should be.

All states and territories support the development of a national standard for non-hazardous waste data and reporting, some with great enthusiasm. SA noted that this is a Commonwealth responsibility since it drives the collection and comparison of waste data. Qld and Vic stated that doing this now would be good timing. NSW proposed that the development process should include at least a day's forum for state and territory waste data specialists so they could share difficulties and exchange ideas. SA and Tas both expressed a willingness to adapt their systems to match national approaches. Suggestions for the scope included:

- definitions
- management of stockpiles
- data quality and facility auditing
- comparability of cross-border flows
- rules for when waste stops being a waste in a processing cycle
- default assumed compositions for waste to landfill
- reporting of disaster waste
- allocation of wastes to municipal solid waste (**MSW**), C&I and construction and demolition (**C&D**) waste streams.

In relation to reporting non-core waste in the national waste report, there is support from WA and the NT for including mining waste, ambivalence from most other jurisdictions and opposition from NSW on the grounds that the data quality is low and those wastes are not managed by the staff in waste sections. There was concern about how the data was expressed from both NSW and WA – the fact that the data is incomplete was not readily apparent in the 'waste generation' chart. A 'case study' type approach was suggested. Qld proposed that agricultural waste could be included only when it is not broadly dispersed.

Qld emphasised that the next national waste report should contain more data demonstrating progress towards a circular economy. This issue was also raised in the presentation without objection from any state or territory.

Other suggestions for national waste reporting

- NT would appreciate the opportunity to review and correct its historical data.
- NT seeks more clarity on what is included in waste generation and recovery data.
- NT would like a 'northern focus' section.
- NT sees a gap in data on industrial wastewater treatment and infrastructure.
- Vic suggested that the Commonwealth provide a central database of waste imports and exports that all states and territories can access.
- Vic and WA suggested that the national waste report should report accessibility of FOGO systems by population, not only number of councils.

- WA said the national waste database needs a metadata guide.

Suggestions for hazardous waste reporting

- NT would like its export data included in preference to other jurisdictions' data on imports from NT.
- Qld would like the Commonwealth to further develop its proposed hazardous waste tracking system.
- Qld would like the hazwaste data standard to clearly articulate which wastes should be tracked and reported as hazardous.
- Qld would like development of hazardous waste data to the level of a 'dashboard'.
- SA suggested the HWIN should include facilities that receive asbestos, due to apparently shrinking facility availability.
- Vic suggested the HWIN should map hazardous waste infrastructure.
- WA suggested better information is needed on how the management of waste transferred interstate is included in a state's 'management' data.

4.2 Recommendations

The following recommendations build on the improvement ideas summarised above. All these recommendations are addressed to the Department.

Major directions

1. Ensure the direction of national waste reporting reflects the content and actions under the National Waste Policy and vice-versa.
2. Develop a national standard for non-hazardous waste data and reporting. The process should include a forum for state and territory waste data specialists to share difficulties and exchange ideas. The scope should build on Appendix B of the NWR and also cover:
 - management of stockpiles
 - data quality and facility auditing
 - comparability of cross-border flows
 - rules for when waste stops being a waste in a processing cycle
 - default assumed compositions for waste to landfill
 - reporting of disaster waste.
3. Continue to support or drive the development of a multi-jurisdictional tracking system for hazardous waste.
4. Continue to develop the accessibility of waste data with a view to eventually providing a 'dashboard' for reporting hazardous waste data and comprehensive national data.

National waste report content

5. Continue to include non-core waste in national waste reporting but be cautious not to imply this is comprehensive when it is not. Do not add incomplete data to the 'waste generation' chart without clearly showing uncertainty. Consider a 'case study' type approach. Liaise with WA and NT to obtain better quality data on mining wastes. Consider developing thresholds of dispersion for reporting agricultural wastes.
6. Seek to improve the data on markets for recycled wastes and circular economy metrics.
7. Consider reporting issues and data that focus on particular regions and region types, including northern Australia and perhaps regional, rural and remote areas generally.

