

REPORT ON PROCEEDINGS BEFORE

**SELECT COMMITTEE ON PROPOSED ENERGY FROM
WASTE FACILITIES**

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At Macquarie Room, Parliament House, Sydney, on Monday 15 December 2025

The Committee met at 9:30.

PRESENT

The Hon. Nichole Overall (Chair)

Dr Amanda Cohn (Deputy Chair)

The Hon. Natasha Maclaren-Jones

The Hon. Peter Primrose

The Hon. Rod Roberts

The Hon. Emily Suvaal

PRESENT VIA VIDEOCONFERENCE

The Hon. Dr Sarah Kaine

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The CHAIR: Welcome to the first hearing of the Select Committee on Proposed Energy from Waste Facilities. I acknowledge the Gadigal people of the Eora nation, the traditional custodians of the lands on which we are meeting today. I pay my respects to Elders past and present, and celebrate the diversity of Aboriginal peoples and their ongoing cultures and connections to the lands and waters of New South Wales. I also acknowledge and pay my respects to any Aboriginal and Torres Strait Islander people joining us today. My name is Nichole Overall, and I am Chair of the Committee. I also briefly note that we are here with heavy hearts today. I take this opportunity to ask us to acknowledge and pay respect to the moment by having a minute's silence.

I ask everyone in the room to please turn their mobile phones to silent. I note that parliamentary privilege applies to witnesses in relation to the evidence they give today. However, it does not apply to what witnesses say outside of the hearing. I urge witnesses to be careful about making comments to the media or to others after completing their evidence. In addition, the Legislative Council has adopted rules to provide procedural fairness for inquiry participants. I encourage Committee members and witnesses to be mindful of these procedures.

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Ms GAYLE SLOAN, Chief Executive Officer, Waste Management and Resource Recovery Association of Australia, affirmed and examined

Dr JACKIE WRIGHT, Principal/Director, Environmental Risk Sciences Pty Ltd, affirmed and examined

The CHAIR: Welcome, and thank you for making the time to give evidence today. Would you like to start by making a short opening statement?

GAYLE SLOAN: Good morning, members of the Committee. Thank you for allowing us to appear today. I am the CEO of the national peak body for the waste and resource recovery industry representing the entire breadth and depth of that industry. I am here to provide an evidence-based perspective on the role that EFW plays within modern material management systems. New South Wales generates substantial and increasing volumes of waste. Between 2015-16 and 2022-23, the amount of waste generated moved from 18.7 million tonnes to 22.4 million tonnes, with a projection of nearly 37 million tonnes of waste generated by 2040. Despite strong recycling efforts, we still have over seven million tonnes going to landfill each year.

Recently the Minister talked about the fact that Greater Sydney is running out of landfill capacity. We have too much waste to rely on landfill alone. Energy from waste should not be viewed in isolation; it's part of a system-based approach to managing material and, in particular, managing residual material. Everything eventually reaches end of life. We need to recognise that we can't re-use and recycle everything forever. We also need to recognise that energy from waste is preferable to landfill for managing residual material. EFW does not operate in isolation. It is not a standalone solution. It is an integrated component of a circular economy that reduces reliance on landfill, recovers energy from residual material and recovers metals and other materials from ash for re-use.

EFW is also a well-established and proven technology that has operated globally and safely in urban environments for decades. Countries such as Denmark, Sweden, France, Germany and the Netherlands operate EFW facilities within, or immediately adjacent to, major cities—close to where waste is generated and energy is used. In cities such as Copenhagen, Paris, Vienna and Hamburg, EFW facilities coexist with residential communities, commercial centres and public infrastructure without any adverse health or environmental outcomes. These examples demonstrate that when properly regulated, EFW can and does operate safely in urban environments.

WMRR supports a truly integrated system that follows the waste management hierarchy. That hierarchy clearly places energy recovery above disposal for residual waste for good reason. EFW facilities are self-contained, tightly regulated and continually monitored. Unlike landfill, they do not create long-term risk associated with leachate or gas migration. When EFW facilities reach end of life, just like any facility, they can be upgraded or replaced without leaving a legacy environmental burden—something that cannot be said for landfill. To be very clear, EFW is not incineration as people may remember it. This technology has evolved significantly since the 1900s and is now akin to a power station. New South Wales has the benefit of global experience, and decades of operational learning allow us to adopt best available and most advanced facilities.

Chair and members, if this inquiry is to genuinely address the waste challenge, we must be clear where responsibility lies. The waste and resource recovery industry does not actually create waste. We receive and safely manage what society discards. A critical gap in Australia's policy framework is insufficient regulation of what is placed on market. We do need stronger, enforceable requirements to ensure products and materials are safe, recoverable, non-toxic and designed for re-use, recycling or responsible end-of-life treatment. This includes addressing substances of concern, such as PFAS and other persistent chemicals, which actually contaminate our recycling streams, increase environmental risk and significantly raise downstream management costs. If materials cannot be safely recovered or treated, they should not be placed on the market.

Responsibility cannot stop at the factory gate or the check-out. We need stronger generator and producer obligation, including EPR, clear take-back and stewardship requirements, mandatory sustainable product design standards and accountability for full life cycle impacts. Too much responsibility is currently being shifted downstream onto councils, communities and the waste industry, rather than being fairly shared across the supply chain. A truly circular economy requires shared responsibility across product designers, manufacturers, retailers, consumers and all levels of government. Our industry's role is clear and often misunderstood. We safely manage what is discarded, operate under strict environmental and health regulation, invest heavily in infrastructure, technology and compliance, and protect communities, workers and the environment every day. We do this extremely well, but we cannot and should not be expected to indefinitely compensate for poor product design, hazardous material choices and weak upstream regulation.

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There is a strong body of evidence showing that modern energy-from-waste facilities are safe and highly regulated, with advanced flue gas treatment and continuous emissions monitoring. New South Wales' EFW criteria do actually align now with European best available techniques, recognised as world best practice. These facilities are fundamentally different from any incinerators of the past and should not be conflated with outdated technologies. The Committee's deliberations, I'm sure, will be grounded in evidence and not emotion. We're going to hear from independent regulators that assess emissions against scientific standards. We know that the facilities that we need to develop in New South Wales must meet rigorous health and air quality requirements before approval, and international experience shows that modern EFW facilities operate alongside communities when properly regulated.

In conclusion, EFW recycling and landfill are essential services, but they're the last line of defence and not the root cause of the challenge we face at the moment. We need to be able to manage the ever-increasing amount of waste that's generated. We need to see EFW as part of a broader systems-based approach. EFW facilities are safe and tightly regulated. They do, however, require lasting, stronger upstream regulation and shared responsibility. I've got Dr Jackie Wright with me today to talk a bit more about the science, the evidence, the emissions and the risk profile to support WMRR's application. I'll pass to Jackie now.

JACKIE WRIGHT: Thank you for the opportunity to also appear today. I have at least 35 years of experience in doing human health, environmental toxicology and risk assessment work throughout Australia. My team and I have been involved in assessing more than a dozen energy-from-waste facilities that have been proposed in Australia, many of which have been approved in other States. Our focus on these assessments is community health, and my comments here reflect our experience in conducting the scientific assessments for energy-from-waste facilities.

Can I start by saying that energy-from-waste facilities designed and operated under modern standards, in compliance with the EU brief, are safe for the community in residential, commercial and agricultural areas. Like any proposed facility that has any emissions to air, or even water or soil, Australia has robust and agreed guidelines on how we do assessments for community health. These have been established by enHealth and follow international best practice. These guidelines allow us to properly assess emissions to air from energy from waste and assess risks to human health using robust scientific methods. These are fundamental guidelines that we use for assessing energy-from-waste facilities anywhere in Australia.

When we look at other things such as landfills, which is the alternative to energy from waste, they also have emissions. Risks from leachate are often higher than what we get when we look at energy from waste. They also have uncontrolled air emissions that also need to be considered. The pollutants that we consider, when we look at the operation of energy-from-waste facilities, are already in the environment. That includes metals, dioxins and even PFAS. This means the community is already exposed to these pollutants every day. Any assessment that we do for energy from waste looks at whether these exposures could change and be measurable in the community. When we look at emissions to air from energy from waste facilities, these do not result in measurable changes from what is already in the environment in soil, water and also agricultural produce.

That includes pollutants such as PFAS. Energy from waste is one of the few technologies that actually destroys PFAS. For municipal solid waste, the levels of PFAS are low; it's residual materials that come from the consumer products that we dispose of. Energy from waste has the ability to destroy but also capture that in pollution control technology, so what comes out at the end is low, trace levels of PFAS. When we look at the risks to human health, the margin of safety is extremely large. It's up to a million-fold, so that's very significant.

Any of the changes that we look at for all of the pollutants are not measurable, and it's not appropriate or sensible to undertake measurements of these pollutants in the environment when an energy from waste facility is operating. That goes for things like soil, water or produce. Such measurements would never be able to distinguish between ambient variable levels and any change from the operation of energy from waste. The most appropriate place to manage and measure emissions from energy from waste is in the stack, where it would be required to be part of a licence and in accordance with best practice standards from the EU.

When we do risk assessments from energy from waste, we look at all the ways that the community could be exposed to those pollutants. That includes agricultural produce, whether this comes from home consumption or sale into the market. There's no evidence that energy from waste would have any measurable impact on the quality of agricultural produce. While I understand the concern in agricultural communities, the reality is the change in pollutant concentrations from energy waste is so small, it can never result in measurable impacts to produce.

Modern energy-from-waste facilities are not the same as the older incineration technologies. Care must be taken to ensure that the facts on energy from waste are not muddled or conflated with older incinerators. It's common for the community to lean on epidemiological studies conducted on other facilities. These studies must

CORRECTED

be reviewed with significant care, particularly in relation to the technology used and the fuel that is combusted, but also whether the study is robust and can be relied on in terms of outcomes. Most epidemiological studies have to deal with confounders, other sources of exposure. All the pollutants that we're dealing with we're already exposed to. There are many other sources of those exposures and they often have other limitations. For example, they don't actually measure what the exposure is.

The CHAIR: Dr Wright, are we heading towards the conclusion of your very short submission?

JACKIE WRIGHT: Yes. It's very hard to make sure that these studies are reliable. It's really important that we undertake these assessments using robust methods, which we do have in Australia; they come from enHealth. Those are the techniques that we should be using to inform decisions on the safety of these facilities.

The CHAIR: Thank you very much. We do want to get to as many questions as possible in the 16 minutes that we have left. It will be free flowing. I'll begin and then move to Mr Roberts for questions as well. Ms Sloan, turning straight to the point that you made that energy-from-waste facilities at end of life can be upgraded or repurposed, has that been done elsewhere?

GAYLE SLOAN: I believe so, yes, overseas.

The CHAIR: What sort of time frame are you looking at when you say "end of life" for such a facility?

GAYLE SLOAN: Twenty to 30 years, depending on the construction.

The CHAIR: One of the points that I'm sure both of you would know is that international experience shows that what's termed residual waste continues to change with technology and policy developments as well. Plastics and textiles were once burned; they are now recoverable. When you're talking about long-term certainty for proponents looking at investing in energy-from-waste facilities, couldn't the opportunity for such changes to what constitutes residual waste potentially impact the long-term certainty of energy from waste, if you're talking 20 to 30 years for it to reach end of life?

GAYLE SLOAN: No, regrettably, because we see from both population growth and the amount of consumption, particularly in Australia, that we're finding that the ongoing quantum of residual is going up, not going down. I absolutely accept that as we better design our products—so, single polymer or single fabric sources—there is a better chance to recover. But unless Australia starts to really focus hard on sustainable design, we continue to see the amount of waste discarded well over—we're currently, nationally, at 67 per cent resource recovery. Thirty years from now it would be very hard, I think, for us to hit 80 per cent, regrettably, which still leaves 20 per cent of what's placed on-market for a facility. Facilities are about 400,000 to 600,000 tonnes. We're not building facilities to deal with 20 million; we're dealing with 400,000 to 600,000 tonnes.

The CHAIR: And that would be capacity? When you're talking 400,000 to 600,000 tonnes, is that the maximum capacity that facilities are being built to be able to deal with?

GAYLE SLOAN: It depends on the number of lines they put in. On average, 600,000 is the size that we're seeing at present. We're seeing overseas that others are larger—but larger countries, larger population growth. We absolutely agree that the goal has got to be reducing how much goes to residual. We absolutely support that, because we don't want to be discarding those valuable raw materials. But unfortunately, we still produce and consume way too much material, and it's going to residual.

The CHAIR: Dr Wright, you talked about how you've analysed at least a dozen energy-from-waste facilities. I'm presuming that you're referencing Kwinana in Western Australia, and Queensland and Victorian examples. But none of those have been without issues as well.

JACKIE WRIGHT: We haven't done assessments for Kwinana. Kwinana actually didn't involve a detailed human health risk assessment for the community. But we've done others for Victoria and Queensland. Yes, all facilities have their challenges in their design, but in terms of what they actually meet in terms of emissions, which is what the community is exposed to, that is what they achieve. Those emissions are the ones that we assess, in terms of what the community can be exposed to, and those are very low. That's what we assess.

The CHAIR: One final question from me before I go to Mr Roberts. It is for you both, because you both, in various ways, point to the fact that energy from waste is in order if it's properly regulated. If regulation is the safeguard, noting the focus on facilities specifically in regional communities, wouldn't locating them wherever the waste is actually being generated be a more process-driven outcome?

GAYLE SLOAN: We believe these can be located anywhere, because they're safe.

JACKIE WRIGHT: Yes, I would agree with that. They're safe to operate anywhere. Whether it's an urban environment or an agricultural environment, they are safe to operate.

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The CHAIR: Thank you. I note that we have been joined by Dr Cohn, but I'll go to Mr Roberts first for his questions.

The Hon. ROD ROBERTS: Thank you for your attendance this morning and for your submissions. One of my questions was that one that was asked by the Chair today. So you would support those facilities being developed or proceeded with in metropolitan areas in Sydney?

GAYLE SLOAN: Correct.

The Hon. ROD ROBERTS: Ms Sloan, I take you to page 5 of your submission. Have you got that in front of you?

GAYLE SLOAN: No, but I'll remember.

The Hon. ROD ROBERTS: It is the part about the Kwinana project. I'll read it to you:

The EPA and Waste Authority are confident that, subject to appropriate regulation, along with the matching of suitable technologies to types of waste input and appropriate plant scale, waste to energy plants employing best practice can be operated with acceptable impacts to our community.

What are those impacts?

GAYLE SLOAN: We've heard from Dr Wright today that they're negligible impacts. We're dealing with material that's already circulating through supermarkets and other places. The impacts are minimal.

The Hon. ROD ROBERTS: But this is your submission, though. You say that they can be operated within acceptable impacts. What are those impacts?

GAYLE SLOAN: The emissions limits are the acceptable impacts.

The Hon. ROD ROBERTS: So there are emissions then?

GAYLE SLOAN: Absolutely. There are emissions everywhere.

The Hon. ROD ROBERTS: But you're saying that they're within an acceptable limit then?

GAYLE SLOAN: Correct.

The Hon. ROD ROBERTS: Dr Wright, you say you've been involved in dozens of projects—I think you said before—in Victoria and Queensland. Who were you engaged by to do those projects?

JACKIE WRIGHT: For all those projects, we've been engaged by various different waste management companies—the companies that are the proponents of those particular facilities.

The Hon. ROD ROBERTS: So they're the proponents of energy-from-waste projects that you've been engaged by?

JACKIE WRIGHT: Primarily. We've also been engaged by New South Wales planning in order to review some other projects.

The Hon. ROD ROBERTS: Do you have any form of commercial relationship with any of the proponents for the proposed energy-from-waste projects in New South Wales?

JACKIE WRIGHT: We have been working with companies as consultants. We've been working with companies in terms of doing health risk assessments. We are independent, but we have no financial relationship, other than being engaged as consultants to do our job in New South Wales.

The Hon. ROD ROBERTS: But your financial relationship is you being paid to do that work.

JACKIE WRIGHT: Correct.

The Hon. ROD ROBERTS: That's the commercial relationship that I'm asking about.

JACKIE WRIGHT: That's my commercial relationship, yes.

The Hon. ROD ROBERTS: So you've been engaged by proponents for these projects then?

JACKIE WRIGHT: Correct.

The Hon. ROD ROBERTS: I take you to page 10 of your submission.

JACKIE WRIGHT: Sorry, I don't have that in front of me, but that's fine.

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The Hon. ROD ROBERTS: I'll quote you. It's your submission. I'm quoting from the part of it that talks about the study by—you'll have to accept my pronunciation of Dutch—van Dijk et al from 2015. Part of the submission states:

The study showed that emissions from these facilities did not affect the quality of crops and milk in the surrounding areas.

So we agree that there are emissions then?

JACKIE WRIGHT: That's correct. There are.

The Hon. ROD ROBERTS: And they are present?

JACKIE WRIGHT: They are present, but they are very low.

The Hon. ROD ROBERTS: But they're still present, though?

JACKIE WRIGHT: Yes.

The Hon. ROD ROBERTS: Do they have any effect at all?

JACKIE WRIGHT: No, they don't have any measurable effect. They're so low that they wouldn't be measurable.

The Hon. ROD ROBERTS: I take you to page 11 of your submission. We're talking now about Majorca in Spain. That part states:

... the levels reported were variable as expected in soil (with no clear trend of accumulation), with all samples well below the maximum limit value relevant for soil.

So there were still dioxins in that soil then?

JACKIE WRIGHT: There are dioxins in all the soil. All the soil that's outside Parliament House has dioxins in it.

The Hon. ROD ROBERTS: But it was present in these tests surrounding the energy-from-waste facility there.

JACKIE WRIGHT: It's present in all tests. That's part of what I'm trying to say. Dioxins are present naturally in the environment already. When you measure them, you're going to find variable levels anywhere that you measure them. There is no evidence that the energy-from-waste facility changed that from being the typical background ambient.

The Hon. ROD ROBERTS: The proposed facilities at Parkes and Tarago, are they for industrial waste or municipal waste?

JACKIE WRIGHT: Municipal waste.

The Hon. ROD ROBERTS: No industrial waste at all?

JACKIE WRIGHT: There may be a small proportion. I honestly can't remember the make-up, but it's primarily municipal solid waste.

The Hon. ROD ROBERTS: Could you just inform the Committee then about what the difference is in terms of industrial waste and municipal waste?

JACKIE WRIGHT: If it was industrial, it's not highly contaminated waste. If anything, it would be construction and demolition waste—is my understanding. So that's demolishing your house. Some of the materials, some of the timbers—those sorts of things—would go there. It's not waste that comes from industrial activities where there are high concentrations of pollutants. It's low-concentration residual materials that cannot be re-used. Municipal solid waste is your red bin waste. That's what we're talking about. Again, say we're talking about that or construction and demolition, they're the types of waste that we have been assessing in those types of facilities.

Dr AMANDA COHN: My apologies for being late this morning. I've just come across from Bondi Beach. My first question is about air pollution control residues—so things like bottom ash. The WMRR submission states:

Modern EfW facilities also recover recyclable metals from the bottom ash residue to produce an aggregate material suitable for beneficial reuse...

It has been put to us in other submissions that that does happen internationally but that we don't have safe storage or disposal options for those products in Australia. Could you comment on that?

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GAYLE SLOAN: We know that Kwinana is now operating and doing that. That's in WA. That is actually currently happening in Australia. The IBAA is being produced by Blue Phoenix and applied for use in roads in WA. We now are doing that in Australia. In every jurisdiction, in order to do that, you would have to have a regulatory framework. Queensland is currently working, with its end of waste code, to do that. Victoria has also developed its regulatory framework. It is actually occurring in Australia.

Dr AMANDA COHN: You've mentioned Queensland and Victoria. To your knowledge, does New South Wales have the regulatory framework we'd need to manage those?

GAYLE SLOAN: Absolutely, we have it. We just haven't had an application as yet that I'm aware of—Jackie may be aware for incinerated bottom ash.

JACKIE WRIGHT: No.

GAYLE SLOAN: But we have a very robust regulatory framework in New South Wales for resource recovery and what is an exemption. That would be the pathway when these facilities are being developed to put an application through that process as well.

Dr AMANDA COHN: I also wanted to ask about the efficiency of these plants in terms of the so-called renewable energy that they're producing, noting that some of the leading examples in Europe are producing heat directly, rather than producing electricity. Could you talk to some of the differences in that process and how efficient it is to produce electricity, as compared to heat, in Europe?

JACKIE WRIGHT: I can't answer necessarily about the true efficiency. Like all power stations, they generate heat to create steam that drives turbines. Energy-from-waste facilities using technology here would also be producing heat—again, to generate steam to drive turbines. In Europe, they quite often use both the electricity and the heat that's generated for going into other industries. Co-locating energy from waste with other industries allows them to use both the heat and also the electricity that's generated from it. When you don't co-locate them, it's really difficult to use that heat. That is a loss.

Dr AMANDA COHN: Which are the industries in New South Wales at Parkes, Tarago or the other two sites that would use the heat directly?

JACKIE WRIGHT: There are multiple different industries that take heat to generate steam for their own industrial purposes. Making pet food and all sorts of things require steam to sterilise things and so forth. That's just one example. There are many different industries that use steam or have to generate steam as part of their process.

Dr AMANDA COHN: Coming back to the WMRR submission again, there's commentary around the volumes of residual waste and comparisons between Australia and overseas. The comment on the front page is that Australia is out of step globally in terms of obligations or standards for product to be used for re-use, repair and recycling. Do you have any recommendations in terms of what the Committee should be considering to reduce residual waste?

GAYLE SLOAN: We should be absolutely strengthening generator obligations—far more obligation around product stewardship. We did see this year the movement of the product lifecycle Act for batteries, which is a terrific thing. We absolutely need sustainable design regulation. Australia has none, so you can basically place anything on market without any requirement to either look after it or make sure it's safe. We know that the Commonwealth Government is looking at the Review of the Recycling and Waste Reduction Act and potentially some design recommendations that came out of the ministerial inquiry. We need to make generators responsible for the products they make. They need to manage them through lifecycle and end of life.