8. Consider incorporating an assessment of industrial wastewater treatment infrastructure in national reporting.
9. Report accessibility to garden waste and FOGO systems by the proportion of population.

Hazardous waste reporting content

10. Review the default use of 'receiving jurisdiction' data for interstate cross-border flows. Use 'generating jurisdiction' data where this proves more comprehensive.
11. Include in hazwaste data standard a clear recommendation on which wastes should be tracked and reported as hazardous.
12. In the next iteration of the HWIN, assess asbestos receiving infrastructure and map the known hazardous waste infrastructure, potentially through coordination with GeoScience Australia.
13. Provide better information on how the management of waste transferred interstate is reported in the statistics presented in the documents.

Other

14. Provide opportunities for states and territories to review and sign-off on their historical waste data as used for national waste reporting.
15. Produce a metadata guide for the national waste database.

Appendix A Workshop notes

Workshop notes – ACT

Meeting date 23/9/2019

Attendees *Consultants:* Paul Randell (REC), Joe Pickin (BE), Geoff Latimer (AWE)
Tas EPA: Gayan Ratwatte, Greg Haraldson, David Power (EPA), Valerie Papin, Jason Rose, Alex Taylor, Attie Nel, Catherine Harrington, Ann Denholm

Notes taken by Paul Randell

ACT - who	What
ACT	Proposed explanation for big increase in metals waste generation in about 2009: China was controlling the market so people stockpiled until there was a large release in prices
	Support for national standard, that needs to cover definitions, how to manage stockpiles data
	Emerging issues include solar panels – will be large volumes.
	NWR data has got better over time
	Biosolids incineration: ACTew AGL no longer the water facility owner – it's Icon Water. Problem with encroaching housing. Their biosolids incineration is old technology and they are currently looking at what should happen once it is decommissioned.
	Slide 48: discussion of PFAS contaminated biosolids, ACT raised concerns about lack of data. They are looking at improving the monitoring of halogens on the way into the landfill and also in leachate.
	On medical waste, there is autoclave capacity in the ACT, and they receive material from Wagga, Yass and other places. This contradicts what Daniels told Paul Randell in developing the report.
	ACT contaminated soils would not generally be considered hazardous waste.

Workshop notes – NSW

Meeting date 11/9/2019

Attendees *Consultants:* Paul Randell (REC), Joe Pickin (BE), Geoff Latimer (AWE)
NSW EPA: Sara-Rose Pogson, Sarah Sutton, Heather Brooks, Phoebe Ashe, John Klepetco, Erwin Benker, Jerome Koh, Megan Webb, Andrew Ward-Harvey, Heather Brooks

Notes taken by Paul Randell

NSW - who	What
NSW EPA	Asbestos, waste data has been validated and is due to a big increase from construction. Very small portion of overall asbestos is wrapped asbestos. Not surprising that with large amount of asbestos with large amount of development. NSW asbestos limit for soils has no lower limit, any asbestos detected = asbestos. The fact that NSW has much more asbestos than any other state is probably a mix of high levels of development and stricter application definition.
	Does the lack of information about PFAS justify the publication of highly uncertain estimates? NSW would prefer not to report poor quality data and wait until the data is of a quality that they can be confident is correct.
	Slide 45: C&I non-core wastes should be reported separately as the data quality is very different. Including mining waste data from the NPI greatly underestimates total waste and