The Hon. EMILY SUVAAL: You touched on it in your opening remarks, Ms Sloan, but I have a question to you both in terms of our projected statistics in terms of waste per person from the State of the Environment report. Our landfill here is projected to run out in 2030. What would you suggest is the solution?

GAYLE SLOAN: We actually need to pivot policy towards consumption and production. We actually don't have any policy, beyond the recent product lifecycle, that helps people understand that you've got to buy stuff that's recoverable or re-usable. We've got to design it for that purpose. We can't keep blaming the consumer. We also need to have conversations about educating the community about avoiding. It kills me that, in a cost-of-living crisis, we're not talking about how people can actually not throw out food. We need to work with the community and pivot away from consumption and production towards avoiding and re-using. It's a different paradigm.

JACKIE WRIGHT: I would like to add that we need to recover and re-use a lot of materials, but that also means we need to have workable industry that can safely do that. All the materials that we do recover from

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waste will also have various different pollutants in it, because that's just what comes in our materials that we buy. We need to have good measures to make sure that the way we recycle and re-use those are also safe, to make sure that they're properly assessed and that we also understand what those risks are.

The Hon. EMILY SUVAAL: Just a final question, Chair, noting the time: In terms of the construction and demolition waste that I think you touched on earlier, this is obviously largely unrecyclable and often contains asbestos, lead and other hazards. If it can't go to landfill, where should it go?

JACKIE WRIGHT: They're the types of materials that currently do go to landfill. They are going there. They require special treatment. They can also go to energy from waste. Those are appropriate technologies to actually destroy those materials and also capture any residual to make sure it doesn't actually leave those facilities and go into the environment.

The Hon. EMILY SUVAAL: Is it safer for it to go to an energy from waste as opposed to landfill?

JACKIE WRIGHT: In the long term? Yes.

The Hon. PETER PRIMROSE: Can I just have one?

The CHAIR: Okay. Quickly, Mr Primrose.

The Hon. PETER PRIMROSE: Yes, I'll be as quick as I can. Is the realistic option, particularly in Greater Sydney, facing either new landfills or energy-from-waste facilities? Are there any other options.

JACKIE WRIGHT: For end of life? No. Once you've gone past all the recycle, recoverables and all those sorts of things, the residual material, the only options that you're left with are landfills and energy from waste. From a risk perspective and a long-term risk perspective, energy from waste is a much lower risk option.

The CHAIR: Thank you both for your evidence today. You haven't taken any questions on notice. If there is anything further that the secretariat requires, they will be in contact.

(The witnesses withdrew.)

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Mr BRETT LEMIN, Executive Director, Waste Contractors and Recyclers Association of NSW, before the Committee via videoconference, affirmed and examined

Mr STEFAN DITTRICH, National Technical and Major Projects Manager, REMONDIS Australia, before the Committee via videoconference, affirmed and examined

The CHAIR: Welcome, and thank you for making the time to give evidence today. Mr Dittrich, I note that you are appearing via videoconference from Brisbane. Please note that for witnesses appearing from overseas, parliamentary privilege does not apply to the evidence they give and protections for witnesses appearing from interstate are also more limited. I advise you to be careful about the comments you make during your evidence and to avoid making adverse reflections about others.

BRETT LEMIN: The Waste Contractors and Recyclers Association of NSW represents the industry across New South Wales and the ACT.

STEFAN DITTRICH: REMONDIS Australia is a member of the Waste Contractors and Recyclers Association of NSW and has been servicing New South Wales for more than 40 years.

The CHAIR: Thank you both very much. I note that we have a free-flowing opportunity here and encourage members that if you do want to come in at any point, just let me know. To move things along, I'll begin. Mr Lemin, you state in your submission that energy-from-waste policy should be criteria based, not precinct based. Can you expand on that a little bit more, please?

BRETT LEMIN: Very similar to what your previous inquiry members were talking about, we believe that the facilities shouldn't be based on location. They should all be based on their own merit. We believe that the science is safe, the technology is safe and so they should be merit based on a whole range of factors, rather than just within certain precincts.

The Hon. EMILY SUVAAL: Sorry, Chair, can I check whether the witnesses had an opening statement?

The CHAIR: I'm sorry. Thank you, Ms Suvaal. I'm jumping ahead of myself there. I should've asked you both, do you have a short opening statement?

BRETT LEMIN: I do. I will be shorter than the other two. Thank you, Chair, and thank you, members of the Committee, for the opportunity to appear today. My name is Brett Lemin. I'm the executive director of the Waste Contractors and Recyclers Association of NSW, commonly referred to as WCRA. We represent around 200 private sector waste and recycling businesses across New South Wales and the ACT, collectively employing around 18,000 people. They operate approximately 90 per cent of the licensed waste recycling facilities and vehicles across New South Wales. WCRA supports energy from waste as a necessary residual-only component of a modern waste management system, provided it is delivered using best available technology under strong regulatory monitoring.

New South Wales currently generates around 23 million tonnes of waste each year. Even with strong recycling and avoidance efforts, around three to 3½ million tonnes of that material remains residual and cannot be economically or safely recycled. Today, the vast majority of that material is landfilled. This creates three significant challenges for the State. First, New South Wales faces a genuine landfill capacity risk, particularly in the Sydney Basin, with current projections indicating constraints emerging by the end of this decade. Second, landfilling residual waste produces long-term environmental liabilities, including methane emissions, leachate management and legacy contamination risks that persist for decades. Thirdly, without additional treatment options, waste must travel further, increasing transport emissions, cost, road safety risks and community impacts.

Energy from waste, when done properly, addresses all three of these challenges. Internationally, energy-from-waste facilities operate safely in urban and regional settings across Europe and parts of Asia, meeting strict emission limits under the European Union industrial emissions directive and the 2019 waste incineration best available techniques conclusions. These standards are widely regarded as global best practice and WCRA strongly supports their application in New South Wales. It is important to be clear: Modern energy-from-waste facilities bear no resemblance to legacy incinerators of past decades. Contemporary plants operate within tightly controlled engineered environments. With continuous emissions monitoring, multi-stage flue gas treatments and independent regulatory oversight, the international health evidence consistently shows no measurable adverse population-level health impacts from well-regulated best practice facilities.

WCRA's position is not that energy from waste replaces recycling; it does not. Recycling, re-use and avoidance must always come first. Energy from waste deals with what remains and what must be managed safely, whilst also delivering further resource recovery and circular economy outcomes. We also emphasise safety. Residual waste streams contain combustible and reactive materials that pose risks across collection, transport,

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processing and landfill environment. Providing a controlled treatment pathway for residual waste improves system-wide safety and resilience, particularly as waste volumes grow and infrastructure becomes more constrained. Finally, we encourage the Committee to consider how energy-from-waste policy fits within the broader planning, transport and circular economy framework.

WCRA supports a criteria-based approach to assessing energy-from-waste proposals focused on environmental performance, proximity to waste generation, community outcomes and best available technology, rather than reliance on fixed geographical precincts alone. In closing, energy from waste is not a silver bullet, but it is a necessary tool. With the right technology, regulation and governance, it can reduce landfill reliance, improve safety, support emissions reduction and strengthen New South Wales' waste management system for the long term. Thank you, and I welcome the Committee's questions.

The CHAIR: Thanks, Mr Lemin. Mr Dittrich, do you have a short statement that you want to make or are you happy to progress straight to questions?

STEFAN DITTRICH: I'm happy to progress straight to questions.

The CHAIR: I might proffer one to you on that basis. The submission of REMONDIS Australia states that energy from waste is mature, proven technology internationally, but New South Wales is still very much in the development phase, and gaps and issues being dealt with remain and are still being addressed in some of those facilities that currently exist, like guaranteed waste supply, integrated systems, continuous oversight and codified community engagement. If EFW was to be progressed in New South Wales, how does REMONDIS plan to address this?

STEFAN DITTRICH: From a REMONDIS perspective, we want to emphasise that we consider this a proven technology. There are hundreds of similar plants around the world, specifically very modern and tightly controlled ones in the European Union that Brett was pointing to in his statement. So there is a vast pool of knowledge and experience from decades of developing, constructing and operating such plants, including some internal knowledge that we have. It is very important, as you pointed out, that such facilities are supported in terms of economic feasibility because, ultimately, it must be successful and really lead to a diversion from landfill and complement the critical waste infrastructure, so waste supply is a topic for plants. But given the situation that in New South Wales more than 3½ million tonnes of waste is landfilled every year and zero currently diverted to energy-from-waste plants, there's a vast surplus that is unfortunately going to landfill and that hasn't been able to be reduced over the last decades.

The CHAIR: But the international experience—even those that have been relatively successful, like Japan—there are still issues that are being addressed in that regard as well, aren't there? New South Wales is not at the same maturity level as some of these international locations. Is there potential for problems that are as yet unforeseen, given the technology that is being proposed would be new, at scale, for Australia?

STEFAN DITTRICH: The technology won't be new. I mean, if you have no plant, the plants are new, yes. But the technology is the same that is applied overseas, whether that's a plant being built in Singapore, in Tokyo next to the Olympic Village, or in Copenhagen or Amsterdam, the technology is the same. The working principle is the same. The technology is very tightly regulated in those regulations that we strongly encourage to implement and adhere to for New South Wales. The technology is known, the global suppliers of these technologies are known, and the operations, so you're really tapping into an experience pool. It's not a tailor-made, very different solution, not at all. These are standardised, large-scale, fully developed plants.

The CHAIR: If we go to that notion of regulation—which has obviously been raised by the previous witnesses as well—and if that is a primary factor in ensuring that strict regulation is in place, are you also of the view that location should be merit based and not geographically restricted?

STEFAN DITTRICH: It should be merit based around several factors. It should be a factor of appropriateness of the location of infrastructure being available and the needed infrastructure being there. It should be about proximity to waste as well or proximity to where the waste is being produced, since transport costs and the ecological and economic impact of transport is a huge factor, which, at the end of the day, someone has to pay for. So there are a multitude of factors that have to come in. It's also about, obviously, buffers and infrastructure around that. It's about availability of grid connections and availability of water for such operations. So there are technical infrastructure factors that should be assessed for these locations and should be brought into consideration.

Dr AMANDA COHN: I had one quite specific question. Noting that your submission was revised and we were provided with a new version today, there were two paragraphs that were removed. The first one was the recommendation that for New South Wales a precautionary monitoring program should be implemented, including periodic sampling of roof-collected water, soils and sediments within a two- to five-kilometre radius of

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any energy-from-waste facility and independent laboratories accredited under NATA should undertake all testing and data should be publicly reported through an accessible online dashboard. Why was that paragraph removed?

BRETT LEMIN: Basically, for the purpose of the inquiry, we thought it was probably too much detail for this broader conversation. There are options available to appease some of the concerns, but if you were to implement all of them, I think that would be too onerous, too expensive for these facilities.

Dr AMANDA COHN: I have exactly the same question for what was your second paragraph at part (e). It previously read:

Establishing sentinel sampling points; soil, forage, and honey, will provide reassurance for local producers and communities. These monitoring networks can be integrated with existing NSW EPA and Department of Primary Industries air and soil surveillance programs.

Why was that removed?

BRETT LEMIN: Pretty much the same answer. We thought it was too onerous and not really required. When you're looking at all the best available technologies and regulatory reporting with air emissions, et cetera, we think it's too onerous and it's not really required. The previous submission also spoke to it that there is no evidence that shows that there's emissions at any measurable level.

Dr AMANDA COHN: I mean, in a context where the Public Health Association of Australia has recommended that these incinerators not be located in food producing regions, does that not give you further cause to consider these tests, particularly in agricultural regions, necessary?

BRETT LEMIN: No. I think the science from the European studies that I have seen—no, I don't think they're required. I mean, they're available, they're an option, but I don't think they're required, and potentially could be applied on an as-needs basis rather than part of the standard regulation.

The Hon. ROD ROBERTS: Very briefly, Mr Lemin, as executive director of the association, do you represent Cleanaway at all?

BRETT LEMIN: They are a member, yes.

The Hon. ROD ROBERTS: What happened to the Cleanaway proposed project for Eastern Creek back in about—I'm trying to remember now—2019, 2020? What happened to that?

BRETT LEMIN: I honestly couldn't tell you. You'd probably have to direct that question towards Cleanaway. I am not aware of what the decision was. I'm assuming it was commercial, but I cannot tell you.

The Hon. ROD ROBERTS: So there's no energy-from-waste facility at Eastern Creek, then, is there, as proposed?

BRETT LEMIN: Not to my knowledge, no.

The Hon. ROD ROBERTS: One last question, then: You talk about the restrictive site location policies, and perhaps that they could be in urban and peri-urban areas. Obviously, if they're in regional areas, the waste has to be transported to those locations at significant cost. Who pays that cost, at the end of the day?

BRETT LEMIN: At the end of the day, it's the generator or the consumer. If we're talking councils, it becomes part of your council rates. Your payments for your municipal waste comes out of your rates as a resident of a council. If the cost of transport increases, then your rates will increase. But on that, the cost of rail is generally cheaper than the cost of trucking, and it's very subjective. As I'm sure you guys are aware when travelling across Sydney, sometimes you can travel a great distance in a short amount of time and other times it takes you a very long time to travel a very short distance. It's very hard to put a measure on road versus rail, but at the end of the day any cost increase is borne by municipal waste, which would be ratepayers.

The Hon. ROD ROBERTS: That's all I need to know.

The Hon. EMILY SUVAAL: Thank you both for appearing today. Just a question around the standards that any facilities built here in New South Wales would be built to. Is my understanding correct that it would be at international, world best practice or otherwise?

BRETT LEMIN: To my knowledge, that is correct, yes.

The Hon. EMILY SUVAAL: Could you talk to us a bit more about what that involves or what that entails in terms of these facilities?

BRETT LEMIN: That's probably a better question for Stefan.

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STEFAN DITTRICH: I'm happy to take that. Yes, we're advocating for applying international best practice. There is a so-called BREF document developed in the European Union over a few decades, actually—developed and approved. It is the best available technologies reference documents, called BREF. It is a rather large collection. To my knowledge, it's more than 700 pages of regulations around what needs to be measured for what plant in which way, what are specific limits, how it is measured, how it is confirmed and checked, so there's a vast pool of regulation developed that describes exactly how emissions are dealt with for such plants.

The Hon. EMILY SUVAAL: Here in New South Wales, obviously, we've heard a lot about the waste challenges that we are facing, running out of landfill and all of those sorts of scenarios. What would you suggest is the solution to our waste issues here in New South Wales?

BRETT LEMIN: I'm happy to take that one, Stefan, seeing as you're a Queenslander. I said earlier in our statement that there's no one silver bullet. Gayle Sloan spoke to it earlier. There's that regulation on generators and producers of waste and there's that product design piece as well. At the end of the day, we also have residual management. There are multiple links in that chain of what's going to get us to where we need to be. But, effectively, there's always going to be residual waste. Unfortunately, as much as we'd love a purely circular environment to live in, I just don't think it's going to be a reality, at least not for a very long time.

Even a lot of recycling or what we view as recycling is technically what I would call downcycling. It's not always turning something back into its original product or something of the same value. Usually, it does lose value over time to the point where it, effectively, can no longer be recycled. That's where waste to energy is significantly better than landfill, because you're still getting one last use out of that product, whether that's heat or whether that's energy, and that heat and energy can then be used back into the environment, whether it's for commercial reasons like powering homes et cetera.

The Hon. EMILY SUVAAL: Even if we halve the amount of waste that is produced per person, we are still projected to run out of landfill here in New South Wales due to things like the construction and demolition waste that comes from building infrastructure and new housing, which we know we need here in New South Wales as well. Where should that waste go?

BRETT LEMIN: It's merit based as to where the best option is going to be and where it is going to have its best outcome. For example, if we're looking at the two precincts that we're talking about in this inquiry, if they've got other infrastructure around them that can utilise the heat or the energy et cetera, that might be the best place for them to go. Generally speaking, landfill is not the best option because you're creating a long-lasting legacy that goes on for decades, whereas waste to energy is a bit more finite with what happens once it has been utilised that one last time.

The Hon. EMILY SUVAAL: But the reality of the situation we are facing here in New South Wales, as I understand it, is a choice between building another landfill or having these energy-from-waste facilities. Should we build another landfill instead and, if so, where should that go?

BRETT LEMIN: No, I think we shouldn't build any more landfill. I think we should be looking at newer technologies like energy from waste. It's a much better solution to the problem.

The Hon. EMILY SUVAAL: Mr Dittrich, did you have anything from that perspective around the scientific comparisons between the two?

STEFAN DITTRICH: There's a clearly developed waste hierarchy that is known in education material in the industry, where landfill and disposal is the worst outcome. Recovery stands higher in the hierarchy. Energy recovery and waste energy belongs to that recovery portion. It's clearly a better environmental outcome, and also you don't end up creating that legacy issue because, ultimately, as we discussed with the emissions, you can see what the plant is doing and you have continuous emission monitoring. That means you can see live what is happening. That is a great advantage compared to a landfill legacy.

The Hon. EMILY SUVAAL: As a Queenslander, you would know that there are many regional areas that are already trucking their waste interstate to Queensland. In the long term, is that a viable option for us?

STEFAN DITTRICH: I don't think so. Obviously, that is driven by many different factors, from regulation to commercial framework. But, ultimately, the waste is produced by all of us. I think we have to find an appropriate solution and support an appropriate solution for that.

The Hon. PETER PRIMROSE: Ms Suvaal has basically asked the main question I wanted to ask. Just to clarify, after you maximise your recycling and better manufacturing options, short of dumping all of this waste into the ocean, what we're really faced with is a realistic choice between new landfill or energy-from-waste facilities. Is that the case?

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BRETT LEMIN: Yes.

The CHAIR: Would both of you agree that community and social licence in such projects is critical?

BRETT LEMIN: Yes, I would—absolutely. These organisations and these facilities need to work with community. At the end of the day, they're going to be creating jobs and creating infrastructure for said communities. They're going to be integrated into the community. Obviously there is going to be some tension, which is why we're here having this inquiry. Community engagement is integral to the success.

STEFAN DITTRICH: I fully agree. Community engagement is very critical for any such projects. There is often a proposal to use community reference groups to communicate properly with the community. Ultimately, you need to work together with the community to provide them with information and provide them with facts—understand why it's there, what it's done and what are the needs. That is a journey, but very critical to do.

The CHAIR: A final one from me that might best be addressed by you, Mr Lemin. You've suggested, as have our previous witnesses, that given the figures on ever-increasing amounts of waste, even with the aspirations for circular economy, greater recycling and reducing—this inquiry is looking at the two facilities that are being progressed. Now that list has expanded to four. Let's just say that there are four energy-from-waste facilities that move forward in New South Wales. Are they going to be enough to address the ever-growing waste problem given that the capability that was pointed out this morning is approximately around 600,000 tonnes per annum for each?

BRETT LEMIN: They're not going to be able to take 100 per cent of New South Wales waste. But also, not 100 per cent of waste is suitable for incineration as well. You're still going to have some other types of disposal—which is basically landfill—for certain materials, because they can't be burned. I don't have the data or the figures to know what that breakdown would be. Basically, having those four facilities would significantly increase the life span of current landfills as well. That infrastructure cliff of 2030 that we're racing towards will get stretched out longer. As needs required, you could then have more facilities built or expand existing facilities.

The CHAIR: That's the point that I'm getting to—there may yet be the need for more such facilities into the future.

BRETT LEMIN: Yes. Whether that is large-scale ones, similar to the four that are proposed, or whether that's smaller and more localised ones—like you see throughout Tokyo, Singapore et cetera—they've got to be based on their own merits at the time.

The Hon. PETER PRIMROSE: Could I just clarify, based upon your earlier response, if these aren't built or if you do need additional locations, that would involve finding new landfill locations. That's your only other alternative, isn't it?

BRETT LEMIN: Not necessarily landfill. It is either more energy-from-waste facilities or more landfill. The point needs to be made that in terms of environmental impact, environmental emissions and environmental management, even with the best practice landfill of today, they're still going to create more of an environmental legacy problem than an energy-from-waste facility built today.

The CHAIR: Thank you both very much for appearing today and for your evidence. We haven't taken anything on notice. If the secretariat requires anything, they will be in contact with you. Thank you both very much.

(The witnesses withdrew.)

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Ms VERONICA LEE, Executive Director, City Service, City Services Management, City of Sydney, sworn and examined

Ms JOANNA KUBOTA, Executive Director, The Parks, Sydney's Parkland Councils, affirmed and examined

Mr JEREMY MANION, Regional Waste Coordinator, The Parks, Sydney's Parkland Councils, affirmed and examined

The CHAIR: Thank you all for joining us and for making the time to give evidence today. Ms Lee, I'll ask whether you have a short opening submission to make and then also extend that opportunity to each of you.

VERONICA LEE: No, I'm fine. I'm ready to go to questions.

JOANNA KUBOTA: We do have a short statement that Jeremy is going to make.

JEREMY MANION: Firstly, I'd just like to explain that The Parks, Sydney's Parkland Councils, represents a number of councils in western and south-western Sydney. The Parks Waste Alliance represents Campbelltown, Camden, Wollondilly, Penrith and Liverpool councils. From a local government perspective, I think it's worth mentioning—and I think it has already been touched on—the waste crisis that is facing New South Wales, particularly Sydney. The latest projections from the NSW EPA in their Waste and Circular Infrastructure Plan is that, essentially, landfill is going to reach capacity by 2035, and we need alternatives to either increase landfill capacity or look at alternatives such as energy from waste.

I'd also like to touch on an issue with waste resilience in Sydney. Approximately 40 per cent of Sydney's waste is transported through Clyde Transfer Station, which goes to Woodlawn via train. In 2022 Sydney was impacted heavily by flooding, which affected that transport route. Sydney councils and private industry basically had to scramble to find alternatives, which they did for that time. But, should that have gone on for longer, there would have been issues with potentially waste building up in the street. Local government had to find alternatives. Now, credit to the EPA—they're currently working on some planning around disaster resilience, which local government is thankful for. But it does speak to the issue of resilience in planning infrastructure being a key concern for local government.

We'd also like to note that the current governmental approach to waste infrastructure has been flagged for several years. In the NSW Audit Office audit of waste levy and grants for waste infrastructure in 2020, it was flagged as a priority. It was recommended that by December 2021 the Department of Planning, Industry and Environment should determine the State's waste infrastructure needs to inform planning and funding of waste infrastructure in New South Wales. More recently, under the Waste and Circular Infrastructure Plan, there has been further planning for this to establish, for example, lead New South Wales government agencies with strategic planning by early 2026. We're supportive and thankful of the current work which has been done by the EPA and other organisations, but the local government feeling would be that some firm work around infrastructure planning would be appreciated.

From an industry perspective, there is a hesitancy for industry to invest in energy-from-waste facilities and other more novel types of waste facilities. This was basically exacerbated by the two proposed waste facilities, one in Western Sydney and one in Botany, which were scrapped at a planning phase due to the changes in legislation around the locations of permissible energy-from-waste facilities. There's also the issue of municipal waste organics outputs which affected local government and industry back in 2018-19, when the resource recovery exemption for MWO, which is a type of waste, was changed to limit the application of where that could be used. That basically affected private industry investment in waste facilities and also local government, which had contracts of up to nine years that had just been implemented. It was a decision, which was essentially an overnight decision, that affected both private industry and local councils.

We would also like to note that public consultation around energy from waste and those sorts of waste processing types is paramount. We'd like to see more public involvement and public understanding of the technology of energy from waste. The four precincts are not conducive to positive public perception. Because they are in the regions, we feel that it's perceived as only suitable for country areas and not for city areas in particular, and it's more perceived as something that may be dirty. I think there could be a lot of work done around possibly removing those specified regions to increase public support for energy from waste. Lastly, I'd like to touch on the waste hierarchy. Energy from waste is lower in the hierarchy than other priorities such as avoiding, re-using and recycling. We would like to see that no materials that could be re-used or recycled are in the feedstock for energy from waste, should it go ahead.

The CHAIR: Let's go straight to the heart of that. You're suggesting that city councils would be willing to consider or should at least look at the potential opportunity for energy-from-waste facilities.

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JEREMY MANION: I think it's important to note that every council has different policy positions on energy from waste. But we cannot rule out all of the options. We think that further work needs to be done around energy from waste, particularly around the social licence of energy from waste. If the State Government was to lead a campaign and make it more palatable for the public, it is something that absolutely does need to be considered. We have no alternatives other than energy from waste or new landfills or increasing existing landfill capacity.

The CHAIR: Ms Lee, do you have an opinion on that as well?

VERONICA LEE: The City of Sydney's position is in the paper, where we've said that energy from waste should only be considered after all higher order waste hierarchy options have been considered. What's happening around the conversation on waste is it is essential infrastructure. It's not sometimes seen as that. The city may put in place many plans and arrangements to try to reduce the amount of residual waste that the city and its residents produce, but there's always going to be some form of residual waste that will need to be dealt with. I think what would help—and I think my colleagues have touched on it—is a stronger planning framework or decision-making framework that can provide certainty to the community and to industry about the way forward. That would balance all the social, economic, community and environmental impacts of whatever treatment is required to deal with residual waste.

The CHAIR: I want to come back to some of the other options. Before I do, on that point, Mr Manion, you talk about 40 per cent of Sydney's waste being transported and the funding—councils are already under a lot of financial duress. Clearly that further cost impact to Sydney councils, if waste has to travel hundreds of kilometres away, is another element in all of this.

JOANNA KUBOTA: Absolutely. Can I actually answer that? I think that this is a critical point, and it's good to see it recognised. Local governments are under incredible financial strain at the moment, as you would understand. Their income source is largely rates and that is highly restricted from any increases. Let's be honest. At the moment, with the cost-of-living crisis, even if we were legislated to ask for further rate increases, the reality is that people out there are suffering and the community is not going to be happy with that. It does put us in a really difficult position.

At the same time, we are the only body legislated to handle waste, to take care of the waste, so we do have a responsibility. One of the core functions of local government is to manage waste. That puts us in a tricky position, which is why, I guess, we are here today to talk about the issues at hand. Also, if you look at sustainability goals, the idea that the further things travel the more costs are involved, then that's never a positive. So, apart from the fact that we have had those issues where those transport routes have been cut off in the past, that is a focus for us. As we all know, climate change is creating increasing numbers of events that are causing issues for New South Wales. Again, this is something we need to start to really pay attention to, with the number of floods we've been having et cetera.

I think all of those factors come into play, but, at the same time, we haven't really had that much more of an increase in the money that's been coming in to handle waste. Increasingly, as the globe starts to tackle climate change, there is more and more legislation or regulation around, for example, the impact of the FOGO mandate, which I'm sure you're all aware of—the requirement for us to remove food organics from the waste stream. It is absolutely admirable, absolutely desirable and worthwhile pursuing, however, there are costs involved and those costs have largely, and will largely, fall on local government. All of those factors are at play together, and that's why we have been working very closely with the EPA. We have got a Greater Sydney Waste Leadership Forum; that's been going for some time. We have been trying to tackle these issues, because we are facing a waste crisis. We are going to run out of landfill. These are all facts that we have to deal with. We need to find solutions that take all of those factors into consideration.

Can I just add one point to the previous conversation, too? We're not here today, and I don't think any of us are here today, to say that our communities will welcome energy from waste with open arms. There are a lot of concerns within Australian communities about the environmental impact, the smell, the potential pollution et cetera. But the reality is that they are run within very close proximity to major populations across the world—in Europe, in Japan, in America—and those communities have come to terms and live quite happily. I also personally think that Australians are incredibly innovative, and I believe that if we embrace this way forward, we could potentially come up with even better ways of doing energy from waste than other countries have done. What we're trying to say is not necessarily that it's the solution, but that it is a solution that should be investigated.

The CHAIR: Coming off that, the Parkland Councils' submission notes smaller technologies like pyrolysis and gasification. How do you see those fitting into the broader New South Wales waste strategy—in addition to, or complementing, EFW?

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JEREMY MANION: I think it's important to say the waste streams, as I understand it—noting I'm not an expert in that field—are different for pyrolysis and gasification to general energy from waste that you're looking at at Parkes and Tarago, so they cannot take the role of those larger facilities. But it's generally as part of a wider push to improve environmental outcomes from waste that they need to be considered, as part of a larger sort of waste solution. I'll leave it there.

The CHAIR: Ms Kubota, do you have anything to add to that?

JOANNA KUBOTA: No, I just think that they are innovative technologies. To answer your question, I wouldn't see them replacing those larger facilities but potentially being run in addition to or perhaps having smaller scale—I mean, certainly that's what happens in Japan, for example; there's something like 1,100 different facilities across the country, and some are small, some are large, some are focused more on, for example, biogas or creating biochar. I think, as Jeremy says, there are many different approaches to the same problem. I think it might have been Brett who answered the question. It would depend on the merits of the situation, the area, looking at what are the main base streams within a particular area, and then potentially creating a site that's specific to what's being output in that area. That would make more sense.

The CHAIR: Ms Lee?

VERONICA LEE: I have nothing further to add.

Dr AMANDA COHN: Obviously local government plays an enormous role in waste management. I'm interested in what your top recommendations are for action from the State Government that would support us to reduce residual waste or improve source separation, or both.

VERONICA LEE: I can start there. I think the New South Wales Government has, for some time now, talked about its infrastructure plan. It seems to be getting to the pointy end now, where much of the residual treatment facilities we're talking about are 10 years in development. If you're talking about 10 years for any extension to existing landfill, the time for those decisions is now. I think that needs to be the focus. I think local government does spend a lot of time and attention on engaging its community on the types of waste. The City of Sydney offers 20 different waste recycling services, and we're extending them all of the time, but there's only so much we can do. As I said before, when you know there's going to be a form of residual waste, that needs to be the primary focus of the New South Wales Government—to resolve that issue and how they can deal with residual waste. That would be my position.

JEREMY MANION: We're very supportive of the work that the EPA is doing under the Waste and Sustainable Materials Strategy. I think that fully funding programs under that scheme could be beneficial. I'd like to point out that the current waste levy, at \$124.70 a tonne, as of 2019 was generating approximately \$750 million for the Government. As detailed in the New South Wales Audit Office report for the audit of waste levy and grants for waste infrastructure, approximately one-third of that went back into waste and environmental programs. What I would like to see is more funding going back into waste infrastructure and waste planning to allow the New South Wales Government to make those informed decisions.

It is difficult for local government, from our perspective. We deal with very specific waste streams and relatively large contracts for local government. But in the scheme of wider New South Wales, it is difficult for local governments to make that huge impact which needs to have that State Government oversight. As a suggestion, diverting the majority of those funds, if not all of those funds, back to waste would go a long way to solving the waste crisis.

Dr AMANDA COHN: If I could just come back to the City of Sydney, I think you mentioned 20 different initiatives in your LGA. I understand you're a relative leader in this space, which is why you're here as a witness today. Could you speak to some of those initiatives, particularly things happening in the City of Sydney that might not be happening in other LGAs or other parts of the State? I'm interested in what else the State Government could do to support that kind of program in areas that don't have it.

VERONICA LEE: There are two levels, for me. One is about engaging the community on the types of waste that they're producing, and obviously starting with, "Don't buy the waste in the first place," and that goes down to product stewardship. But then, once we have waste that we do need to recycle, for things like batteries and all of those tricky things that people don't know what to do with, they get unsure and they throw it in the red bin. It's all of those small, tricky things that we have at our community recycling centre pick-up day. We don't actually have a community recycling centre. I think that's essential infrastructure also for the future, so that it makes it easy for people to do that. We set up an Ultimo pop-up so people can walk up with their tricky waste. That's at our Bay Street Depot at Ultimo.

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What we've also done recently is a very simple initiative, and it's about the re-use thing. At our community recycling days, we're taking small pieces of good furniture. We're saying to people, "Bring this good furniture along," and then we're donating it to the Salvation Army or any of the charities that can then onsell that furniture. It's small, but we feel like if you start small then you start to train people on how to think about their waste and to pause before they throw it out. I deal with a lot of waste issues in the City of Sydney. We say that behavioural change takes time. It's about everybody getting on the same page and trying to present the same behaviours, because people move.

The City of Sydney has a very transient population, as you know. People are in and out of the city all the time, both in terms of visitors every day and even our own residents who move out. We have a lot of renters. We're constantly retraining people on how to manage their waste, all the time, because they're not people who have lived there for 20 or 30 years. I feel that is definitely a strong role for local government. There are opportunities to redirect some funding from State governments to enhance those programs. I think that's what my colleagues were saying around how the waste levy is used.

JOANNA KUBOTA: Can I add a comment there? The other thing that I think is quite important is that up until now, largely, waste has been left to the EPA. The EPA has had more of a regulatory role until now. As we've moved, over time, to more of a circular economy focus and increased the number of projects and programs around waste, there hasn't been quite the shift within the State government governance structure to understand who is responsible for managing it. It has basically fallen on the EPA, which has then had to shift to change the way they approach things and have staff that can help to deal with those issues. We have a housing crisis in New South Wales. Everyone knows this. We are working very hard on resolving that crisis. But there hasn't really been a focus on waste within that.

The mid-rise pattern books came out recently and we hadn't been consulted on them. We said, "What about the collection of waste and the ability of garbage trucks to come in and leave those places?" They're the kinds of things that exercise our brains, going, "How are we going to manage this?" It doesn't necessarily seem to be going through. There needs to be much more of a whole-of-government approach to waste. You mentioned that it's an essential service. It's not just that level anymore; it does involve Planning and other parts of the State Government. That's starting to be recognised slightly, but when we're talking about housing and resolving those issues, you've got to remember there's a waste component to that. For all of those things, if we could have more of a whole-of-government approach, it would be much more effective.

The Hon. ROD ROBERTS: Thank you all for your attendance today. I might go to The Parks to start with. Ms Kubota, you said—and I don't want to put words in your mouth; this is a generalisation—that there are negative perceptions around waste-from-energy facilities around smell, possible pollution et cetera. Would any of the councils that you represent, as their body and their organisation, consider hosting an energy-from-waste facility in their council?

JOANNA KUBOTA: Yes, they would.

The Hon. ROD ROBERTS: How do we know that? Have they written a proposal?

JOANNA KUBOTA: No. There have been discussions around it.

The Hon. ROD ROBERTS: But there's nothing concrete? Nobody has put their hand up and said, "We'll take one of these"?

JOANNA KUBOTA: There has been. I don't want to put that council under the spotlight right now.

The Hon. ROD ROBERTS: But you are representing those councils.

JOANNA KUBOTA: I am representing those councils. Yes, there has been a council that has done some research into it and is interested in pursuing that but, at the moment, it is not allowed under legislation. They are nevertheless interested.

The Hon. ROD ROBERTS: Back in 2019 or 2020—I can't remember exactly when—Cleanaway proposed an energy-from-waste facility at Eastern Creek. I know that they are not councils that are part of your membership body, but Blacktown council opposed it and Fairfield council opposed it. Did any of the councils that you represent—particularly, say, Liverpool and Penrith, which are adjoining—put any submissions in for or against the proposition back then?

JOANNA KUBOTA: To be honest, I wasn't in this job at that time. I couldn't categorically say. I'm happy to take that on notice and let you know.

The Hon. ROD ROBERTS: If you can, please, and let us know what—

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JOANNA KUBOTA: I don't believe that they did, but I can't categorically tell you that they didn't. I will take that on notice.

The Hon. ROD ROBERTS: As I say, a number of councils did put submissions in. I'm just interested whether any of your member bodies did.

JOANNA KUBOTA: I can find that out and come back to you subsequently.

The Hon. ROD ROBERTS: Ms Lee, page 3 of your submission states that the city queries the New South Wales Government's approach to limit the geographical application of energy from waste. I am with you; I query the same proposition. Bearing that in mind, and given that location is a sticking point—and considering the significant costs of transporting waste from where it occurs to possibly hundreds and hundreds of kilometres away in the regions—would the City of Sydney support having an energy-from-waste facility in its boundaries?

VERONICA LEE: I think the position on that is that the New South Wales Government is determining the criteria for the location of the facilities, and unless that criteria changes, it's not something the City of Sydney has turned its mind to.

The Hon. ROD ROBERTS: You can't say categorically yes or no, then?

VERONICA LEE: No.

The Hon. EMILY SUVAAL: Thank you all for appearing today. In terms of our projected waste per person, the latest State of the Environment report showed that that is obviously increasing year on year. Our landfill's also projected to run out by 2030. What would you suggest is the solution?

VERONICA LEE: Referencing the city's submission again, I think we just come back to that obviously there's been discussion today around the two obvious answers to managing residual waste. In terms of that, I strongly propose that there needs to be an appropriate planning framework that sits around those decisions, and you make that based on the outcome of those cost-benefit analyses that you do, and you consider the social impacts, community impacts, environmental impacts, economic impacts and financial impacts. I think the city's concern is that that framework needs to be established so that those decisions and work can be undertaken by industry with certainty, because at the moment, they don't have that degree of certainty around the way forward, and I think that needs to be resolved. Obviously, whether it be landfill or another type of solution, you can compare them if you have a framework to compare them through. I keep harping on that point, don't I, but that's how I feel.

JOANNA KUBOTA: I think it's multi-level. I think there's so many different ways we can approach the problem. Fundamentally, we need to change people's behaviour. I think over time that will happen. For example, slowly but surely we'll understand that fast fashion is not a good thing because we end up with massive amounts of textiles that we then have to do something with. There needs to be a sort of a—hopefully there will be a shift in community. That's not just our job. It's not State Government's job. It's probably everybody's job, including the Federal Government. But that's really long-term. That's not going to happen tomorrow. It's not going to happen in the next five or 10 years. I think then we also need to be looking at things like product stewardship. Those sorts of schemes need to be implemented.

We also need to look at really innovative recycling technologies, constantly looking for ways that we can re-use materials so that we're not—and things like fixing electronics, rather than throwing them away. That's, again, twofold—you've got a customer behavioural aspect to that and then an "actually, can you fix it or not" aspect to that—but I think all of those things together and then also looking at the reality, as you say, we'll still have residual waste. What do we do with that? That needs to be done. We're just asking that we do put all the options on the table and see which ones have the most merit, rather than sort of arbitrarily, it seems at times, make decisions.

JEREMY MANION: Just on those points, I think there's some really interesting work which is being done around trying to legislate that technology can be repaired, things like that. Mandated product stewardship schemes can be successful. There's many, many failed voluntary product stewardship schemes. I think if we were to look at mandating certain product stewardship schemes, it could be a way to bring down waste and also continue the work of WASM in mandating packaging and so forth.

The Hon. EMILY SUVAAL: You mentioned, Ms Kubota, the behavioural aspects to waste. It's fair to say as well that even if we were to halve the amount of waste produced per person, based on our current projections, we're still going to run out of landfill in 2030.

JOANNA KUBOTA: Absolutely.

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The Hon. EMILY SUVAAL: Although that is obviously a component, as you say, there are many aspects that need to be looked at. In particular, the construction and demolition waste that we know is coming from building infrastructure and new housing—where should that waste go?

JOANNA KUBOTA: I think there are increasingly innovative recycling technologies where you can take some construction waste and, for example, put it into road base. You can take some construction waste and turn it into table tops and bathroom tiles and things like that. Obviously all of those things are also happening. Particularly, you can take glass that comes out of construction waste and use it in many ways, so we obviously need to focus on that as well. I think, again, it's not easy. I'm not suggesting for a second it's easy, but I do think that we really should pay attention to the waste hierarchy and have landfill as an absolute last option. We're looking for other ways to create and re-use and recycle those materials so that we're not simply dumping them in landfill. As one of the previous presenters said, we're just creating a problem for future generations then.

The Hon. EMILY SUVAAL: Correct. My next question goes to some of that more problematic—because you mentioned, obviously some of it may be able to be recycled. But things like asbestos, which we know is still in abundance here in New South Wales, and lead—these more problematic construction and demolition waste by-products—can't. If that can't go to landfill, where should it go?

JOANNA KUBOTA: I don't think I have the expertise to answer that question. Do you, Jeremy?

JEREMY MANION: My understanding is they are going to landfill. It's hazardous landfill so it's treated slightly differently. I think that there is always going to be a need for landfill. We're never going to be able to remove that. There are going to be filters and scrubbers and things from, if they are to be successful, energy-from-waste facilities that will need to be treated as hazardous waste. We need to have a broad-based infrastructure and resilient waste infrastructure to deal with those.

The Hon. EMILY SUVAAL: In terms of the construction waste you spoke about, Ms Kubota, are you able to give us some examples on where that may be currently used, where it's being recycled and what the end market is for that sort of product?

JOANNA KUBOTA: I believe that concrete from the construction waste is being recycled in various different ways. I'm not quite sure how. I think some of it can actually end up back in construction again, but I believe that some of it's used in road base and other things like that. It's the same thing with glass and the same thing with tyres, although that's not construction waste necessarily. I also understand that there have been other ways to use construction waste to recycle into other materials, such as it can become a Caesarstone-type material. That's the extent of my understanding. Do you have any other suggestions?

VERONICA LEE: I'm not an expert in construction.

The Hon. EMILY SUVAAL: Okay. What I'm trying to understand is what is the current market for that. Is that a solution that we should be looking at?

JOANNA KUBOTA: I think it is a partial solution at present. I think it could potentially become more of a solution, should we pour more resources into it. Again, I think it's one of these things that if we—in general, as an international community, I think we are more and more moving to that circular economy approach, where we're starting to say, "Okay." Unfortunately, in the past, we have been quite lazy. Because we've had such a wealth of materials, we haven't needed to recycle and we haven't needed to worry about environmental impact. Then as that reality has started to hit home across the world, people have started to get very innovative in how they can recycle these materials and re-use them in other things. I believe that the potential is there to keep doing that, and to come up with more solutions.

The Hon. EMILY SUVAAL: I want to go back to something that you might've mentioned, Mr Manion—and, apologies, it might've been also you, Ms Kubota. I think you were talking about communities and their reaction to energy-from-waste facilities and whether or not they welcome them with open arms—I think was the example. Based on some of the other evidence we heard this morning, and certainly looking through some of the submissions, it seems that we have these two options, landfill or energy from waste, in terms of dealing with what we know—basically, that we're going to run out of landfill in 2030. Should we build another landfill instead as opposed to an energy-from-waste facility? If so, where should we build it?

JOANNA KUBOTA: I think it's probably inevitable that we're going to have to build. Whether we build another landfill or—my understanding is we can potentially extend the one we have. That will provide a few more years worth of viability. But, as we've discussed, there will always be landfill sites required, so we will probably inevitably need another landfill site. But our issue is that it takes—doesn't it?—10 years to set up a new landfill site, and we're going to run out by 2030. Well, we're 2025, so we've kind of left that horse a little late. That's why

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we are very concerned. And we see, potentially, energy from waste as being a solution that would work and go hand in hand with landfill, as we've all discussed.

None of us, I think, have a vision of the future where we think we won't have any residual waste at all and we won't need landfills anymore. That's just not realistic. However, we can substantially—and we are making steps towards that, obviously, with the implementation of FOGO and removing food organics from the red bins. That's a step in the right direction that has, or will, decrease the amount of landfill. The more we can take tricky items like textiles, batteries, electronics et cetera out of the waste stream—again, that's going to help as well. I think at the end of the day we will need a landfill but, hopefully, if we can remove enough from those streams, the amount of landfill we need will be significantly smaller than what it is today. That will allow us to maintain a much smaller site and hopefully one that's—even the existing one might last that bit longer.

The Hon. EMILY SUVAAL: You mentioned, I think, in your opening remarks scenario, the impact in 2022 and some of the challenges that we're facing around waste resilience. In the scenario where no-one's red bins can be collected because there is quite literally nowhere for that waste to go, what should the State Government do?

JOANNA KUBOTA: That's a tricky one. There is actually a disaster resilience group that we've got together, in which all ROCs participate. Brett actually chairs that. So we have talked about that. The idea is that we identify, before such events take place, where, for example, maybe a car park could be used or an appropriate site could be used that could take waste. I mean, obviously, there are issues around sanitation and hygiene, so we'd need to make sure that it's an area that we could keep fairly tight and not allow any sort of surrounding contamination of the surrounding environment. But we are looking at doing that and looking at how potentially we could say, "Okay, because the Hawkesbury River has come up and they now can't remove their waste, where could a temporary storage site be established?" We are doing some work in that space because we do understand that this has been an issue. But those are all on the basis that this is a week, two weeks—not a long period of time.