NSW - who	What
	<p>may mislead policy makers. Could be done separately in a 'case study' format rather than added to the top of waste generation.</p> <p>Why include mining and agricultural waste if we're not actually managing and regulating it? Why do we need to know about it?</p> <p>Slide 48: The Department could facilitate a national forum to ensure that each state's data issues are heard.</p> <p>Slide 48: NSW suspects that the data quality in other jurisdictions is not as high as theirs, and this leads to exaggeration of their recovery rates. For example, SA may not audit the reported use of demolition wastes as haul roads as well as NSW; Vic landfill data is reportedly poor; Qld allows 'levy free' areas of landfills for recycling which may be exploited by landfill operators; other states don't have robust systems for netting out recycling contamination or accounting for stockpiles. NSW recycling is reported based on materials that leave a recycling facility for use, not material on the way in. They also have restrictions on stockpiles. The take into account mass losses from composting. They spend a lot of time explaining why their recycling rate appears comparatively low.</p>
Joe	<p>If you have ideas on indicators associated with data quality issues please let us know</p>
NSW EPA	<p>Slide 63: NSW numbers do not look correct for green organics and FOGO provision</p> <p>Slide 66: for future versions of the report, the reported policy settings of the states and territories should reflect what is measured under the National Waste Policy</p> <p>Slide 70: Comparability of cross jurisdiction data is a key issue for NSW</p> <p>Slide 70: A national standard on waste data and reporting would be something NSW would like to work towards. HEPA papers are working in that direction already.</p> <p>Slide 70: Conversations to resolve waste data and reporting variability between states and territories can't happen in isolation. Need to get all the states together to discuss.</p> <p>Slide 70: Any national standard for waste data and reporting should be delivered within the framework of the National Waste Policy.</p> <p>There seems to be some misalignment between the National Waste Policy and national waste reporting. The policy says nothing about expanding the scope of materials reported to cover mining waste etc.</p> <p>Slide 70: 18/19 data ready in couple of months. NSW will not be reporting landfill compositional data to the Department in future. They don't think the data is good enough and have a submission to government for ongoing data reporting. They have good enough data for C&I (2014 audit) and potentially for MSW (reports from local governments, but not analysed). However, C&D waste to landfill data is from 2005.</p>

Workshop notes – NT session

Meeting date 3/9/2019
Attendees *Consultants:* Paul Randell (REC), Joe Pickin (BE), Geoff Latimer (AWE)
NT EPA: Deb Vidal, Christine Taylor, Mark Donnelly, Leonie Cooper, Fity Peehikuru
Department of Trade, Business & Innovation: Sean Redden.
Notes taken by Paul Randell

NT - who	What
NT EPA	Q: Where did you get mining and minerals processing data from. A: NPI and specific sources such as Australian Ash Development Association
	Comment: 'lumpiness' in the data could be a large project such as Inpex gas project in 2015. Agree the need to get the past trends sorted out
	Q: Is SA recycling data inclusive of waste sent from other jurisdictions? A: is should be excluding of waste imports from other jurisdictions
	Comment: we should not assume that electronic system are better quality data
	Comment: NT data is a small proportion but national data is very important to NT for its own reporting
	Slide 32: Comment: table is not correct for NT. Container deposit system reporting is required and landfill disposal reporting is required as a license requirement. If landfills do not report, they can be fined or have license revoked. Also, hazardous waste tracking is in place for exports from the Territory (under the NEPM).
	Improvement: NT C&I collections for recyclables could be reported as only a small number of companies providing this service around Darwin.
	Improvement: need to improve clarity of what is included in waste generation and recycling data for each state
	Comments: this report was more useful than previous versions. The data story was clearer and more easily communicated
	Need a national standard for waste reporting.
	NT would like to be able to see specific to their jurisdiction – don't exclude because we're not important to the national picture.
	Would like a separate 'northern focus' of the reporting covering the unique issues in northern Australia.
	We have checked data from receiving states and are convinced that our data on waste we export to them is better than their data on waste they import from us. Please use our data for this.
	Lack of data on industrial wastewater treatment is a big gap in national data reporting.
	Imp: 55 licensed sites that do publicly report and their reports are uploaded each year.
	Q: does 'other K' include K130? A: no, we exclude it as better data is published biosolids partnership

	NT can provide data on contaminated soils
	Should be able to provide data on mining discharges to the environment.
Gas development	Comment: the NT has no coal-seam gas industry. And any development would not likely generate brine wastes.
NT EPA	Comments: NT has a need for liquid waste treatment capacity to service mining sector generally.