The Hon. EMILY SUVAAL: Just to clarify, when you say ROCs, you mean the regional organisations of councils?

JOANNA KUBOTA: Yes. Within the Greater Sydney Waste Leadership Forum, we have NSROC, which is Northern Sydney ROC; SSROC, South Sydney ROC; WSROC, which is Western Sydney ROC; and then ourselves. Also Resilient Sydney participates to represent those councils that do not belong to one of the regional organisations of councils.

The Hon. PETER PRIMROSE: I think you've asked most of the questions. Just to go back to one of your earlier statements, in relation to your member councils in The Parks, but also City of Sydney, have there been any representations from the council to the State Government to actually establish an energy-from-waste facility?

JOANNA KUBOTA: Not to my knowledge to date, but that's because it's legislated that it cannot be within the Sydney Basin.

The Hon. PETER PRIMROSE: Having been involved with local government for a long time, they make representations in relation to everything from international relations. But I don't think that has ever stopped councils from making representations. Can I ask you to take on notice whether any of your member councils—and I'll also go through, myself, LGNSW and others—have made any representations in relation to establishing such a facility?

JOANNA KUBOTA: Sure.

The CHAIR: To wrap up our last few minutes, the suggestion about the need for options and alternatives—even complementary, rather than taking the place, necessarily, of one thing over another—has been highlighted and continues to be highlighted because we are going to need to do more, not less, to deal with the ever-increasing rates of waste that we're generating. The truth of the matter is that energy from waste also won't be an overnight solution either. So when we're talking about landfill—as you just pointed out, Ms Kubota, 10 years—well, energy-from-waste facilities will also take time in order to build and have up and operating, et cetera. Residual waste as well—I think you've also pointed out, Ms Kubota, that we are very clever and we are very innovative. The things that we're doing right now to deal with the problem won't necessarily be what we'll be doing in 10 years time, because we'll continue to progress in that regard. Essentially, you've all stated that we need to keep an open mind and be willing to review all options and alternatives and what might present themselves in the future. Is that what I'm hearing from each of you?

JOANNA KUBOTA: Yes.

VERONICA LEE: Yes.

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The CHAIR: When it comes to discussions around the potential for hosting such facilities—whether it's EFW, whether it's pyrolysis gasification, those types of smaller technologies that are currently in place in some areas as well—ultimately, the community buy-in is critical, and that is something that each of you is also saying is lacking right now and needs to be dramatically improved.

VERONICA LEE: If I could just comment on that point, I feel like the Government—and we all know about the housing crisis—has developed a conversation with the community. That's what it's done. It says, in areas that are getting rezoned or up-zoned, there are some people that don't like that, but they've made a case for it and they continue to prosecute that case as a bipartisan prosecution of that case. I feel like if waste is such an essential part of our infrastructure then that case also needs to be prosecuted in some way. I feel that a lot of the community doesn't really understand where their waste goes and how it gets used. It's like, "Oh, thank goodness, they've picked up the red bin today," and they bring it back inside the gate and it's over for another week. I feel that that's the deeper conversation around how important this is to the future.

The CHAIR: And dare I say, Ms Lee, just to interrupt there, more so in the city than in the regions when it comes to where these things go and what happens to them.

VERONICA LEE: Absolutely. Also, too, because we talk about all of the strategies to reduce residual waste, which is great, and obviously the city's going down the path of the FO solution for its food organics, as we go forward to implement that requirement. But the population is increasing, so the gains we're going to make a little bit with the improvements in getting things out of the residual bin will be offset a little bit by the fact that we're asking more people to come and live here and producing more waste again. It's certainly something that we can't walk away from.

JOANNA KUBOTA: I would just say that I think that the community just doesn't really understand. It's such a new technology and there's a lot of fear out there. If we help them to understand, and we certainly were able to show that it's used in other countries—I'm talking specifically about energy from waste—if we prosecute and educate that message, then I think we can get the communities onside. I think it's more just that fear of the unknown, at this stage.

JEREMY MANION: I'd just like to point to CopenHill. They put a snowless ski slope on the energy-from-waste facility in CopenHill, Copenhagen. That's a good example of bringing the community in, taking them along on the journey for energy from waste, which is something that the Government could potentially look at.

The CHAIR: If there isn't anything further from any of the Committee members, thank you for your time today and your evidence. I think we've taken a few questions on notice, so the secretariat will be in contact with you in relation to that.

(The witnesses withdrew.)

(Short adjournment)

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Mr XAVIER MARTIN, President, NSW Farmers Association, sworn and examined

Ms RHIANNON HEATH, Environmental Policy Advisor, NSW Farmers Association, affirmed and examined

The CHAIR: Welcome. Thank you for joining us and making the time to give evidence. I'm going to shock everyone by asking you if you would like to make a short opening statement. Either or both of you are welcome to do so.

XAVIER MARTIN: There's one thing NSW Farmers does: Its core business is to do opening statements. We also not only say what we're going to do but we do what we say. We're here with that view. Thank you for the opportunity to present to your inquiry. At the outset, I'd like to summarise some key points out of the Government's own art on this matter. Although the authors remain anonymous, there's obviously a reasonable amount of information around the proposal. In summary, the Government proposal acknowledges there is no safe threshold for some pollutants. It also goes on that food land—agricultural land—is not an acceptable testing ground for unproven assumptions. The international evidence is clear that even sophisticated, modern facilities experience emission spikes and contamination events. Once contamination reaches our air, our soil, our water, it then ends up in our food and fibre. The damage is long term and often unmanageable and irreversible. Sydney citizens' waste should not become regional citizens' problem and unmanageable risk.

With that summation, I want to speak to the proposals that are before us. In our submission, NSW Farmers identifies a core concern that I've outlined in some parts of these cornerstones. It is the fact that very small amounts of pollutants from energy-from-waste facilities can affect human health. Yet the Government's plans to place these facilities within some of the State's most productive agricultural regions is manifest and seriously problematic. For communities whose livelihoods depend on clean soil, clean air and clean water, the lack of demonstrated safety of energy-from-waste developments is a serious critical issue.

The Government's Energy from Waste Infrastructure Plan states that there is a need to avoid exposing high population centres in New South Wales to new sources of air emissions. It further notes that populations can still experience health impacts when emissions are below national standards and that, for some common air pollutants, there is no safe threshold of impact. This language reinforces that compliance does not guarantee safety, and that even low-level emissions can have serious and sometimes cumulative and irreversible consequences for the surrounding environment and the peoples within it.

Research from multiple countries has shown that pollutants such as dioxins, PFAS—that wonderful word that just about captures everything, from cosmetics to food packaging to tyres; everything seems to be related to PFAS nowadays—and heavy metals can accumulate in soil, pasture and water around these facilities. Studies across Europe and Asia have documented these contaminants settling on farmland and entering into food systems. In some cases, such as the Irish pork dioxin incident, contamination at microscopic levels is enough to disrupt national food chains and trigger major export recalls.

Chair, your Committee should be aware that a whole lot of our counterparties around the planet can now test for where a molecule shouldn't be. Laboratories are just extraordinary. The ability to tell whether a molecule should be there or not in any mass and at any concentration has grown exponentially. They know if something comes from our landscape and it contains something that should not be there. In agriculture, even trace levels of pollution can persist for decades and contaminate the food that feeds not just this State and this nation but also many on the planet. The concerns of regional communities are amplified by the fact that the proposed facilities would process large volumes of Sydney's municipal, commercial and industrial waste, requiring thousands of truck movements into regional New South Wales. This would increase transport-related emissions and compound the overall burden placed on these hosting communities.

Just while I'm referring to that, I heard the previous session touch on emissions for transport. Obviously, Parkes is on the Inland Rail line, so the concept of it just being for New South Wales—my members know that is nonsense. We're going to see Melbourne's waste brought up. We're going to see Brisbane's waste. While we are sitting here, there is thousands of tonnes a week of Brisbane city waste getting dumped in the hole just west of Tamworth. Most of the citizens of Sydney have no idea that this goes on every day of the week, day and night. This is the sort of nonsense that needs to have the light shone on it.

Also, the proponents, in showing you all wonderful diagrams—I note the Australian versions delete any reference to the primary fuel. Surprise, surprise! This waste does not self-combust to the appropriate temperatures. It does not run at 850 to 1,100 degrees Celsius by itself. It has to have a primary fuel that ignites and maintains. They're not telling you how many megalitres of diesel or gas or how many thousands of tonnes of coal they're going to use, month on month, to maintain those furnaces. The Australian diagrams conveniently leave out that

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primary ignition input, and you've got to ask yourself why. What is it about the proponents in this nation that they're not prepared to admit what it takes to do this sort of operation?

These proposals sit within a wider pattern of cumulative pressures from the renewable energy infrastructure that my members are suffering from at the moment—the scalping of mountains and forests and the carpeting of food lands with aluminium, glass and a whole lot of other concentrates. We're seeing transmission lines; mining activity, whether it's for critical minerals or not; and other industrial development rolled out over the most productive lands of this State. Chair, it would be important, given you are considering a dirty proposal here, that you think about just how big our island is and how little of it is good food land—basically about two per cent or three per cent—and yet you want to site stuff like this along with these so-called "renewables".

Turning food lands into industrial waste facilities is what this proposal is. It's just another layer of impact that my members are suffering from—whether it's at Tarago or Parkes today or who knows what else down the track—that has not been comprehensively assessed or had any level of common sense applied to it. It's just theories—a whole lot of unproven theories. The question is not whether the technology can work in ideal conditions and limit, manage and reverse the toxicology, but whether it can operate safely and consistently in the real environments where your food and fibre comes from. Community life depends on clean air, soil and water.

For these reasons, NSW Farmers Association believes regional communities deserve independently verified evidence that the risk to soil, water, livestock and human health are zero before any energy-from-waste facility is approved. This inquiry plays an essential role in ensuring that recognition of these risks is reflected in commonsense decision-making and that an evidence-based approach guides the plan to utilise energy-from-waste technology in New South Wales.

Chair, in finishing my opening comments, I note from your previous presentation that there are expectations from those councils and from those LGAs representing the citizens and ratepayers within this basin that their behaviour will be modified. Well, their behaviour won't be modified if the problem is just sent over the ranges. Their behaviour will only be modified if the energy-from-waste plant is at Ultimo, beside the recycling centre, or at North Head or somewhere where it's quite obvious that doing the right thing with your waste results in less utilisation of those facilities. Otherwise, it's just out of sight, out of mind. Chair, I'm happy to go through some of the issues that run out of the performance of the technology in rural conditions.

The CHAIR: We might turn to some questions to get to those sorts of matters a little bit more closely, Mr Martin. That'd be great.

XAVIER MARTIN: Thank you for those opening remarks.

The CHAIR: Ms Heath, do you have anything further to add?

RHIANNON HEATH: No, I don't have anything further to add.

The CHAIR: Let's get to some questions, then, so we can unearth that and look at it a little bit more deeply. In regard to your points that low risk is not no risk, how easily does low-level uncertainty affect market confidence when it comes to what we produce, what we grow and our water quality, including perceived as well as actual risk?

XAVIER MARTIN: The most damaging one, straight up, for my members is that market risk. You can think you've got a balance sheet that's working one day—a small business, and it's working—and then the next day your reputation is in tatters because a molecule is found where it shouldn't be found by a laboratory somewhere. Sometimes it's not even whether it's food safety; it's just that it shouldn't be there. Any of these proposals to deal with food packaging, burnt tyres or whatever they want to do, to the extent that any of that pollutant finishes up where it ought not to be, it's a problem for the continuing business of my members. It's a serious problem that just puts them straight out of business. It's not "maybe in a few years time". It undermines confidence. It undermines confidence in their lenders and it undermines confidence in the community. You can forget about succession planning. Imagine if you're a family from Tarago or Parkes this Christmas, sitting down and wanting to talk to your next generation about succession planning. It's going to be "Sorry, Mum or Dad, we're not going to be buying you out or trying to work out how." They just won't touch it.

The CHAIR: Coming to that, when you're referencing the potential for impacts on agricultural land particularly, for the NSW Farmers, it's not necessarily just the immediate concerns and issues that have been raised and are raised, both internationally and in Australia, where some of these facilities already exist. You're looking also much further than that. It's the cumulative and the long-term potential impacts that you feel aren't or haven't been addressed in the information that's being brought forward. To a degree, we're being asked to undergo a bit of an experiment.

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XAVIER MARTIN: When I read the Government's proposal—again, as I said, the author is not known. That's not surprising when you read it, because it's really a whole document of "near enough is good enough, and let's hope it works out all right overnight" type of stuff. I mean, it beggars belief, except it's real. It's a serious problem for my members to contemplate when everything they do, day in, day out, is very seriously guided by good science, by regulation and by legislation out of this House. They look to this House to come up with good decisions, not "near enough is good enough" type of decisions. I hope that answers your question.

The CHAIR: Finally from me, before I turn to my colleagues, does NSW Farmers have an idea about realistic alternatives? Obviously, you would acknowledge that there is a growing waste problem. While that is predominantly in Sydney and what we're talking about now, we also have to address it in our regional areas as well. What type of alternatives do you think we should be looking at in addressing that for our regional areas? Would landfill be another consideration for us that would be a preference to energy-from-waste facilities? Or do you feel that it's a matter of Sydney addressing the waste and burden that they're creating, and doing so in their own backyards?

XAVIER MARTIN: I think my members are quite clear that—just like the members of this House, your forebears, they made certain decisions that it wasn't the right thing to burn waste. It was the right thing to bury waste. There's a whole lot of reasons why. The organic breakdown of material in the soil, for a start, it's concentrated in that area and it doesn't distribute through the air far and wide with the prevailing winds, which is what this sort of proposal envisages—it'll just all blow around the district and round those areas of New South Wales. The reality is that this State's been digging holes for 200 years, since the first rush in the 1820s. We're still excavating 250 million tonnes a year of various parts of the Earth's crust in this State. That's an awfully big amount of holes. This concept that we're running out of landfill is just theoretical nonsense. The practicality of it is we're a Swiss cheese of a State. There are holes all over the place.

I agree that not all of them would be suitable, because they've been torn through aquifers and all sorts of things that ought not to be happening, and don't get me started on that. I could give you a shopping list of the different types of excavations that are going on. We might go straight to coal as a biggie, but there's any number of other excavations adding up to tens of millions of tonnes a year on top of coal. The reality is that the common sense your forebears delivered in terms of landfill still has considerable merit, and it's certainly nothing like a 2030 hard stop. To your final point around "If it's good enough for the goose, it's good enough for the gander"—it should be here, in town. Why burn megalitres of diesel, wear out a whole lot of tyres and roads that are already smashed carting Sydney's waste way out over the horizon just so everybody in Sydney can avoid being conscious about it. That's basically what's been proposed.

Dr AMANDA COHN: Thanks so much for coming today. I want to ask a question specifically relating to your written submission. You made reference to the issue of accreditation for producers, particularly in the Parkes region. Could you explain that in more detail?

RHIANNON HEATH: It actually goes back to your previous question about perceived risks, I think, in Meat and Livestock Australia livestock accreditation, which enables you to sell your meat to the domestic and international markets. Currently, international standards demand that farmers disclose whether their livestock are raised under transmission lines or under solar panels—and, who knows now, raising livestock in proximity to an energy-from-waste facility, where there are real risks. I think that shows that the perceived risks are at the farm level, but they're also at the international and domestic consumer level. So farmers are facing conflicting standards. They are being expected put a lot of emphasis on their sustainability and their environmental standards. At the same time, Sydney's waste is planning to be carted out into regional areas, increasing emissions through transport. So, yes, this is a risk to livestock accreditation. It's a real focus and a real concern that every year something gets added to the list of things they need to disclose.

XAVIER MARTIN: That's right, and I could supplement that response. What the husbandry of animals and plants involves now—not just for our domestic markets but also for our international markets—is pages and pages of declarations that they're not grazing under a power line or that canola that's going into the biodiesel didn't grow in a paddock with a power line. I'm just seizing on one particular example, but it goes on and on, through dozens and dozens of pages of declarations, about what you're doing and how you're doing it. To the extent that you contemplate even putting an unproven polluting facility out in the landscape and not have it turn up on your declarations, I mean, my members are just going, "Well, how would that work?"

The Hon. ROD ROBERTS: Thank you very much for your attendance today. Mr Martin, what's the agriculture industry in New South Wales worth to the economy?

XAVIER MARTIN: It's around \$30 billion. I think it was noted at \$25 billion or \$26 billion this year.

The Hon. ROD ROBERTS: Lots of money.

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XAVIER MARTIN: Yes.

The Hon. ROD ROBERTS: Could you break it down? Would you know what the export market is out of that? Or could you take that on notice and come back to us with that figure?

XAVIER MARTIN: Yes, I'd be happy to do that. That's the best way for me to respond.

The Hon. ROD ROBERTS: Am I right that the export market is where the good dollars are? Tell me if that proposition is wrong.

XAVIER MARTIN: Certainly, the demand sets the peak and, to the extent that we all aspire, we have to meet that market's expectations, and it's increasingly been the EU.

The Hon. ROD ROBERTS: Why does the EU, in particular, seek out our agricultural products, particularly grains and red meat?

XAVIER MARTIN: It's without a doubt because of our clean, green island. We have an island here with thousands of pests and diseases and contaminants and concentrations that are absent, that are not here. The reason we are seen as clean and green is because of our ability to stay away from those pests, diseases, toxins, toxicity.

The Hon. ROD ROBERTS: I'm going to go back in time, but it's for the benefit of the Committee members. When I last sold cattle—and I'm going back some time now—we graduated from orange tail tags to pink tail tags. The pink tail tag certified that we had signed a declaration in terms of the drenches we used and the various chemicals that were on the ground. It could be traced back to our particular property. We had to sign a declaration that we met the standard. If we wanted to go into the EU market, we had to do that. I'm going back 20 years ago now. I'm expecting that those sorts of declarations and standards would be even more rigid today. Could you explain that process? What's the ramification if you were to sell a beast that had toxins in its system?

XAVIER MARTIN: The reality is now that not only are you putting your whole industry, your whole sector, at risk, but you're also putting your own business at liability of being instantly put out of business with an unmanageable claim, in terms of costs, against what may be a misadventure because you just happened to be grazing your livestock a bit too close to the Parkes energy-from-waste facility and you didn't realise that they were contaminated with those molecules. That's the reality.

The Hon. ROD ROBERTS: There's no intent on behalf of the grazier to do something wrong. It could just be that some form of toxin has been emitted from the facility, it ends up in the soil, the cattle graze, it ends up in their bloodstream, they're tested at a lab somewhere in Europe and it comes up. Not only does it jeopardise that particular producer, but it also jeopardises the whole industry as an export market to the EU. Bear in mind, somebody has signed a declaration saying, "It's all good." What's our declaration worth if we can't prove that standard?

XAVIER MARTIN: Yes. The problem is that, however the egress or ingress of contaminants, whether it's in the air they're breathing, the water they're drinking or the pasture they're eating, once the contaminant is there, present in the environment—and remember that some of these are forever chemicals that there's apparently no safe level of—the ability for my members to manage your food in that circumstance is zero. Next thing, they've got a visit from the EPA and any other compliance organisations, as well as whoever's claiming against them—as well as the damage to the sector. It's a serious matter and not a matter of "It'll be all right." Based on what we see overseas, it definitely won't be all right.

The Hon. EMILY SUVAAL: Thank you both for appearing today and for all of your advocacy on behalf of New South Wales farmers. In your earlier remarks, Mr Martin, you talked about the two different waste technologies that we've largely been examining here, which is landfill versus energy from waste. I just want to clarify that it is the position of NSW Farmers that your members would prefer landfill facilities over energy from waste. Is that the case?

XAVIER MARTIN: All my members are ratepayers in LGAs that utilise landfills. Whilst there are issues from time to time about appropriate management, it's nothing like the unmanageable risk with this energy-from-waste proposal. They're poles apart in their scope and scale of impact on my members.

The Hon. EMILY SUVAAL: I think one of the other things that we, as a Committee—and, indeed, as a State government—are grappling with is the projected situation with our landfill. We are going to run out of landfill in 2030. Indeed, the most recent State of the Environment report shows that waste per person is increasing year on year, notwithstanding the remarks you've also made about rural landholders versus the city CBD, where some of that waste is generated. What would you suggest is the solution given that we, as a State, are projected to run out of landfill in 2030?

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XAVIER MARTIN: My review of those projections shows that they're long on theory and short on practice. I've already outlined to you that this State is an absolute Swiss cheese. Those hundreds of millions of tonnes of holes that I referred to, that's per annum. We've been going at it for 200 years. There's a whole lot of it. I referred to it as a Swiss cheese. When I read that material, that seemed to me to be a sector talking their book when they said, "We're going to run out of landfill." Many LGAs excavate for landfill. It's not an unknown practice. We've got plenty of parts of the State that are not food lands that could be utilised for landfill. What we don't have is other options for clean air and clean water. If you start throwing these toxins into the air and into the water, you cannot manage it. It's not a reversible risk.

The Hon. EMILY SUVAAL: You mentioned earlier in your evidence about waste from Brisbane ending up west of Tamworth. Also, many of our regional areas—some obviously closer to the border—truck their waste interstate across the border into Queensland. Is this a viable long-term option?

XAVIER MARTIN: It's a fiddle that has come about from very silly decisions in this House and in the House on the corner of Alice and George Street in Brisbane. How do you modify a Brisbane citizen's approach to waste by trucking it interstate? They wouldn't even know that it's happening. I doubt that they know that Sydney city's waste is being trucked up and tipped into a hole just south-west of their city as well. It's a complete con and a real fiddle that's going on. The witnesses before us here were talking about the rules that come out of this House that prevent them from doing this, that and the other. What you're touching on and what I'm responding to now is exactly how to fiddle the system and get around it.

Just while I'm touching on this, that Brisbane city waste all caught on fire only a few months ago. My members that turned up as volunteers of the RFS—I don't know what the EPA is reporting about pollution from that event, but what I heard back from my members that are volunteer firefighters and the impact it had on them and their physiology was just extraordinary. How you would think that burning that sort of refuse is somehow a manageable risk—it's another good reason to have the energy-from-waste facilities close by to an urban fire station, because by the time they got there, there was no hope of controlling that out-of-control fire. Think of Mount Vesuvius—that's what it looked like. It went off like Hiroshima. A cloud of smoke went 50,000 feet or 60,000 feet into the air. That was Brisbane city's waste, just west of Tamworth.

The CHAIR: Thank you to you both for appearing today and for your evidence. Questions have been taken on notice. The secretariat will contact you in relation to that.

XAVIER MARTIN: Thank you to your Committee for its important work.

(The witnesses withdrew.)

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Dr RICHARD KIRKMAN, Chief Executive Officer and Managing Director, Veolia Australia and New Zealand, sworn and examined

Ms KATHRYN WHITFIELD, Chief Growth Officer, Veolia Australia and New Zealand, affirmed and examined

Mr EDWARD NICHOLAS, Director, Parkes Energy Recovery, affirmed and examined

Mr KEVIN SOUSTER, Engineering and Delivery Director, Parkes Energy Recovery, affirmed and examined

The CHAIR: Thank you, all, for taking the time to attend and give evidence today. Bearing in mind that there are four of you, you each have the opportunity to make a very short opening statement. Alternatively, if a few of you wish to, you can. We'll start with you, Dr Kirkman.

RICHARD KIRKMAN: Decades of studies on the operation of this technology demonstrate, by all the standards that we set ourselves, that modern, well-regulated energy-from-waste facilities are clean, safe and an important part of waste management infrastructure. That's why it has been adopted and is ubiquitous around the modern economies of the world in all settings, both rural and urban. I would like to emphasise that I acknowledge the genuine concerns of communities. I think that's important. We have always and will continue to engage in open and transparent discussions about their concerns, as we have on the Woodlawn development over the past five years.

In terms of safety, I am not asking you to take my word for it. I'd rather point to the relevant experts. But, what I do know, as a 30-year veteran in this sector, is that if we want a better environment for our children—and I'm a very tired father of a three-year-old, a five-year-old and a nine-year-old—then we must take the necessary actions to educate to avoid waste, to repair old products, to re-use them, to compost, to recycle, to anaerobically digest and to use energy from waste in advance of landfill. All those activities that I list are well regulated. They're evaluated, monitored and designed to be safe.

There are three sentences that I think are important here. Who should decide on whether things are safe? Quite rightly, it's the relevant authorities, the government institutions, the EPA, regulators, health experts and the Chief Scientist. Secondly, how do we distinguish between the noise and the facts? People's opinions and concerns must be listened to, but a strong emotional response doesn't constitute a fact. Finally, if we really want to aspire to be one of the world's cleanest countries, like Sweden, Japan, South Korea and Norway, and achieve 99 per cent landfill diversion using a well-managed set of infrastructure tools to create a circular economy, then we should make the choice to develop energy from waste and avoid more landfill.

EDWARD NICHOLAS: Energy from waste has a safe and proven role to play in contributing to a circular economy and supporting the transition away from landfill. That role has been recognised in policies that have been implemented by New South Wales government going back around 10 years. Realising the value of this technology relies on best practice development of infrastructure, supported by leading technology providers and long-term relationships with host communities. In pursuing the development of an energy-from-waste facility in the Parkes Special Activation Precinct, Parkes Energy Recovery is committed to delivering on those priorities. We're pleased to have the opportunity to build wider awareness of the challenges facing waste management and resource recovery; provide an opportunity for the science to be shared and for questions to be answered; and, for us as developers, demonstrate our commitment to establishing infrastructure that will have a net positive impact on local communities and the State as a whole.

The CHAIR: I might turn straight to you, Mr Nicholas. If everything was signed off today for the Parkes proposal to go forward, how long would it take for it to be up and operating?

EDWARD NICHOLAS: We think the typical construction timeline for these projects is around four years.

The CHAIR: That would be at the full capacity of something like 600,000-odd tonnes per year?

EDWARD NICHOLAS: I think during the course of construction, you will be able to commence operating at a slightly earlier stage through the commissioning process. But until it's fully operational, it would be the four-year time frame.

The CHAIR: In your submission, and certainly from the Government's perspective, it's routinely framed as a regional economic opportunity. What are the proposed community benefits?

EDWARD NICHOLAS: There are enormous community benefits and great benefits to being in a regional location over an urban location in this regard. Certainly one of your predecessors, John Barilaro,

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understood this very keenly in supporting the development of the special activation precincts in the first place. That's because the economic benefits can accrue disproportionately in a regional location, where there are fewer people and there are fewer industries. It can accrue disproportionately in a regional location versus being in an urban environment. If you take it at its face, first of all, the special activation precinct being 4,800 or so hectares that the New South Wales Government has been developing now for coming on five years or so—a significant investment by the New South Wales Government in the enabling infrastructure in that location.

Really, the energy from waste is intended to operate as a catalyst for further development in that location, taking advantage of the geographic location, being at the nexus of the Inland Rail and the transcontinental railway going from Sydney to Perth via Adelaide. Those two railway lines meet at Parkes, and that was really the genesis for the development of the large intermodal facility there at Parkes. But being the generator in that location of around 70 megawatts of baseload energy gives a great opportunity to co-locate energy-intensive industries in that special activation precinct that wouldn't otherwise choose to locate in that location. Whether that's minerals processing, whether that's value-adding to agriculture or whether that's offtakers for the steam or for the electricity, that's the greatest opportunity available for the special activation precinct and the location of the Parkes Energy Recovery facility. It is much better suited there than in an urban location that doesn't have those natural advantages.

The CHAIR: When we talk about the special activation precinct, the parameters have changed since we were in government. Under my predecessor, Parkes was still listed as a potential site. It's this Government that has locked that in. Turning to that, when you're talking about the apparent regional economic opportunity, what does the cost-benefit ratio show for Parkes compared with Penrith? If you are trucking huge amounts of waste out to the regions, how does that stack up in terms of the figures?

EDWARD NICHOLAS: Certainly for us, what we need to do is ensure that we're putting forward a competitive proposal so that for any customer who is attracted to sending waste to our energy-from-waste facility, it needs to be competitive with the alternatives. Those current alternatives include landfill and ultimately will include, of course, our colleagues at Veolia's energy-from-waste facility at Woodlawn, among other locations. Really, what we need to do is, with the total cost of disposal of waste, whether to landfill or whether to energy from waste, ours needs to be cost competitive with that.

The CHAIR: Tell us, then, a little bit more about how that equates when it comes to things like land costs, which are obviously cheaper in the regions, so that makes a financial advantage to you. Labour costs as well—the further you get away from the city, that also becomes more of a financial advantage to you.

EDWARD NICHOLAS: Not necessarily. I think the labour costs will be offset around labour supply challenges as well. One of the things that we are going to need to address in the development of these facilities is to make sure that there is an incremental addition of skilled labour into these markets.

The CHAIR: I might turn to you, please, Mr Kirkman. You've already had regulatory breaches at the existing bioreactor facilities located at Tarago, haven't you?

RICHARD KIRKMAN: I think that's important to put into context. The facility at Tarago was originally an old copper, zinc and lead mine, which was left abandoned by the insolvent miners. We proposed to clean up that site and make it a zero-liquid discharge, which has huge benefits locally to avoid acid waters and heavy metals running into the creeks and rivers of the region. To do that, we set it up as a bioreactor. Now on the site there's a solar farm, a wind farm, a fish farm, a sheep farm, a mechanical biological treatment and the bioreactor. In terms of the regulatory breaches you talk about, none of them have caused any pollution events. We're talking about things like, one, water moving from one pond to another pond, which wasn't allowed. We completely acknowledge that we shouldn't be doing that and we have to fix that, but there was no pollution caused and we were in a period of five years of extraordinary rain in the region. Despite that, we've maintained our record of no discharges.

The CHAIR: The mine that you referenced, hasn't that now been reopened?

RICHARD KIRKMAN: The mine has been reopened under new ownership, yes.

The CHAIR: That's separate to Veolia?

RICHARD KIRKMAN: That's a separate activity.

The CHAIR: Right, but it is operating again at this point in time. How would the proposed energy-from-waste facility work in with the already existing operations including the mine? The bioreactor, I understand, will be at capacity very shortly. What will happen with that? In connection with the operation of the mine, that is a relatively recent thing.

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RICHARD KIRKMAN: The bioreactor has capacity for at least another 20 years for some of Sydney's waste and some local waste too. Let's remember, we take 100,000 tonnes of material locally, and that needs to go somewhere. The mine operates relatively independently. It's underground, it has a mining licence, and we have an interface deed to manage our relationship with the miners. There's no complication from a further development related to the mining activity.

The CHAIR: A question to you both then, Dr Kirkman and Mr Nicholas, before I pass on to my colleagues. You talk about taking into account and acknowledging the genuine concerns of communities. Rather than sites being imposed by the Government, what of better and greater opportunities for community input and engagement in developing areas that might be more open or willing to host such facilities? Surely social licence is of critical importance to you as well?

RICHARD KIRKMAN: I might start, if that's okay, by saying that the idea that we're shipping all of Sydney's waste out to the regions isn't quite right. Sydney's producing millions of tonnes of waste, much of which goes into transfer stations and liquid treatment facilities in the city, and then goes to Eastern Creek and other places around where it's processed. Recycling, composting—all these activities happen. The residual waste is going out, but waste management facilities are interspersed in the city and out of the city as a network of infrastructure that's required, similar to transport infrastructure.

In terms of where to locate it, wherever we would locate it, waste facilities are not generally popular. People don't think they're going to be a good idea. When we allow them to visit our facilities and we show them around, the experience we have is that they're much more open and they realise we're doing a professional job behind the fence. That's why we have an open-door policy on people visiting our locations and an education process with schools to show children what happens to their waste, whether it's recycled or disposed of. In terms of selecting where to go, we need to look at all the benefits that can be derived. I think if you look at the infrastructure in general, we have a rail network set up, which is very efficient in transport and diesel-use terms, to get the material down to Woodlawn. We have the facilities there to manage any excess waste and any downtime we might have, so it's a really great piece of infrastructure for New South Wales.

The CHAIR: Mr Nicholas?

EDWARD NICHOLAS: Certainly in terms of social licence, I think we always have more to do. I think the best thing we can do is to keep progressing through the studies, release to the community fact-based information and be openly engaging and candidly engaging with people. That's what we've been doing since we were first announced as being the selected partner to develop the Parkes Energy Recovery facility, and that's what we're very committed to doing.

Dr AMANDA COHN: I've got some questions for both of you. I might start with Parkes. What's the expected life of the facility?

EDWARD NICHOLAS: The lease that we would sign with the New South Wales Government has a 40-year term.

Dr AMANDA COHN: Over those 40 years, what's the volume of waste that you'd require for that to be commercially viable for that entire period?

EDWARD NICHOLAS: The technology that we are looking to deploy will be approximately 600,000 to 700,000 tonnes per annum of non-recyclable household and commercial waste.

Dr AMANDA COHN: You've made a number of assurances to the local community around the regulatory framework, and that's fairly robust. I understand that recent events in both France and the Netherlands have demonstrated that there are risks to local community health, even under that current EU regulation. What work or what modelling have you done to look at pollution under difficult conditions or other than normal operating conditions?

EDWARD NICHOLAS: We've established onsite at Parkes a weather station and an air quality monitoring station. The reason we're doing that is because, as part of the incredibly rigorous environmental impact assessment that we need to do for the New South Wales Government's regulatory requirements, there's no point us just relying on what's been done in Dublin or what's been done in Copenhagen. We have to show site-specific data for our particular location.

So if I take, for example, monitoring air emissions, the local weather station is at Parkes airport, which is approximately 10 kilometres away from us. Now, we could use the weather data from that, and it would be indicative and would give a very strong indication. But, in fact, to actually do it in a meaningful way that gives real science to the assertions or what we are putting forward, we need to do it on a site-specific basis, so we've undertaken the investment to put the air quality monitoring station onsite on our location so that we can build up

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the full 12 months of data and to be able to present real information to the community about what the emissions would be, where those emissions will fall and what the ground level concentrations will be and the build-up of those. That's really important in order to establish a baseline and a fact base for this discussion.

Dr AMANDA COHN: Thank you. It's helpful, but I think you've only answered half of my question. There's a specific question about other than normal operating conditions. So, for example, during startup or during shutdown or during other periods of non-normal operation, certainly for a neighbouring farmer who might be facing a risk of dioxin pollution, it's absolutely no comfort to them to say, "Well, this was a non-standard day of operation." So how are you including those types of events or abnormal parameters in your modelling?

EDWARD NICHOLAS: I'll ask my colleague, Kevin, to answer.

KEVIN SOUSTER: To cover the other than normal operating conditions—startup, shutdown et cetera—during startup of these facilities, there's no waste charged into the facility. We're not incinerating waste until certain parameters are met, very key parameters developed over years of regulation from the UK and the EU, which have got us to these high standards of BREF, which we're now using in New South Wales. That's a really important factor to consider. The plant's brought up to a temperature to ensure that the dioxins and furans are destroyed in the combustion process and that other pollutants are managed through our flue gas treatment system. That's really important. And on shutdown the same—we keep those very stringent controls in place. We ensure that they're managed and treated. And then we stop feeding waste; that's all processed through, and then we can shut down the facility.

In terms of the emergency situations as well, there are regulations coming through with New South Wales as well that ensures that if we are looking like we're going to breach these conditions, we can stop feeding waste. There'll be interlocks in the system to ensure safety to the community. And the question to the modelling, for example, when we look at reference facilities, we look at not just standard operating conditions. We also look at worst-case scenarios, if there ever has been a situation where those conditions are met, and we model those to ensure that they're safe as well for the community. We take all of that into consideration when we're doing this air quality impact assessment.

Dr AMANDA COHN: Those worst-case scenarios, is that included in the modelling that you're releasing to the community?

KEVIN SOUSTER: It will be.

Dr AMANDA COHN: Reference is repeatedly made to European regulation. In particular, in France, I understand that 12 million people were advised by French health authorities not to eat their backyard produce because of dioxin pollution. What's being done differently here to prevent that kind of event?

KEVIN SOUSTER: I think what we've got to be very clear on is old versus new incineration and technologies. We're now working to a whole different level within waste to energy with the best available technology and evolution of regulations. Old incinerators never used to manage temperature within the combustion process of above 850, which is proven to destroy dioxins and furans, and didn't have adequate flue gas treatment systems. The new facilities are heavily regulated. The advantage is we have one emission source, the stack, which has a continuous emission monitoring system, compared to others, which can have emissions from all over the place. We have one. This is monitored continuously and we have adequate systems to ensure that those pollutants, which are very negligible in terms of what comes out of the stack—less than 0.1 per cent of those are the pollutants; the rest is just what's made up in the air we breathe today—are managed adequately and safely for the community and locally.

Dr AMANDA COHN: I might put my follow-up questions to that in writing, in the interests of time, because I've also got questions for Veolia. In keeping with this line of questioning, community confidence in the regulatory framework is obviously a key question for this Committee. In particular, Veolia has had nine breaches of your existing licence for your existing operations that I'm aware of. My colleague asked about those and you've responded with reference to external factors like the rain levels and flooding, but if external factors contributed to those breaches, what's preventing similar failures at a future facility?

RICHARD KIRKMAN: I think my primary assertion is that the noncompliances have not caused any pollution events. They're technical noncompliances with the licence, which we don't consider to be acceptable. We do need to work to improve them. As I say, not keeping a log for the operation of a pump was one of them. Water from one dam to another dam was another one of them. We have to fix all those things. It is an incredibly complex licence we have to comply with that's been put together over a 20-year period, and there's some conflicting arrangements between the planning and the licensing. Our main objective there is to make sure that we are improving the environment, and we are improving the environment. We are preventing pollution by being

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on the site and containing water. I think it's really important for us that we don't have those technical noncompliances, but they're not the same as breaching a pollution requirement.

Dr AMANDA COHN: At least one of those events that I'm aware of was based on water quality testing in nearby waterways.

RICHARD KIRKMAN: Yes.

Dr AMANDA COHN: The Government is reassuring communities that the regulatory framework is going to be adequate and that that regulation will protect communities. When you're repeatedly breaching that regulation, what confidence can you give future communities that these planned regulations for the incinerator would be adhered to?

RICHARD KIRKMAN: I think the fact that there are some technical noncompliances, some small matters that haven't caused a pollution event and are picked up by the regulatory authorities, is a good indication that we are very tightly monitored. Everything we do we self-report, and it is checked as well, independently, by the EPA over many visits, many discussions. They're extremely attentive to what we're doing. I think there should be some confidence that we will be complying with the licence of an energy-from-waste facility.

When you talk about emissions to waters and water quality, there has been no emission to water quality. There was some sampling of a local creek which had some chemicals in it after many, many years of a mining activity and farming activities which have contributed to the quality of that waterway. At the same time, the report itself recognises that the samples were taken in a period which was not representative. It's important that we look at the real impacts and the real realities of what is going on down at Woodlawn. We are preventing pollution of the waterways by being there. That's what we do as an organisation. We get paid to do it, and we're proud to do that and make a profit from it. But our job is to improve the environment. That's why we contend energy from waste is important.

Dr AMANDA COHN: I have one quick follow-up, Chair, before I go to my colleague. I'm aware of the time. Specifically, the incident I'm referring to, which I think was only earlier this year, is regarding the water quality. My understanding is that Veolia was issued a penalty notice for that issue, and you're now saying it's related to farming or mining or other activities. Do you contest that you played a part in that contamination?

RICHARD KIRKMAN: I'm relating to the report that was written on local water quality in the creek, and that there was no evidence that came from our site and that there are other pollution sources in the area. I don't know what penalty notice you're referring to, but I can take that on notice to tie all that together. I don't have all that information in front of me.

Dr AMANDA COHN: I'm happy to provide some of that information in written supplementary questions. But, certainly, it's my understanding at this stage that what you're saying contradicts what the EPA said.

RICHARD KIRKMAN: Okay.

The Hon. ROD ROBERTS: Dr Cohn asserted that there have been nine breaches at Woodlawn. How many have there actually been?

RICHARD KIRKMAN: There have been nine.¹

The Hon. ROD ROBERTS: There are only nine?

RICHARD KIRKMAN: That's correct.

The Hon. ROD ROBERTS: What about the incidents at the transfer station at Crisps Creek? Wasn't there a pollution incident there?

RICHARD KIRKMAN: What incident are you referring to?

The Hon. ROD ROBERTS: I don't have it in front of me. You're in charge of it. Was there a pollution incident at Crisps Creek at the transfer station?

RICHARD KIRKMAN: We have had liquid spilling from a container on its way from the transfer station to the landfill site. We take the waste on a train from Sydney, it's delivered within a few kilometres of the site and then the last few kilometres are by container on road. There was some spillage of some liquids from the vehicle.

¹ [Correspondence](#) from Ms Megan Surawski, Head of Government Relations, Veolia Australia and New Zealand, providing clarification to evidence given at the public hearing on 15 December 2025.

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As I say, there's no discernible pollution event related to that. It's a technical noncompliance. We've had to refit all those containers, buy new ones and clean that up. But we have not caused any pollution from that event.

The Hon. ROD ROBERTS: What about the leakage from the rail trucks when they were parked at Tarago rail sidings?

RICHARD KIRKMAN: Yes, that's what I'm referring to.

The Hon. ROD ROBERTS: I'm referring to Crisps Creek. Crisps Creek and Tarago rail siding are two different locations. I live in Goulburn, so I know. Tarago had an old station and there was a siding there where you used to park the trucks, and they were leaking constantly, with putrefied liquid coming out of them. That's separate from Crisps Creek. What can you tell us about that?

RICHARD KIRKMAN: They weren't leaking constantly.

The Hon. ROD ROBERTS: I was there and saw them. I went and looked at them. They were leaking.

RICHARD KIRKMAN: I would assert that they were not leaking constantly. There was some spillage from them, and we cleared that up.

The Hon. ROD ROBERTS: Was that a pollution event?

RICHARD KIRKMAN: It's not a pollution event that has any impact. There is no impact from that.

The Hon. ROD ROBERTS: But is it a pollution event? I didn't ask you for impact. Bearing in mind you're under oath here today—you've taken an oath on the Bible to tell the truth—is putrefied liquid leaking from a rail truck a pollution event?

RICHARD KIRKMAN: I stand by the fact that we have not caused any pollution to the environment from that location, and that we prevent pollution. That's what I'm saying. There have been some technical noncompliances.

The Hon. ROD ROBERTS: What about the windblown rubbish then?

RICHARD KIRKMAN: I'm trying to tell you the precise truth.

The Hon. ROD ROBERTS: Right then. Continue on.

RICHARD KIRKMAN: I'm just clarifying that I am trying to tell you the precise truth.

The Hon. ROD ROBERTS: What about the windblown events?

RICHARD KIRKMAN: Litter?

The Hon. ROD ROBERTS: Yes.

RICHARD KIRKMAN: Yes, all landfills have a problem that litter is airborne.

The Hon. ROD ROBERTS: You tried to tell us before, though, it was just some leakage from some dams and some water stuff. I'm now elucidating and bringing out other things that you haven't bothered to tell us.

RICHARD KIRKMAN: I gave you two examples from the nine that were listed. I'm happy to talk about the others.

The Hon. ROD ROBERTS: Please do.

RICHARD KIRKMAN: In terms of windblown litter from the site, that's a problem that all landfills have. We have to put up bigger fences and clean it up, but it's not causing a pollution event. We have recovered all those pieces of paper and plastic that flew across the landfill. It is an inevitable problem of having a landfill. One of the propositions to solve this problem is to build an energy-from-waste plant, where that isn't a problem.

The Hon. ROD ROBERTS: In your submission, you say:

... a proven technology that when operated to international best practice emissions controls, such as those used by Veolia, is environmentally, chemically, atmospherically, and operationally safe.

We've seen so far, in your existing operation at Woodlawn, numerous breaches. It's a lovely motherhood statement that's not backed up by fact.