Workshop notes – Qld

Meeting date 2/9/2019

Attendees *Consultants:* Paul Randell (REC), Joe Pickin (BE), Geoff Latimer (AWE)
Department of the Environment and Science: ENGSTROM Nadia; KNIGHT Laurence; WALKER Dylan; THOMAS Sally; HUGHES Kylie; SVALVE Helena; HILTON Mark

Notes taken by Paul Randell

Qld - who	What
Qld	Q: What is included in the Ash data? A: not all onsite ash from sources such as bagasse is included.
Laurie	Q: What are the data sources for C&I? A: Qld data, NPI data.
Kylie	Q: Slide 15. Are the landfill tonnages reported for Qld inclusive of NSW wastes exported to Qld or excluding? A: Joe, it is based on generating state and the fate, not where it was disposed.
Qld	Q: Slide 25. Where is paunch? Joe – under ‘food-derived hazardous waste’
Laurie	Comment: Slide 34 NSW C&D recyclables sent to Qld – not recyclables more like residuals.
All	Q: Slide 37 general support for national standard, keen to see it developed and think the timing is good. Unsure if it needs to have any implementation timeframe. If states all agree to develop and maintain a standard, it will be adopted over time.
Dylan	Q: Could we do more to report on circular economy? Need to improve the reporting of fate of ‘recycled’ materials. A: Agreed
Laurie	For agricultural wastes we could use the concept of ‘degree of dispersion’ as a criterion for what’s included and what isn’t.
Kylie	Comment: Container deposit system is going to drive down the amount of waste in co-mingled bins and could give misleading results in future reports
	Q: could biosolids contaminated with PFAS, applied to land, contaminate soils above contamination limits? A: Geoff, yes would likely be, based on results of Australian biosolids tested.
Sally	Qld data quality continues to be a key issue. Could get Eastern seaboard states to agree to a consistent tracking system. Would be worth considering if readily achievable.

Qld - who	What
Sally	<p>Comment: Qld finds the comparisons of what is covered, and how, in each jurisdiction very useful. Also, should the standard have a list of what wastes should be tracked as a quick reference for the States to use?</p> <p>Interstate and intrastate codes should also align.</p>
Sally	Would be good if there was a dashboard to access data.

Workshop notes – SA

Meeting date 18/9/2019
Attendees *Consultants:* Paul Randell (REC), Joe Pickin (BE), Geoff Latimer (AWE)
Green Industries SA: John Vanzo, Vaughan Levitzke, Ian Harvey
SA EPA: Kylie McLeod, Steve Sergi
Notes taken by Geoff Latimer

SA - who	What
Ian Harvey	Do the food waste definitions used in the NWR align with those from the National Food Waste Strategy? Response: Similar, although the NWR also includes hazardous organics, such as grease trap waste.
GISA	Does the glass proportional breakdown in the kerbside recycling bin (20-35%) provide further breakdown into types of glass? Response: No – this is a range collected from the highest and lowest proportions reported across all States and Territories.
GISA	National Product Stewardship schemes typically have relatively low % coverage of their target waste – “not very effective”. Some discussion that that the data was from 2016-17 and that programs such as DrumMUSTER and Paintback were likely to have higher coverage now.
John	Recycling activity survey breaks down recyclables by location of fate – intrastate, interstate, overseas. The survey is voluntary so can only go so far and that once wastes/ commodities are received across borders “who knows what happens after that.”
John	Also have patching information on markets
Vaughan	On national standard – Please! This is essential and strongly supported. Should be led by the Commonwealth – indeed, if they want the states and territories to provide data each year it should provide the tools necessary to make the data meaningful. SA was keen for the Commonwealth to put some “skin in the game” to create a national framework to make this Standard happen.
Vaughan	Understands there are currently moves to develop an international standard for MSW data collection and reporting – 50-page UN document. Will forward details. Vaughan may be involved in peer review.
Vaughan & others	Agree with NSW idea to get states and territories together to discuss. A national forum to develop this would be “eminently sensible”.
	This might provide direct input and urgency to the development of national consistency in this area.
	SA would be happy to change its definitions to match those in a standard if it resulted in such consistency.