RICHARD KIRKMAN: I think it is backed up by fact. The landfill that we operate is operated to international best practice and standards. You won't find a better operated landfill in the world than Woodlawn. That's what I contest. We have people that travel the world looking at all these landfills and sharing best practice

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with us. They recently came to see what we were doing and were very impressed by that. There are technical noncompliances to the licence, which we need to fix, but they don't cause pollution to the environment.

The Hon. ROD ROBERTS: So they're unforeseen events that have happened that, once they happened, you rectified and fixed.

RICHARD KIRKMAN: In this case, we're operating the landfill to the best standards. Some of the compliance requirements are very difficult to maintain. On the energy-from-waste plant, we operate many of them around the world—65—and we don't have any problems with being compliant. An important part of our proposition is that we can clearly point to the 65 we operate—and we don't have any noncompliances—and the thousands that exist around the world.

The Hon. ROD ROBERTS: I'm not worried about the 65 you operate around the world. This is the New South Wales Parliament. I'm responsible for constituents in New South Wales, and your track record at Woodlawn is not the best. You say it's difficult and it's technical—I understand all that sort of stuff. Mistakes happen. Can you give us an ironclad guarantee that this is not going to happen at an energy-from-waste facility that you operate?

RICHARD KIRKMAN: I can assure you from the operation of many facilities around the world—and I think that's relevant because it shows that we are able to do it here—that we can operate them to the standards that are required and that will prevent any pollution being incurred.

The Hon. ROD ROBERTS: I'm sure you told Goulburn Mulwaree Council the same thing when you applied to operate the Woodlawn waste facility as a tip, for want of a better word. Didn't you tell them you were involved in world's best practices and best standards and everything?

RICHARD KIRKMAN: We did, and at the time we told them we'd like to do this because otherwise the whole area is going to be polluted by acid mine water run-off and heavy metal. We'd like to get in there and prevent that happening. We need to pay for that somehow, so we'll develop this bioreactor to best international standards, which we've done.

The Hon. ROD ROBERTS: Notwithstanding all the breaches, though.

RICHARD KIRKMAN: Notwithstanding the technical breaches that haven't caused widespread pollution.

The Hon. ROD ROBERTS: We'll move on from that, although you do have an interest in the next part I'm about to say. Mr Nicholas, I note that the two existing energy-from-waste plants in Australia that I'm aware of, Kwinana and East Rockingham—which you'd be interested in, Mr Kirkman—have both gone into administration during their construction stage.

EDWARD NICHOLAS: That's not quite correct. Kwinana didn't go into administration.

The Hon. ROD ROBERTS: What happened to it, then?

EDWARD NICHOLAS: There was a recut of the deal as between the contractors, the equity and the debt. It subsequently—

The Hon. ROD ROBERTS: Because they weren't paying the debt. Is that correct?

EDWARD NICHOLAS: This happened during the construction, so before the facility was operating and earning revenue.

The Hon. ROD ROBERTS: And East Rockingham?

EDWARD NICHOLAS: East Rockingham is currently under external administration, yes. It's controlled by the receivers.

The Hon. ROD ROBERTS: What guarantee can you give the Government and the people of New South Wales that a similar process won't happen when you build an energy-from-waste facility at Parkes?

EDWARD NICHOLAS: I think this has to do with the selection of the partners that we choose to work with on the project and the management of the construction and operation of the facility as we go through.

The Hon. NATASHA MACLAREN-JONES: I just want to follow on from the questions around breaches and, more broadly, whether or not you have a contamination strategy and what that entails.

RICHARD KIRKMAN: A contamination strategy for?

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The Hon. NATASHA MACLAREN-JONES: In the event of. A forward plan—do you have that in place?

RICHARD KIRKMAN: It's a different type of technology to landfill, and the strategy is therefore different. As Kevin mentioned earlier, if there's any sign that a facility could be heading towards a breach of any of the emission limits, it's automatically shut down. There are safeguards in place to prevent that from happening in the first place, and that's why it's a very robust technology.

The Hon. NATASHA MACLAREN-JONES: You said "heading towards a breach". What is the process and the steps—I assume that is part of the strategy—as to regular checking, whether it's soil or air? Do you have that in place? Would it be in place?

RICHARD KIRKMAN: There will be sampling in place outside the facility to check the long-term impacts of what's coming out of the stack and to show that they're not having an impact. I'm talking about the operation of the facility, the day-to-day. There's a combustion chamber where we're taking in mixed materials. They can vary and the combustion varies, so we have to control it in all normal circumstances for a very wide composition of wastes. We know that over 20-, 30-year operating periods we can contain that combustion, treat the gases very well and make sure we comply with all the limits.

There may be the odd occasion when a gas canister was to pop and disrupt the gas. In that circumstance, the plant would be shut down. We would stabilise it and turn back to normal operation. All the events that have happened over the last 30 years of experience of running these facilities—we've pretty much experienced everything you could imagine in terms of the types of waste that will be put into the household bin and arrive at this facility. That very wide experience of different options enables us to have all the strategies in place to manage it in the moment.

The Hon. NATASHA MACLAREN-JONES: Do you have economic modelling around the impact on the organisation if you were to go into shutdown?

RICHARD KIRKMAN: On the organisation?

The Hon. NATASHA MACLAREN-JONES: Financially—like economic modelling, what impact that has on you.

RICHARD KIRKMAN: The shutdowns would be for a short period of time while we rectify the situation, and then we would start up in the normal way, without waste on the grid, and return to normal operation. Those shutdowns would last one or two hours.

The Hon. NATASHA MACLAREN-JONES: From a Parkes perspective, the same thing—do you have contamination strategies in place, or are you required to have them in place?

KEVIN SOUSTER: Standard practice twofold is you've got the control system of the plant—the brain of the plant, shall we call it—that is there to make sure that these events don't happen. It's watching. We've got screens. We've got the continuous emission monitoring system, which is monitoring these pollutants. If that trend is tracking towards an ELV breach, then you've got operators watching the screen, and you've got the brain also automatically, which will take control and stop waste feeding into that.

Separately, to back that up, we do standard operating procedures as well—SOPs—for the team, which go through a full training package. During the commissioning phase when the plant is built, there's a whole training package delivered by the people that are building and constructing the facility, and then we develop training packages from there. That's taught through the whole team, so they know exactly what to do throughout each scenario. We have emergency response plans, for example, that will detail exactly, step by step, very clearly for the team what to do to ensure these events don't affect the local community.

The Hon. NATASHA MACLAREN-JONES: How often would soil and air be tested?

KEVIN SOUSTER: I can't give you an exact answer to that. I don't know if Kathryn would know anything in detail. But in terms of what we do, we have sensor receptors around the site, and we would follow whatever is required under the regulation to do the testing.

The Hon. NATASHA MACLAREN-JONES: Do you know what that requirement is now? Are you able to take on notice?

KEVIN SOUSTER: I'll take that on notice.

The Hon. EMILY SUVAAL: Thank you to all of you for appearing today. I want to start off by asking about reducing our waste and increasing recycling, which, of course, we all want to do. Obviously the State of the

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Environment report shows that waste per person is increasing year on year. Our landfill is projected to run out of space by 2030. What would you suggest is the solution?

RICHARD KIRKMAN: I would suggest that energy from waste is an important part of the solution, but it's not the only part of the solution. We spend a lot of our time and employ people that are dedicated to going around schools and explaining to kids that putting things in the right bin reduces the amount of waste going to landfill or even considering not buying something that you're going to have to throw away very quickly. Then all the way through repair, re-use, recycling electronic equipment, making sure batteries are not going in the residual waste, composting, recycling, anaerobic digestion—which is an energy from waste for food waste—and the energy-from-waste thermal method which we're talking about today, plus some landfill for some materials which don't fit any of the other categories are all part of the normal waste hierarchy adopted everywhere around the world. The further you can go up the hierarchy, the better. We know residual waste is going to grow. We've sized these two particular facilities that we're talking about today well under what will be required for residual waste across New South Wales. That allows for a huge amount of room to grow all the other types of waste treatment.

EDWARD NICHOLAS: I think the thing I'm most excited about is education and the opportunity to have the discussion. One of the most interesting things about putting forward our proposal for an energy-from-waste facility in Parkes is how much it's provoked a conversation about waste much more broadly than just the energy from waste. It's also looking at looking at the background: How has it come to pass that we are generating so much waste? How has it come to pass that we are landfilling so much waste? How has it come to pass that we're missing all of our targets in terms of recovery and recycling and diversion away from landfill? For me, the real opportunity here is in the education and the discussion we get to have as a society as a result of that.

The Hon. EMILY SUVAAL: I should have started with the statement, Dr Kirkman, that I'm also a very tired parent of a five-year-old and a seven-year-old. I feel your pain. Even if we halve the amount of waste produced per person—obviously that would be a good thing—we are still on track, regardless, to run out of landfill due to the construction and demolition waste that is coming from building new infrastructure, which we obviously need, and also new housing. Where should that waste go?

RICHARD KIRKMAN: Are you talking about new waste that's coming? Construction and demolition waste can be quite well recycled. It's not really the type of material that we're looking to put into these facilities. That's really going down the recycling route, to recover the aggregates and the metals, and to decontaminate it so we can recycle that material. Obviously there's population growth, which also increases the amount of waste we're producing. The New South Wales population is predicted to grow significantly. Even if we reduce the per person waste, we could end up with more waste through population growth. I hope that answers your question.

EDWARD NICHOLAS: For me, the construction and demolition waste sector in fact has been the success story among the waste streams that we generate. It's at, I think, around 82 per cent recovery rate now. I think that's because people who are generating waste in that sector are financially motivated to do better. They're financially motivated to divert it away from landfill and to be able to recover and recycle as much as possible. We need to make sure that similar sorts of incentives are available in other waste streams—in municipal solid waste and in commercial industrial waste—such that it is a better outcome for waste generators to be able to sustainably deal with it, instead of it finding a home in landfill or energy from waste.

The Hon. EMILY SUVAAL: With the more problematic construction and demolition waste such as asbestos, lead and other hazards, if that can't go to landfill, where should it go?

EDWARD NICHOLAS: We're certainly not specialists in hazardous waste treatment, so I wouldn't seek to opine on that.

KEVIN SOUSTER: What's clear is what we're proposing is a non-hazardous energy-from-waste facility. That's clear for the two plants. There are incineration processes that do deal with hazardous waste. They operate at higher temperatures. They are proven to destroy those products. But that's as much as I want to say about that, because that's not what we're proposing at all.

RICHARD KIRKMAN: I could build on that by saying that hazardous waste has different types of outlets and different types of treatments—chemical treatments, physical treatments—to render it safe before it's deposited in specialist cells at landfills. We're certainly not proposing any of that material goes through this technology. It's not designed for that.

The Hon. EMILY SUVAAL: I can't recall if it was said by Dr Kirkman or Mr Nicholas. There was a mention in an opening statement about the work that's being done in Sweden, Norway and Japan. I want to ask perhaps both of you, if relevant, to speak to some of that international experience, including what has been learnt from the example that Dr Cohn gave earlier about France, which I'm not sure if you can speak to, whether that was an older incinerator facility or otherwise. Could you give international examples that are relevant here?

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RICHARD KIRKMAN: I can talk to some experience around that. I started my career in the UK, in the south of England, where there were three old incinerators. They'd been operating since the 1970s. They didn't have any air emissions clean-up technology at the time. Veolia took those facilities over from the local authority. We closed them down and we built new ones with air pollution control equipment. We had to measure the soil at the time. There were dioxins in the soil from those facilities, because they weren't destroying the dioxins, they weren't capturing them and they weren't making less pollution than you started with in the first place. The new technology was specifically designed by the EU to fix that problem. Then, if you move forward, places like Sweden have moved to 99 per cent of their waste not going to landfill. Around half of their waste will be composted and recycled, and the other half will be turned into energy. That's what they decided to do and they've delivered it. They've got a very clean environment.

The Hon. EMILY SUVAAL: In your submission for Parkes Energy Recovery, you talk about flue gas treatment systems and scrubbing. Could you explain that technology to the Committee? It sounds like a newer technology, and certainly something that we would benefit from learning a bit more about.

KEVIN SOUSTER: It's certainly not a newer technology; it's been around for a while. Depending on the technology provider, they all use a very similar flue gas treatment system. At various stages of the process we treat different pollutants. Like I said at the start, we don't start the incineration process of waste until it's above 850 degrees. That's to destroy the dioxins and furans. No waste can be entered into the boiler until that temperature is released. There's a mechanical flap—sorry if I'm going to get too technical—to stop that from happening. The waste then enters the boiler, it's incinerated and what happens then is you get high temperatures in the first pass, where we then inject ammonia or urea for your nitric oxides gasses. That produces a natural form of combustion that neutralises those.

The aim is then, from that temperature, because we brought it up to such a high temperature for the destruction, to recover all that energy potential by the time it leaves the stack. Through that process we have a boiler that recovers that energy, and then we leave the boiler and we enter what we call the flue gas treatment section of the plant. At a certain temperature we have optimal injection points for lime, or sodium bicarbonate can also be used, to neutralise acid gases. We inject those into the flue gas path, and also powdered activated carbon, which is like an absorbent which captures your heavy metals and any very small amounts of dioxins and furans that are left from the destruction and the first pass. Then we put that flue gas through a tighter channel with a lot of turbulence called a LAB-Loop. That accelerates and spins it, just to help the mixing process. That really helps it. Then what happens is it goes through a baghouse filter, which has two roles: to catch all the dusts that fly through from the combustion process—the fly ashes and dusts—and also to aid the reaction of the flue gases.

From there, it's a big fan called the induced draft fan that blows the gas out of the stack. The CEMS system is there monitoring that. Part of that control system—again, sorry, it's what I love; I'm a bit technically geeky. We have a monitoring system at the front end called the raw gas system. It's telling the flue gas treatment system, "This is the raw concentrations of gas coming." Then it pre-emptively what's coming so it knows what amount of lime and what amount of activated carbons to put into it, and the continuous emission monitoring system at the back end is verifying and making sure, with a massive degree of safety, that you're staying under those emission limits values that are set in your permit.

The Hon. EMILY SUVAAL: That's very helpful to my previously quite rudimentary understanding.

The CHAIR: Are you going to give us a summary of that, Ms Suvaal?

The Hon. EMILY SUVAAL: No. Did anyone else have anything to add before I move on to my next question? No? We've also heard this morning about the differences between landfill versus energy from waste. Could you each provide comment on the science, as you understand it, behind both of those approaches to waste management and whether one versus the other is more or less beneficial to the environment or regional economies?

RICHARD KIRKMAN: I'll start, if that's okay. Landfill is one of the oldest existing options for waste, where you've got a hole and you're putting it in a hole. But since the 1970s it has been much better regulated. There is an understood best practice for lining the landfill with an impermeable layer, extracting the gas and extracting the liquids that are produced and, at the end of it, capping it and trying to return the site to nature, while continuing, over the long term, to extract those gases and produce energy from them. At the same time, it's somewhat of an agricultural process. It's difficult to entirely contain everything, such as the litter that was mentioned earlier. A piece of paper might fly away whilst you're tipping a vehicle into the landfill, and that's very difficult to prevent. It doesn't mean we can't do it without it being safe or without protecting the environment; it just means that there may be better options.

One of the things that's difficult to control with landfill is odour, because waste does smell. We all know that from our own bins at home. The new technology, therefore, is something that tries to do away with some of

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those more difficult aspects. Energy from waste is bringing air into the process, so it's under negative vacuum, which means you're containing odours, and it's dealing with the waste in the moment. It's not leaving a legacy of 20 years or 30 years whilst that waste is in the ground producing gas and producing liquids. Therefore it is a more up-to-date, modern and technical process which can be very tightly controlled. That control differentiates it from landfill.

The Hon. PETER PRIMROSE: Does anyone else have any comments on that question?

EDWARD NICHOLAS: The only thing I would add is that energy from waste is the resource recovery opportunity that a landfill isn't, in many regards. Not only are you able to generate electricity or other forms of energy that can be beneficially re-used, but you can also capture the other valuable materials—recovered aggregates, which can be used for road building. With the recent construction of the Newell Highway bypass at Parkes, they've used a significant amount of virgin construction materials which would otherwise have potentially been avoided if you had a recycled or recovered aggregate material available. Equally, there are a lot of metals, both ferrous and non-ferrous metals, that would otherwise end up in landfill that can be recovered through an energy-from-waste process, again helping to avoid virgin materials having to be created for said purpose. I think the opportunity in the resource recovery is broader than just dealing with an alternative to landfill. It's also about maximising the value of the resources embedded in our waste.

The Hon. PETER PRIMROSE: To whoever would like to answer this, I have a follow-on question. One of the arguments that's put to us as to why we need to proceed to energy from waste is because we're running out of land for landfill. The counterargument is that New South Wales is full of holes, and we're getting more and more all the time, so why can't we keep using landfill? How can you say we're running out of holes? Given that you're involved in both landfill and, presumably, energy from waste, can you give me a comment on your response to that argument?

EDWARD NICHOLAS: Parkes Energy Recovery isn't involved in landfill per se, but we would certainly support the notion that it doesn't need to be about the exhaustion of landfill capacity in order to find energy from waste as a superior alternative. From our perspective, whether New South Wales was running out of landfill capacity or not, we would still think that energy from waste is a better alternative to landfill.

RICHARD KIRKMAN: If I could add that a hole is not a landfill. There may be plenty of holes, and it may be that New South Wales is like a Swiss cheese, but they're not landfills. You need to properly engineer it. You need to obtain a licence for doing that, go through a planning process and build the landfill, and it's not the best option. I think the question we should ask ourselves is: Why do we develop the technology that's not as good as the one in hand?

The Hon. EMILY SUVAAL: I have a further question—and it might be to our colleagues from Parkes—with regard to dioxins in particular. That's something that we've heard about on and off this morning. In terms of what produces other dioxin emissions—perhaps this is to either group—is it your understanding that dioxins are produced from other sources along with that? Could you talk to what those include?

RICHARD KIRKMAN: Dioxins are produced by all combustion processes. Bushfires would produce significant amounts of dioxins. They're completely ubiquitous in the environment. If you're to go down into the sediment of Lake George, you'll find dioxins in there, because they have been produced for all time during those natural combustion processes. The thing to understand about energy from waste is that the levels of dioxins are extremely small. We're destroying more dioxins that are coming in with the waste than are coming out of the stack. That's not something that can just go wrong. We've been operating these facilities for 30 years across hundreds of sites, and this hasn't gone wrong. The evidence that it is safe and that those things that people are worried about won't happen is overwhelming.

KATHRYN WHITFIELD: I'd also like to refer the Committee to the New South Wales Government energy-from-waste fact sheet. That provides an emissions comparison, in particular around dioxins and furans. It shows the actual emissions from an energy-from-waste facility in comparison to a closed wood heater or stove, which shows that the wood heater or stove has significantly higher levels of dioxins and furans. I'd also like to add that as part of the Woodlawn ARC project, we undertook a detailed human health risk assessment. Through that, they looked at the absolute worst case emissions levels, modelled those scenarios and then looked at it from a conservative perspective. Essentially what that included was the dioxins and furans piece, and it showed that even under those worst case emissions pathways, the Woodlawn ARC—the energy-from-waste facility—was safely within New South Wales regulations and guidelines that are protective of health, water quality and food production.

The Hon. EMILY SUVAAL: In your submission, Mr Nicholas, you speak to the fact that modern energy-from-waste technology has been proven to operate safely in close proximity to agricultural and food

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production regions worldwide. Are you able to give the Committee any examples of where that has or is currently occurring?

EDWARD NICHOLAS: Sure. There are multiple examples—in the UK, in particular—of the operation of these facilities in agricultural locations and, equally, in Switzerland, in Lucerne and Lausanne, whether there are dairy farms operating in close proximity to these facilities. One of the advantages for the Parkes Energy Recovery facility is that the New South Wales Government master-planned the special activation precinct to have a 4,800-hectare buffer zone around the energy-from-waste facility, which will help to give additional comfort to agricultural producers in the vicinity around the safe operation of this.

The CHAIR: I will be very quick in the last couple of minutes that we have. I'm pleased that both of you have referenced the fact that energy from waste is not the only part of a solution. I'm just wondering if other methodologies that you consider part of that waste hierarchy that should also be looked at as part of a bigger picture include pyrolysis and gasification.

RICHARD KIRKMAN: Pyrolysis and gasification are technologies used in quite niche applications. After 30 years of evaluating what's the best technology, that comes up very often—why aren't we doing that? Isn't it better? It doesn't work on this type of waste. There are no facilities, with this composition of waste, commercially operating that have been successful. I would say that even if that were the case and they were successful, it doesn't offer many benefits in terms of developing smaller scale pyrolysis gasifiers than this type of facility. It does work on some homogenous biosolid, sludge-type materials. It's well used for that to produce biochar. There are a couple of examples of pilot-sized facilities across Australia. It is used in Asia on some types of waste which are more suited, but it's not a widely available technology for this waste stream. It has been shown that this technology is really the one that's the most effective and the most environmentally enhanced.

The CHAIR: Thank you. Mr Nicholas?

EDWARD NICHOLAS: Nothing to add there, thanks, Ms Overall.

The CHAIR: Just finally, in the minute that we have left, Dr Kirkman, you also pointed out that under the current proposals that have been put forward, they'll still be under capacity when it comes to dealing with the continuing growth of waste, including residual waste. Would you both or all agree that more such facilities are going to be needed into the future? If so, are you suggesting that they should only be based in the regions?

RICHARD KIRKMAN: I don't think it's my place to decide where the other facilities are. I think it was an extremely progressive and bold decision of the Government to put forward a policy to develop energy from waste and nominate some good locations where that can happen, some locations where on balance that makes sense, with the knowledge that this process is safe. Clearly, we have to acknowledge that not everyone's happy with that decision, but I would say that that is a very good progressive decision that around the world has proven to be successful for people that have made that choice.

The CHAIR: And are you suggesting that there will be a need for, into the future, further such facilities to deal with the problem?

RICHARD KIRKMAN: I think four will make sense for New South Wales now, three or four locations makes sense now, and we have to do our best to see if we can change the culture of New South Wales and Australia to recycle more, use less materials, educate the kids to do things differently. If we can do that and be more successful than all other countries, then we won't need any more. So it's probably best to start with this amount and then see where we get to in the next few years.