SA - who	What
	SA is very interested in the perspectives and recommendations from the NWR 2018 Appendix B, given our “unique position” of knowledge without partisan connections.
	The standard should aim to set things up for the future.
	An issue to include in the standard is when waste is no longer a waste. Important now in the context of the export bans.
Steve	SA soils go to storage because of ‘Urban Renewal’, a government-owned body that stores low-level contaminated soil suitable for infrastructure projects. Allows ‘blending’.
Steve	Are you aware of the heads of EPA discussions on PFAS thresholds? Geoff – ‘yes’.
Vaughan	PFAS should not be managed only through wastes. Products containing PFAS need to be banned, e.g. clothes, furniture. How come it’s ok on our skin but not in the soil?
Steve	The capacity shortage identified for clinical waste thermal infrastructure – was this a function of industry over-reporting due to large volumes of very low-density material, creating erroneously high arisings? Response later by email.
Steve	The infrastructure assessment should do more looking at asbestos. They are finding more facilities are declining to accept asbestos, even though they are permitted to do so, because of the hassle.
Steve	Given the proposed exports ban, capacity in relation to tyres will be more important next time.
EPA & GISA	There was a lengthy discussion about PFAS, PFAS soils and PFAS in biosolids. Particular concern was raised about biosolids – what is the pathway to PFAS ending up in biosolids and how is this being evaluated to attempt to address the problem at the source end? The PFAS issue is not simple one of AFFF foams and Defence sites, but is also due to continued use of PFAS-containing products and packaging. Where is the regulatory action at the front-end of the problem?

Workshop notes – Tas

Meeting date 20/9/2019

Attendees *Consultants:* Paul Randell (REC), Joe Pickin (BE), Geoff Latimer (AWE)
Tas EPA: Joe Tranter, Rachel James, Tammy Miller, Cindy Ong, Alasdair Wells, Brad Arkell, Jo O’Brien, Elke Bobenhausen

Notes taken by Paul Randell

Tas - who	What
Tas EPA	EPA now starting to regulate recycling sites due to large stockpiles that have become an issue.
	EPA Tas have a waste strategy that is out for comment at the moment
	Container deposit system will come into effect in 2022
	Waste levy implementation will be in place by 2021.
	Organics are a key issue and need to understand the organics flow around the state.

Tas - who	What
	Action: Joe to confirm what sector drove the large increase in generation (<i>subsequently reported to be a particularly large transfer from the zinc smelter to SA in 15-16</i>)
	Slide 28: The green organics and FOGO tables look wrong, thought there were higher rates
	Slide 32: Tas have no resources to build recycling survey system. Currently, done in house by Tammy phoning people.
	Improvement: standard would be very valuable including any tools that could be provided. To have a national standard would be a huge help for Tas to set out a work plan. Like the idea of a working group. Surprised that this is not on the HEPA agenda. Tasmania would be very willing to align its systems with national guidance.
	EPA received legal advice that paragoethite is not a waste
	Imp: the use of the national reporting to enable regulation would be very useful
	Slide 43: reason for tend increase - Copping site processing large volumes, UST clean-up, little bit of PFAS, Hobart clean-ups
	Slide 52: PFAS codes are not yet a legal code in the NEPM, only listed in the National Environmental Management Plan.
	HWIN imp: engage more with infrastructure departments on findings.
Jo	This work is really useful – like a gift!
Tas	Imp: stockpiling reporting should be improved, key issue for Tas, for both haz and non haz wastes. Would be keen on systematic methods and metrics for measuring and reporting – risk issues (fire etc.). Will surely be needed in the context of the export bans.
Cyndi	Do we have any insight into issues relating to manufactured stone waste? They have examples of dusty offcuts. What about vacuumed waste etc.?