The Hon. NATASHA MACLAREN-JONES: Just to follow on from—

The Hon. EMILY SUVAAL: Chair, we're at time.

The Hon. NATASHA MACLAREN-JONES: I'm aware, and you also had a lot of time, Ms Suvaal.

The Hon. EMILY SUVAAL: But I also ceded a lot of my questions to you.

The Hon. NATASHA MACLAREN-JONES: Just one final question following on from this. Just in relation to your contracts, you mentioned before that you needed a large amount of waste for it to be viable. Is that written into your contracts that you must be provided with X amount tonnage of waste per year?

RICHARD KIRKMAN: Typically the way we work that is to have exclusivity. If it's residual waste, it will come to us, but if the authority of the council can recycle more, compost more, not produce more, then it doesn't have to come to us. We're not locking in waste for the long term, if that's what you're thinking.

The Hon. NATASHA MACLAREN-JONES: But is it for the short term? Is that written in to guarantee that you will receive a certain tonnage?

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RICHARD KIRKMAN: We estimate the tonnages, but we have exclusivity on what's produced. We're not saying, "You have to produce more waste. You have to not recycle. You have to not compost." We have exclusivity. We don't have a fixed tonnage.

The CHAIR: Bearing in mind that we are two minutes past the hour, I don't know if you have anything further to add to the final question, Mr Nicholas.

EDWARD NICHOLAS: No, nothing more. Thank you.

The CHAIR: Thank you for appearing today and for your evidence. I believe that you did take some questions on notice, so the secretariat will be in contact with you in order to facilitate that further. Thank you all.

(The witnesses withdrew.)

(Luncheon adjournment)

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Mr JEFF ANGEL, Director, Boomerang Alliance and Director, Total Environment Centre, affirmed and examined

The CHAIR: Thank you, Mr Angel. I apologise for the tardiness of some of our colleagues. Welcome and thank you for making the time to give evidence today. Would you like to start by making a short opening statement?

JEFF ANGEL: As you would have seen from our submission, we're largely addressing your terms of reference item (1) (i). We have some in-principle positions on waste to energy. We are, as a community and as a waste management scenario, discussing waste to energy and also the declining landfill capacity because of a legacy of failure over several governments to reduce waste creation. Waste to energy is not a new idea. It has been promoted by the industry and some regulators for several decades. The fact is that we need to move fast on waste minimisation through a variety of policies, such as extended producer schemes and expanded recycling.

One of the critical, fundamental problems with waste to energy, particularly the large installations that are being proposed, is that they require long-term contracts for large amounts of waste in order to be financially viable. The entrance of such large facilities will inevitably deter policies to reduce waste at local and State level, because the contracting party for the waste will be required to provide compensation if you don't meet the required tonnages. It will also have a dampening impact on government policies by reducing the urgency to have real circular economy plans in place. The Government's latest infrastructure plan is called the New South Wales Waste and Circular Infrastructure Plan, and it anticipates four incinerators, claiming that these are a transition away from landfill but "not the end goal". Given the long-term nature of these plants, one has to ask, "What date is long term?" I don't think they've answered that question yet.

Finally, we reject the presentation of waste to energy as a circular economy measure. That is nonsense. It is, in fact, a linear process that also produces quite large amounts of toxic residue. They claim to derive their material from the red bin, as if everything in the red bin is non-recyclable. Anyone will tell you, including the regulators, that there is a lot of recyclable material in the red bin. As technology and industry develops, more of that should be available for recycling and extracted for those purposes. Thank you.

The CHAIR: Thank you, Mr Angel. We might mix things up a bit for the afternoon. Mr Roberts, I might go to you first for some questions.

The Hon. ROD ROBERTS: I don't have any questions at this point in time.

The CHAIR: I'll come back to myself, in that case. Mr Angel, you referenced there the legacy of the failure of waste creation. If we're bringing it back to the current Government and their waste management policy, which is very much focusing on this concept of the circular economy, what's your view of suggestions that have been put forward in various guises that really there is no cohesive waste strategy or long-term plan in relation to what we're seeing unfold? Also, when it comes to emerging technologies—you might want to break that down a little bit as well—if we're talking about your view on the state of the waste strategy right now, what might that translate to in terms of a longer term view on emerging technologies that could be incorporated as part of it?

JEFF ANGEL: I think the kindest thing you can say about the current circular economy policies is they are an embryonic work in progress. The Government has certainly started addressing a substantial amount of the waste—the food and garden organics—but I think that's on a very slow move. They recently passed the lifecycle Act—it's got a slightly longer title—which allows for any products to be addressed for an extended producer responsibility, stewardship. That too is very embryonic. There's obviously an issue about whether you move to national or State action—I'm certainly not avoiding criticism of the national Government—and that's one of the reasons we continue to ask for unilateral State action as a way of pushing forwards on cleaner and more circular economy policies. That's exactly what happened with the introduction of the container deposit scheme. New South Wales was the first—after South Australia, with its somewhat heritage scheme—in 2017 to introduce CDS and then all the other States followed.

So I don't think the argument about we need a national approach on circular economy really holds water in that we can get States to move forwards and lead. There are a range of very important components of the waste stream which can be addressed by so-called advanced technologies or advanced policies. A number of the key things that we're now looking at or should be looking at is, of course, battery waste, which is causing very serious problems with waste collection and reprocessing infrastructure, i.e. fires. We have a very big issue with packaging. So far we've seen the national Government fail to take action on packaging, and that's a very substantial portion of the waste stream. I'm talking about the municipal waste stream, because that's the main source that the incinerators want. Only at the beginning of this year, in March, industry and environmental groups got together saying we need an extended producer responsibility scheme for packaging covering the entire industry by next

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year, and we still don't have any indication from the Federal or, for that matter, State government about what might eventuate.

Sorry, this is taking a bit long. In addition to the recycling infrastructure, there's a very significant activity in terms of actually reducing the amount of material that can be wasted in products. Packaging is clearly a good example of that, and that requires redesign of products. There's also the issue of replacing plastic, for example, with more benign, less energy-intensive materials, and also the activity of re-use. You'll see from the recent NSW Plastic Plan 2.0 that re-use is rising in prominence, but that's an extremely valuable approach to reduce waste generation.

The CHAIR: Thank you for that very comprehensive answer. Let's turn to energy from waste. Your submission is strongly against the concept. Is your group, the Boomerang Alliance, part of a broader coordinated effort in working with local communities to oppose any proposals from any facilities around the State?

JEFF ANGEL: I wouldn't actually say "working with". I would say we've been supportive in terms of submission and providing information, but the vast amount of energy and organisation opposing those particular large plants is locally generated.

The CHAIR: In terms of going back to your opening point about the legacy of failure when it comes to waste creation, in referencing things like battery waste you're also stating that other technologies like pyrolysis and gasification pose problems. But we need to come up with solutions in order to address these things, and recycling and FOGO and things is not going to deal with matters like battery waste. What feasible alternatives are you putting forward in that regard?

JEFF ANGEL: At the moment, the only way we address battery waste is through the voluntary B-cycle program, a national program that's quite clearly failing, and it may in fact collapse. For some years the Boomerang Alliance and the Total Environment Centre, the Australian Council of Recycling, Waste Management Resource Recovery Association and some other groups have been pressing for mandatory regulation of battery waste—the whole universe of batteries. New South Wales is taking the lead with developing a State-based EPR program. I know they're moving urgently. I know that they would like that to be a pilot for all the other States, but their timetables are either looser or unknown. But the actual technology to extract the materials from batteries and re-use that material is readily available.

What they need is a market that's effectively created by regulation in order to give them the business model. While we continue to have competition from easy, cheap ways of disposal—i.e. chucking it in the bins—and a disinterest from most of the producers of batteries to be all part of a scheme, then we lack those financial justifications. They can be overcome through regulation. I doubt whether you'll get a sincere piece of evidence from any of the industry that they don't need mandatory regulation of the entire sector, and they reject B-cycle, the voluntary approach, which has beset waste management and government decision-making for years, because the industry will come along and say, "Let us try it first. We're not going to force everyone to join the scheme." Eventually they totally fail to meet their targets and we're left with a worse problem.

The Hon. EMILY SUVAAL: You mentioned in your opening remarks and again just now about the EPR scheme that the Government has introduced. It has been referenced in terms of product stewardship and improvements to product stewardship this morning, on and off throughout the inquiry. I wondered whether you had any further particular recommendations around that, obviously acknowledging your earlier comments about it being at an embryonic sort of stage.

JEFF ANGEL: On batteries?

The Hon. EMILY SUVAAL: On batteries or on anything.

JEFF ANGEL: There are some fundamental settings for any of those schemes. One is you remove the free rider problem, and that means you engage and regulate the entire industry. The lack of free rider provisions does deter some companies from doing their best or even participating. Secondly, you need broad governance. Often when you get governance dominated by the actual producers, they go for the cheap and nasty collection methods. That may be in their financial interests, but it certainly doesn't give you the maximum potential recovery of the particular waste product. Thirdly, you're going to need targets, redesign of a product in order to reduce the amount of waste it actually creates, recycling targets are often accelerating over a period of time, and there is the opportunity for re-use. In batteries, you can re-use them as long as they undergo a certain amount of treatment and testing.

The fourth element, which most of these voluntary schemes fail on, is widely accessible collection points so that consumers can get those products into the recycling scheme, and there are sufficient fees being charged on the producers in order to financially support the collection system. Of course, the container deposit scheme is a

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perfect example of that. There were targets for how many return points you have to have. There's the setting of a handling fee, which covers collection as well as sorting and counting. In the case of CDS, there's a refund, which encourages even more return behaviour by consumers.

The current proposal on batteries, for example, from the New South Wales Government lacks targets and appears to anticipate multiple collection schemes for the same basic products. I'm not actually sure how consumers are going to cope with that. For example, we have the odd battery collection bin at some facilities and supermarkets. But if you have multiple collection schemes, what are you going to have, multiple bins at supermarkets that produce a collection scheme and another bin for some other collection scheme? I think the New South Wales approach on batteries requires a lot of improvement.

The Hon. EMILY SUVAAL: Your submission also talks about incineration being worse than landfill. Given the current landscape we have with waste in New South Wales and the fact that we are projected to run out of landfill in 2030, is it your position that we should be increasing the landfill component, as opposed to looking at alternative technologies like energy from waste?

JEFF ANGEL: No, I acknowledge time is very tight. I don't acknowledge that that's a reason not to accelerate extended producer responsibility and put that as first in the queue for government work. I've read in the government's circular infrastructure plan that there are a few ways of extending some landfills. I do think it's debatable that as long as you have methane capture from landfill, that could be, in the short term, better than energy from waste, which has quite a high greenhouse gas footprint and produces an enormous amount of toxic residue after the processes. What do you do with that? If you're asking me what we are really going to do, given the reality we're facing, my reaction is that it's the last chance to get waste minimisation, recycling and re-use on the front foot. If we were going to come back in five years time and we still haven't done that, we're going to be in serious strife.

The Hon. EMILY SUVAAL: Even if our individual waste production halved per person—because there has been modelling done to this effect—we are still projected, as I say, to run out of landfill in 2030, largely because of some of the infrastructure and building waste. Is the alternative to not build new houses or not build new roads?

JEFF ANGEL: It's not my understanding that infrastructure and building waste has come to its maximum point of recyclability. In fact, it is the portion that has the highest level of recycling, mainly because of the waste levy. The stuff is very heavy and the waste levy is charged per tonne. There's more we can obviously do with infrastructure and demolition waste than we're already doing now.

The Hon. EMILY SUVAAL: I noticed a number of your recommendations in terms of the alternative landscape, so to speak, go to the role of local government. We'll be hearing from local government later this afternoon, and we heard from some representatives earlier this morning. In terms of reducing red bin landfill collections through variable bin sizes, that is something that, council by council, they can introduce—and some have. Do you have other suggestions for how local councils can partner with State Government in this role?

JEFF ANGEL: I think, at the end of the day, local government has a fairly limited role. I don't see why we should put the responsibility on individual councils to solve what ends up in the red bin. What ends up in the red bin is largely a result of the signals that State policy is sending either to a consumer—for example, there are obviously far less beverage containers going into the red bin, because you can get a refund and people can pick them out of the red bin. There are ways of influencing consumer behaviour or household behaviour. If we are able to establish markets, for example, increasing the recycled content of packaging will create a market to get those soft plastics and other plastics out of the red bin and into the reprocessing plants that we have a few of but who want to expand, very largely. If they have a recycled content requirement, then they're able to sell the reprocessed plastics. I don't think local councils can really do much to implement those macro-level policies.

Dr AMANDA COHN: I just wanted to follow up on the question about product stewardship. We have the excellent Product Lifecycle Responsibility Act in New South Wales, which, as you know, has only been applied to batteries. What do you see as the other waste streams that that sort of scheme could be easily applied to?

JEFF ANGEL: The most prominent ones that come to mind are soft plastics. If you talk to the industry, they're really ready to go, but they're lacking that free-rider protection and the right to impose fees on producers to support the system. There are obviously other forms of packaging. Can I say that not only should we have producer responsibility or life cycle schemes just for collection and recycling—the whole point about the concept of life cycle is that you go up to the beginning of the manufacture and design of the product so there is less waste that will come at the end of the cycle—but also create re-use markets. Obviously a lot of the product, for example, that you'll find in public bins and red bins are single-use materials or single-use items.

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Some of that is being addressed by the ever-expanding list of bans on single-use items. Nationally—and New South Wales is now leading—there's a list of 24 items that are being targeted. Well, they're not in the red bin anymore; they don't exist in the marketplace. That solves, to some extent, that problem. The other big push is on re-usables. I'm sure everyone here has re-usable cups. We'd certainly like parliaments to mainstream the use of re-usable cups for their coffees and what have you. Re-use makes a very big impact on the amount of waste you end up with, because the single-use material product no longer really is needed. There are all those sorts of things. We can't just say we're going to recycle, recycle and recycle. We have to reduce the amount of waste in the first place that's just generated through product design and availability.

The CHAIR: We are out of time. We very much appreciate you being here. Thank you for your evidence. I don't think you took any questions on notice. If there's anything further that's required, the secretariat will be in contact.

(The witness withdrew.)

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Mr JACK THROWER, Senior Economist, the Australia Institute, before the Committee via videoconference, affirmed and examined

The CHAIR: I welcome our next witness. Thank you for appearing today to give evidence. I also note that you are appearing via videoconference from Canberra. Please note that for witnesses appearing from overseas, parliamentary privilege does not apply to the evidence they give, and protections for witnesses appearing from interstate are also more limited. I advise you to be careful about the comments you make during your evidence and to avoid making adverse reflections about others.

JACK THROWER: Understood.

The CHAIR: Would you like to make a short opening statement?

JACK THROWER: Yes, I'll just make a quick one. Essentially, our submission goes to one key issue, which is that the proposal for energy-from-waste facilities isn't an effective long-term solution to managing residual waste, particularly given rising consumption of things like plastics. In addition to the risks of these facilities, which are identified by other submissions and things like that, we argue that the most effective long-term solution is to focus on the production of waste—so trying to reduce the production of residual waste in the first place through a bunch of effective policies to reduce the consumption of plastics, textiles and things like that. I'll end my statement there.

The CHAIR: We'll turn to some questions immediately, then, based on what you have just stated there and in relation to the need for the focus to be elsewhere, in accordance with the Australia Institute's submission. Given the scale and growth—and continuing growth—of waste in New South Wales, how feasible is it to achieve the level of reduction both that is needed and that you would hope to achieve in the recommendations that you've put forward within the timelines needed to avoid landfill shortfalls?

JACK THROWER: We haven't investigated that matter in particular. Regarding the way of managing the shortfalls in the short term, that's beyond the scope of the submission for now. Our focus is more broadly that over the longer term, particularly things like plastic waste, is increasing on an overall level—it's more than doubled since 2000—as well as a per capita basis. Without policies to bring down the rate of growth and actually start to have a decrease in our consumption of these things, then we will need quite robust action, such as a plastic tax and things that we've recommended in the report. But we haven't specifically modelled the particular behavioural effects that would have in the short term.

The CHAIR: You are mindful, then, that the time constraints being suggested are leading much of what's being looked at in terms of other proposals, options and alternatives. If you haven't yet had the opportunity to assess some of these things that you're putting forward, you do recognise the difficulties when it comes to a timeline.

JACK THROWER: Regarding the best policies to manage things in the short term, I'm able to take that question on notice and get back to you.

The CHAIR: One of the recommendations in the submission is about delaying. Rather than outright rejecting energy from waste, you talk about delaying EFW. Is there any regulatory framework or set of conditions under which EFW would be acceptable within a defined scope and role?

JACK THROWER: Can you direct me to where exactly you're talking about with the delay?

The CHAIR: I'll find that one for you and come back. I'll hand to Dr Cohn so that we don't waste any time.

Dr AMANDA COHN: Thanks so much for your submission and for making the time to give evidence. I was really interested in a couple of the policy recommendations in your written submission that have come out of the 2024 report on plastic waste in Australia. In particular, there was one about working with the Commonwealth Government to implement a tax on virgin plastic packaging and another one about extending producer responsibility schemes. I was hoping you could speak to those two recommendations in more detail and what role you see for the State Government in progressing those.

JACK THROWER: A lot of the focus, particularly in the plastics sector and waste in general, is on the consumer, so on individual consumer choices and things to nudge or encourage consumers to make better decisions. We're taking a more structural, industry focus. At the Australia Institute, we say quite often that economics 101 is you tax things you don't want and you subsidise things you do want. Under the current system, we don't tax plastic despite the huge externalities it causes, particularly in the waste space. These things are being implicitly subsidised by the lack of tax on that externality.

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You can kind of do these things in tandem, but one of the suggestions we have is following the EU into a tax on virgin and non-recycled plastic packaging. We calculated that in the year 2020-21 that could raise about \$1.5 billion. Another benefit of—actually, these both sort of apply to both, so I'll also mention the extended producer responsibility schemes, which extend the producer's responsibility to the post-consumer stage of the product's life. Essentially, the producer becomes at least somewhat responsible for where their products end up. They would be responsible for facilitating the disposal and the proper waste management of the products that they're producing. I guess the benefit of both of these policies is that, one, they put the burden on the producer, not the consumer, who is the actor in the system that is best able to manage these problems in terms of they have the product expertise, they have the resources, and you're sort of aligning incentives there in order to reduce plastic waste.

The other thing that I would mention—sorry, it's momentarily left my brain. To the jurisdictional question, a lot of our reports are generally aimed at the Federal Government, in particular, the tax issue. As I'm sure the New South Wales Parliament is very aware, it is difficult to find constitutionally valid tax bases, particularly in things that would look like an excise. This would, as we say in our submission, require working with the Commonwealth Government to implement a tax, which would both have the benefit of discouraging plastic waste and raising revenue, which could be used for a bunch of purposes, including more effective long-term waste management. In terms of extended producer responsibilities, that would obviously also have some jurisdictional issues but, from my perspective, fewer than would be introduced by the implementation of a new tax. I'll end my statement there.

Dr AMANDA COHN: This morning we heard, just as one example, that the proponents of the Parkes proposal are anticipating its life span would be for the next 40 years. What impact do you see that having on the broader sector and broader policy implications for the work we need to do towards the circular economy?

JACK THROWER: There are a couple of things going on there. Another of the points that we've underlined in the submission goes to the findings of the Independent Planning Commission on Redbank Power Station. Essentially, one of the key reasons that we're concerned about energy from waste is that by making waste into a fuel source in an electricity system, particularly if these plants are to be open for 40-odd years, we are creating a market for waste and incentivising the ongoing production of waste.

As was found in the decision on Redbank Power Station, the various submissions were concerned about—and, for context, this is about burning biomass, which would include woodchips and other biomass—it incentivising land clearing and native forest logging. The IPC agreed, finding that it would "establish a new commercial incentive to increase land clearing to a rate materially greater than the average actual clearing rates". In the same way, we have the concern that, through the creation of energy-from-waste systems, we are creating a new vested interest in ongoing residual waste production in order to keep these things going.

Another thing that I don't believe we touched on in the submission itself is from the other side of this. Energy from waste is often portrayed as a "two birds, one stone" system that creates the energy we need and deals with waste. On the energy side, it's not particularly clear what role this proposal, or others, would play in the energy system. Generally, these things are quite small scale. They don't compare to major renewable projects or anything, in terms of the energy they produce. They also don't have the speed that things like batteries do, in terms of introducing firming capacity to the grid. You neither have something that's going to significantly add to baseload, and it's not quick enough for firming either. In terms of the energy side of the equation, it's not entirely clear what role this plays in the grid.

The CHAIR: This is a similar question that I have asked a number of witnesses in relation to delaying energy from waste. My question for the Australia Institute specifically is do you see any regulatory framework or set of conditions under which there could be an acceptable or defined role for EFW?

JACK THROWER: Can I take that one on notice as well, please?

The CHAIR: Yes, certainly.

The Hon. NATASHA MACLAREN-JONES: Thank you for your submission. I just want to ask about food waste in Australia, and the survey that was done in relation to that. In particular, you talk about other ways of reforming use-by dates. Can you elaborate a little bit more on that? Is there any research or work that has been done, and what are the date parameters that are looked at?

JACK THROWER: In terms of the—

The Hon. NATASHA MACLAREN-JONES: The labelling.

JACK THROWER: I will also have to get back to you on notice on that.

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The Hon. NATASHA MACLAREN-JONES: That's fine. That was just one of the policy recommendations put forward.

JACK THROWER: Yes, I'm aware. I don't have that information at hand right now.

The Hon. NATASHA MACLAREN-JONES: That's fine. Organisations like Foodbank and SecondBite, and those initiatives that use food near or just outside its use-by date to support others in the community—in the survey, was any work done or questions asked around that?

JACK THROWER: Questions asked about the role of those organisations?

The Hon. NATASHA MACLAREN-JONES: And how that impacts on reducing food waste.

JACK THROWER: I'm sorry. I still don't quite understand.

The Hon. NATASHA MACLAREN-JONES: Rather than food that would be thrown out, it's being recycled and donated to organisations.

JACK THROWER: Specifically, were you talking about the opinion polling that was done?