Workshop notes – Vic

Meeting date 17/9/2019

Attendees

Consultants: Paul Randell (REC), Joe Pickin (BE), Geoff Latimer (AWE)
Sustainability Victoria: Robyn Hopcroft, Gustavo Recaman, Nick Chrisant, Luke Richmond, Ella Badu, Kate Turner, Jessie Johnston
Department of the Environment, Land, Water and Planning: Omkar Gupte, Roya Mohebbati-Arany

Notes taken by Paul Randell

Vic who	What
SV	Stockpile information from EPA will be included in the market intelligence reporting
	A material flow analysis is being completed for several waste streams
	Completing supply chain analysis for a range of wastes, the SV 'priority waste' streams (incl. recyclables)

Vic who	What
	Under new EPA regs all recycling facilities will have some kind of licence or permit and the reporting to Government may be part of fulfilment of the new 'general environmental duty'. EPA will collect the data and it will hopefully be accessible to SV.
	Standard would be a good idea. All jurisdictions continue to work in isolation. Timing would be good for SV now.
	Like the idea of kicking off the standard with a national forum for waste data specialists.
	The orphaned SKM stockpiles are not included in SV data because only processor data is collected, not data from MRFs. Stockpiles and MRFs stockpiles are not covered in Vic data
	National Standard could compare to national water data standard
Nick Chrisant	Would be great to have common definitions. Auditor General criticised SV's use of terminology but no standard. E.g. When does reprocessed waste stop being waste?
	The Department should be maintaining a database for imports and exports, centrally, that states can access
	Hazwaste improvements: need to ensure that hazwaste data is each year, not biannual
	HWIN: should include a mapping of the infrastructure sites, not just the database

Workshop notes – WA

Meeting date 4/9/2019

Attendees *Consultants:* Paul Randell (REC), Joe Pickin (BE), Geoff Latimer (AWE)
Department of Water and Environment Regulation: Cara Francis, John McGowan, Bernard Ryan, Julie Wyland, Bryce Pitts-Hill, Yeliz Kayaalp

Notes taken by Paul Randell

WA - who	What
DER	Slide 9: comment needed to note that Sankey chart includes core C&I only
	Q: Slide 18: what is the form of the exported materials (i.e. partly processed or unprocessed and contaminated recyclables)? A: needs further investigation
	Slide 28, should include FOGO by population
	Slide 35, like the idea of a standard for waste data and reporting. Have found Appendix B of the NWR useful.
	Like the inclusion of mining waste. In the chart on waste generation, should put mining above mineral processing waste, then fade it out to white to reflect the uncertainty in the estimate. NPI data is a major underestimate of the quantities. State NPI staff do audits of some sites which gives data on amount of waste to tailings dams and shows much larger tonnages from just one site than our reported total. State regulators will have better and more specific information than national NPI people. Could do a 'case study' type approach for particular areas. WA would be keen to cooperate in this data (Cara).

WA - who	What
	If the inclusion of mining waste threatens the timing on the national waste report, could do a separate mining waste in Australia report?
	Would like to have national landfill compositions in the data standard.
	The national waste database needs a metadata guide.
	Would like more on disaster waste. Is it included in 'waste generation'? In recovery rate calculations?
	Q: does the management chart include interstate movement fates or is it under transfer? Also, where are exports allocated under these management types. A: yes, interstate would be under transfer, exports are excluded from capacity assessment as this is an Australian capacity assessment, not international.
	Need clearer explanation of how interstate and export tonnages are allocated to management in all reports.
	PFAS may be in more wastes than we know. Testing is required only if PFAS contamination is suspected.