The Hon. NATASHA MACLAREN-JONES: Yes. I just asked if there were any questions around that.

JACK THROWER: I don't have the poll at hand, so I'll have to take that one on notice.

The Hon. NATASHA MACLAREN-JONES: My other question is in regard to Redbank. In the submission, it refers to the need for an additional source of fuel outside the targeted site. Looking at energy from waste, one of the things that has come up is the amount of waste that would be required. I'm interested to know a bit more around the consent and approval process of a contract guarantee. In relation to Redbank, my understanding is it's the amount of wood that would have been provided. How would that work in relation to a waste-from-energy contract and guaranteeing waste to be provided to a company?

JACK THROWER: I'm not aware of the contractual provisions that are required there. The point was more in an aggregate sense, whether there's a direct contractual relationship between a waste management facility and the energy from waste or whether the energy-from-waste facility simply now is required to—whether it's dealt with by a long-term contract or whether the energy-from-waste facility needs to source its waste every year through its own activities or something like that. We didn't specifically look into the specific legal or commercial relationships that they are likely to have here or that they have in general. It's more the general point that, through some mechanism, the creation of energy through waste facilities creates a body and a broader system need for ongoing production of residual waste.

The Hon. NATASHA MACLAREN-JONES: Looking at the Redbank scenario, was there anything within the existing laws that could allow them to deviate from contracts?

JACK THROWER: I don't have that information at hand. I can take that on notice, if needed.

The Hon. NATASHA MACLAREN-JONES: That's fine.

The Hon. EMILY SUVAAL: Just to clarify, did we receive apologies from Dr Denniss? He's not appearing—not a problem. I was just clarifying because I thought there was another witness appearing on this panel. Thank you so much for making time to appear today and for your submission to the inquiry. We all want to reduce our waste and increase our recycling efforts, but the State of the Environment report clearly shows that waste per person is increasing year on year regardless. That's in spite of the number of initiatives that we've taken. Our landfill in New South Wales is projected to run out by 2030. What is your suggestion in terms of a solution to our waste issues?

JACK THROWER: Are we talking about in the short term? Is this essentially the same question as I'm taking on notice already from earlier in the session?

The Hon. EMILY SUVAAL: Given we're projected to run out of landfill, what is the solution? I'm happy if you want to take it on notice also.

JACK THROWER: Essentially, yes, I would like to take this and the similar question about the short-term options on notice.

The Hon. EMILY SUVAAL: In terms of what options we've currently got available to us, and, as I alluded to earlier, the fact that we are projected to run out of landfill here in New South Wales by 2030, should we build another landfill instead, as opposed to looking at energy-from-waste facilities?

JACK THROWER: I'll have to take that on notice as well.

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The Hon. EMILY SUVAAL: Let's talk about construction and demolition waste, perhaps. This is largely unrecyclable. It's usually contaminated with things like asbestos, lead and other products. If that can't go to landfill, where should that go?

JACK THROWER: I'll also have to take this on notice. We were predominantly looking at the plastic waste. Over the longer term the fact that a reduction in plastic and textile waste, which is mostly what we've been looking at, will mean that there is, I guess, more capacity in the system. If we have any further comments on that, I can provide them on notice.

The CHAIR: Mr Primrose?

The Hon. PETER PRIMROSE: No, I think the witness has covered most of my questions.

The CHAIR: Mr Thrower, again, you might need to take this question on notice. In the opening statement of the Australia Institute where it specifically references the health and environmental risks for regional communities, is the Australia Institute suggesting that there are risks for health and environment of regional communities, and has that been assessed or verified in any way from the position of the Australia Institute?

JACK THROWER: I think I will also have to take that on notice. The focus of the paper wasn't on those, but I understand from the abstract there is mention, so I'll have to seek out exactly what.

The CHAIR: It's a fairly specific aspect that we are looking at in this inquiry as well, that potential impact on regional communities, so that would be great if that could be explored in a little more detail. I think with that, if we have exhausted our supply of questions, we thank you for your evidence and for appearing today. Obviously, we do have a number of questions on notice, and the secretariat will contact you in relation to those, in bringing them forward. Thank you very much for your time.

JACK THROWER: Thank you so much.

(The witness withdrew.)

(Short adjournment)

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Councillor KHAL ASFOUR, Vice President (Metropolitan/Urban), Local Government NSW, sworn and examined

Mr DAMIAN THOMAS, Director Advocacy, Local Government NSW, affirmed and examined

The CHAIR: Thank you both for being here with us today and making time to give evidence. Would either or both of you like to start by making a short opening statement?

KHAL ASFOUR: Thank you, Chair and Committee members, for the opportunity to appear before the inquiry today. Local Government NSW welcomes this Select Committee inquiry into proposed energy-from-waste facilities, as councils are at the front line of waste management. They face mounting challenges: increasing waste generation, diminishing landfill capacity and limited markets for recycled content. Energy from waste is often presented as a solution, but it is a contentious and lower order option in the waste hierarchy. Councils have expressed strong concerns about large-scale mass-burn incineration, which they view as outdated and high risk. International best practice shows that energy from waste can work when integrated with rigorous pre-sorting, smaller distributed facilities and industrial co-location to minimise transport emissions. Local Government NSW's view is that energy from waste should only be considered for non-recyclable residuals after exhaustive resource recovery, and only where the technology is proven, emissions are tightly controlled, locations are supported by the local community and social and community trust is secured.

Local Government NSW recommends that New South Wales examine proven low-emission technologies like gasification and pyrolysis, require independent validation before deployment and mandate pre-sorting to ensure energy from waste complements recycling rather than competes with it. Large-scale energy-from-waste projects, particularly those processing household waste, will have significant impacts on the regional centres where they are proposed. These impacts include environmental, social and economic dimensions. We continue to advocate for other means to manage Sydney's growing waste challenge, such as improved avoidance, recycling and organics recovery, rather than exporting the burden to regional New South Wales. However, where energy-from-waste facilities are accepted by the host community and approved, Local Government's clear position is that this must be limited to one large-scale facility per local government area to prevent cumulative impacts. Furthermore, host communities must be financially compensated for accepting these facilities through structured benefit-sharing frameworks that deliver tangible dividends such as jobs, infrastructure and affordable energy access.

Energy from waste cannot succeed without social licence, and community confidence in these facilities hinges on transparency and on safety. Councils and their communities are deeply concerned about air quality, hazardous residues and long-term health impacts. The technologies proposed for New South Wales lack demonstrated performance under Australian conditions. Our submission calls for continuous emissions monitoring, real-time public reporting and independent verification aligned with EU and OECD standards. Health impact assessments and long-term community health monitoring must be mandatory for all energy-from-waste projects. Energy-from-waste projects in New South Wales and Australia face significant financial uncertainty, which we have seen in Western Australia with investor losses and cost blowouts. Risks must not be shifted onto councils and ratepayers, and it's important that government-backed co-investment, risk-sharing models and long-term energy offtake agreements are in place to ensure financial stability. Any undue burdens on communities must be avoided.

In conclusion, Local Government NSW urges a cautious, evidence-based approach. Energy from waste should remain a last-resort option, deployed only under stringent environmental, health and governance conditions and only where there is community support. Our recommendations aim to protect communities, uphold equity and ensure that New South Wales's waste system advances sustainability rather than locking in outdated solutions. I thank the Committee for considering our submission and those of the local government sector.

The CHAIR: Thank you, Mr Asfour. Mr Thomas?

DAMIAN THOMAS: No, thank you.

The CHAIR: We'll turn straight to questions then. As we all know, councils are under extreme pressure when it comes to current funding arrangements and their finances and also in securing waste solutions. It has been pointed out a number of times today, as you've just referenced, about them being on the front line when it comes to how we address this ongoing problem. But going to the financial impact, one of the points that was raised earlier today is the additional impost of things like sending waste out from Sydney to regional areas and the additional costs that sort of scenario imposes on councils and ratepayers alone. Do you agree with that?

KHAL ASFOUR: Yes. I mean, there's the transporting of waste and the effect it has on roads. For regional councils, that's a severe impost on maintaining a roads budget. There are also the health impacts on those

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communities. I mentioned them in my opening statement. There's also the idea amongst regional councils as to why should they be dealing with metro Sydney's waste, and I think that's a fair thing to say. There are other ways that we think the waste can be dealt with, and one of them is—the current levy that is collected by the Government of about \$1 billion annually, the waste levy, goes to consolidated revenue, and if that was put towards adequate processing of infrastructure capacity, waste avoidance and re-use promotion, that might be part of the solution. We just think that it's important that other possible alternatives to these facilities could be looked at with the revenue that's generated from the waste levy. Mr Thomas might want to add something.

DAMIAN THOMAS: The only further thing I'd say is that, as Councillor Asfour said, councils do generally support the principle of managing waste as close as possible to its source wherever possible. But they've also added that transporting waste significant distances increases the vulnerability of the waste system as well and its susceptibility to natural disasters and other hazards that may prevent that waste reaching where it needs to go to.

The CHAIR: I'll get to the second part of the point that you've raised there in a moment, but just to the first part, when we're talking about funding the waste levy et cetera, some of the solutions that have been put forward include a greater focus on FOGO, for example. But it was also pointed out earlier that it's fine to have that aspiration, but councils are not being provided any additional funding or assistance from a financial perspective in order to undertake other programs, alternatives or options. So if that is going to be a feasible option going forward, then essentially more money is required to go where it needs to have that happen.

KHAL ASFOUR: Absolutely. Councils across the State are cash-strapped. We all know that; it's a fact. And to add another layer of operational cost on councils, especially in regional councils—where the ability to raise revenue is difficult—it would really be a burden on them and won't allow them to be able to achieve what's needed in terms of FOGO successfully.

The CHAIR: Mr. Thomas, do you have anything to add to that?

DAMIAN THOMAS: I mean, in general terms, councils are very supportive of the FOGO mandate coming in from 2030. Many councils already have their FOGO collections in place. But you're right that it is a longstanding position of LGNSW that councils do require support to offset the full costs of implementing that FOGO mandate, and councils—like all levels of government—are stuck between having budget shortfalls to do what they need to do for their communities but at the same time trying to keep costs as low as possible during a cost-of-living crisis.

The CHAIR: Finally, before I hand to my colleagues, I come to the point of not necessarily ruling out energy-from-waste facilities entirely. You raise the point about the need for stringent regulations, and then that comes to the idea that, if it is primarily around stringent regulations, location should not be the primary determinant on that. We've also had it raised by the other councils present today that—and acknowledging, as you have, regional councils rightly expressing concerns about the export of a waste burden from the cities to our regional areas. But the city councils have also said that they're of the view that, at the very least, the concept and idea of energy from waste, potentially in conjunction with other alternatives and options as well, needs to be opened up for better exploration and potential community engagement. Is LGNSW consistent with that view as well?

KHAL ASFOUR: Yes, absolutely. If a council was to explore an energy-from-waste facility, it is imperative that they get their social licence to be able to do that. We truly believe that, if you don't have social licence, the negative perceptions and the impacts on community will be disastrous, from reducing the value of crops to other commodities. You just don't know what the environmental impacts are or could be on water and soil contamination and the like. It's really important for openness and transparency that, through the whole journey of an idea to build one, to a DA process and to building and operating, the community is on board from the beginning and the community is understanding of what the impacts are going to be and also what the benefits could be, based on the technology that's used and the type of energy-from-waste facility that is constructed.

DAMIAN THOMAS: If I could briefly add to that, the social licence piece is really important. We keep hearing that from councils. Building the social licence cannot be left to local government alone. There are genuine risks and there are also perceived risks. But I think, due to the lack of information and the lack of education of the community, some of those risks are being elevated above where they otherwise may be. There are reputational risks that are arising due to that uncertainty, where councils and communities are concerned that they may have a reputational impact on their ability to attract tourism, for example, or an impact on their crops and the desirability of their agricultural produce from those LGAs as well.

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Dr AMANDA COHN: Local Government NSW has been calling for the waste levy to be reinvested in waste infrastructure for a very long time. Could you speak in a bit more detail to the types of infrastructure, other than incinerators, that councils need to support them to reduce residual waste?

KHAL ASFOUR: There are three main ones: ensuring adequate processing infrastructure and capacity is available for councils, campaigning to promote better waste avoidance or running better waste avoidance and re-use campaigns within community, and making sure that maybe part of this levy goes towards verifying information on energy-from-waste facilities as well. That could be what the money could go to. We just feel that the money that is raised from waste is going to consolidated revenue and it should be invested back into waste budgets across New South Wales.

DAMIAN THOMAS: Further to that, we've talked about FOGO previously and the need for investment in FOGO infrastructure for that emerging and growing waste stream. We've also called for funding of further research and development for the delivery of recycling technologies for emerging problem waste, such as batteries, mattresses, chemicals, paint and the like, that, at the moment, are heading to landfill where that's safe to do.

The Hon. ROD ROBERTS: I have one question that you gentlemen may or may not be able to answer. Most local government, particularly here in metropolitan Sydney, uses contractors to move the waste rather than councils do it themselves. It has become obvious that e-waste, being batteries and even down to as small as vapes, are becoming an issue in compactor trucks and catching fire and toxic emissions and that sort of stuff. Has anybody done any studies on what would happen if they were thrown into an incinerator?

KHAL ASFOUR: I can't answer that.

The Hon. ROD ROBERTS: As I said, you may or may not be able to answer it.

KHAL ASFOUR: I don't have that expertise, but we've seen what happens with batteries in our trucks. We've had a number of trucks—fire starts and the safety of our staff comes into question.

The Hon. ROD ROBERTS: It's toxic fumes and stuff isn't it, Councillor?

KHAL ASFOUR: Yes, absolutely. You don't want to be driving one of our trucks and a fire starts in the back. It's a problem. In terms of what happens if you throw it into an incinerator—

DAMIAN THOMAS: In terms of studies, we might take that on notice.

The Hon. ROD ROBERTS: Sure. As I said, it wasn't to put you on the spot. I didn't know if you could answer it. You're in local government, and it's one of your areas of expertise—rates, rubbish and roads. I thought I would just ask, that's all.

The Hon. NATASHA MACLAREN-JONES: Thank you for your submission. I want to explore a little bit more about the circular economy and, in particular, the diversion strategy around waste. Could you outline how that currently operates—I understand that in your submission there is a target of 80 per cent of waste to be part of that—and elaborate a little bit more in detail on that?

KHAL ASFOUR: I'll pass that one to Mr Thomas.

DAMIAN THOMAS: That's a priority that local government shares with the State and Federal governments, which is to transition to a circular economy and keep materials in use for a longer period of time. That's through ensuring that waste and recyclables are managed in accordance with the waste hierarchy, noting that lower order options, which include energy from waste, can have an adverse impact on human and environmental health.

The Hon. NATASHA MACLAREN-JONES: How is that target being met at the moment across New South Wales?

DAMIAN THOMAS: Recycling is improving. The FOGO mandate will help that to happen and to keep more materials in that circular economy for longer. In terms of the detail of the 80 per cent target, we might take that on notice.

The Hon. NATASHA MACLAREN-JONES: I suppose that then takes us to the next question: Where does waste for energy fit in that mix? For the organisation to be financially viable in their investment, they require a certain amount of waste. How would that all fit?

DAMIAN THOMAS: One of the concerns at the moment is that waste to energy may result in increased costs for ratepayers. That is because, in the current regulatory and market environment, it's not cost competitive with landfill at the moment. It is cheaper, even with paying the waste levy, to dispose of waste in landfill rather

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than send it to an energy-from-waste facility. Councils have expressed concern. They are very eager to ensure that the waste levy is not increased to artificially increase the attractiveness or viability of energy from waste.

The Hon. NATASHA MACLAREN-JONES: Another question which you may or may not be able to answer is around transport costs. Has any modelling been done on what the current cost of transporting waste from some councils to landfill sites is now, on what it could be if we had to take it further to regional and on what impact that would have on councils?

KHAL ASFOUR: I think it would depend on where the site is located in regional New South Wales. It would impact each council, depending on how far away they are, differently. It's really hard to gauge and give a number in that regard.

DAMIAN THOMAS: Councillor Asfour touched on the road damage from the massive number of truck movements previously. What we have claimed previously is that it's important that where energy from waste is explored, it should be done in consultation with councils. Where there are existing transport networks, for example, they should be explored as well.

The Hon. NATASHA MACLAREN-JONES: Do you know if any of the individual councils might have done some work about their costs or the current cost of transport?

DAMIAN THOMAS: I don't have that information.

KHAL ASFOUR: We can take that on notice. From most of the submissions and councils that we have spoken to, I'm not sure if that work has been done. Again, it depends on if there is a rail line in the regional area, how the waste is going to move and where it's going to be located—that sort of thing. There are all these questions that make it hard to find a definitive figure.

The Hon. NATASHA MACLAREN-JONES: The other question I had was in relation to your recommendation 19, recommending that EPA and Infrastructure NSW explore alternative sites with interested councils. Has any of that work been done? Is there any idea of where the sites could be considered?

DAMIAN THOMAS: I'm aware that some councils have expressed concern that the geographic limitations of energy from waste are too restrictive. That's not to say that those councils are putting up their hand and calling for these facilities themselves, necessarily, but that there should be more work done, potentially, on looking at where these facilities are safe to be and where they may not be safe—or appropriate to be, rather. There's a view that there's an inconsistency on the one hand, with the Government saying these facilities are safe and necessary for some regions but inappropriate for other regions.

The Hon. EMILY SUVAAL: Just following on from that, Mr Thomas, are you able to let the Committee know or perhaps take on notice which councils have expressed some of those concerns in terms of having the current ring-fenced approach? We heard certainly earlier from some witnesses about having councils that were interested in exploring those available options. Your recommendation 16 states:

That the NSW Government commit to transparent, criteria-based site selection processes that balance urban and regional impacts.

Is it the position of LGNSW that the current framework, whereby we can only build energy from waste in these isolated number of regional areas, is something that should be revisited? Is it the case that you think that the energy-from-waste facilities should be looked at elsewhere?

KHAL ASFOUR: Yes, is the view. Why is it that only some areas could potentially get a facility and others not be in the mix? It doesn't make any sense. I think if it was opened up and councils and their communities could make those decisions based on what they think is best for them, then it makes more sense. There's no need, in our view, for it to be restricted to certain areas that have been marked. It should be open for all. If there is a local government area that's prepared to take it on and go through the process of social licence and go through the process of bringing the community on board, then why should they be excluded?

The Hon. EMILY SUVAAL: Should we look at building or extending the existing landfills that we have as well? Is that something that your member councils support?

DAMIAN THOMAS: I think landfill will always have to be part of the waste hierarchy. It's obviously undesirable; it's the least desirable step of that hierarchy. But overarching these comments is that energy from waste should remain the last port of call before landfilling. It's an undesirable solution and should only be used for those non-recyclable materials at the very end of their journey. But, as Councillor Asfour said, where those locations do have social licence, where they're supported by the community and that social and community trust has been gained, those locations should be explored further.

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The Hon. EMILY SUVAAL: Our current projections show that we will run out of landfill in 2030. They also project that even if we halve the amount of waste produced per person, we're still going to end up in that same position where we're running out of landfill. If we're in a situation where people's red bins literally cannot be collected because there's nowhere for that red bin waste to go, what should the State Government do?

KHAL ASFOUR: I don't have an answer except to say that we're not confident that the technologies in energy from waste that are available to us today are the solution. They're not going to be able to deal with the problem. Having one energy-from-waste facility in one part of New South Wales isn't going to solve that issue. We think that, obviously, it's something that we all need to do, and education is important to make people halve their waste. But, at the end of the day, energy from waste isn't the solution either. It should be part of the solution, along with any other new technologies that might come to fruition, obviously educating and campaigning on the need to do that, because not only will landfill run out but the cost on residents and ratepayers will also increase substantially.

DAMIAN THOMAS: As Councillor Asfour said, it comes back to that social licence as well. Where an energy-from-waste facility is proposed for a region—and this was a matter that was discussed at our annual conference just three weeks ago—those facilities should be limited to one per LGA, where it's a large-scale facility. It's really important to make sure, where those facilities are in place, that the community is on board and that there's benefit-sharing arrangements in place and the host communities receive economic, energy and infrastructure benefits. Some councils have put forward the view that there should be a per tonne community hosting levy as well. Parkes Shire Council has suggested this could be set at \$15 per tonne, for example, to compensate the community and make sure that the community does benefit from the facility as well.

The Hon. EMILY SUVAAL: Many regional councils, as you would be aware, are already trucking their waste interstate. Is that part of a long-term viable solution?

DAMIAN THOMAS: In general, no. Then it comes back to our principle that waste should be managed as close as possible to its source.

The Hon. PETER PRIMROSE: Given that energy from waste is used extensively in a number of countries, can you comment on what your concerns are with those proposals and the existing operations?

DAMIAN THOMAS: One of the comments that we've made in our submission and previously is that these facilities have not been tested under Australian conditions. What we mean by that is the Australian waste stream is made up of different materials, with a different constitution of materials, for example, and emissions disperse differently with different climate or weather conditions as well. It would be of great benefit to councils and their communities to have more rigorous testing and an independent evaluation to demonstrate the performance of this kind of technology and infrastructure under Australian conditions.

The Hon. PETER PRIMROSE: In essence, given the choice between finding more places—more holes—to put landfill in as opposed to energy from waste, you'd be advocating that there be more landfill?

DAMIAN THOMAS: Our position is that energy from waste should be the last port of call before landfill. Landfill is the least desirable.

The Hon. PETER PRIMROSE: We know we're running out of landfill, but you're proposing we find more holes?

DAMIAN THOMAS: No, I don't think that's the position.

KHAL ASFOUR: I think the position is that it needs to be a holistic approach. It needs to be energy from waste where community supports it and understands it. If the landfill projections are correct, then energy from waste isn't the solution either. It needs to be a holistic approach, along with education, with campaigning and with the community across the State understanding the impacts and the overall position that the State finds itself in, including what's happening overseas. I'm sure we've all travelled to cities where there are incinerators all over the place. Japan is one that I've seen firsthand. Again, as Mr Thomas said, the conditions and the type of waste we have in Australia is different from other countries. That plays a significant impact on how the waste is disposed of.

The Hon. PETER PRIMROSE: I'm just trying to get it clear in my head. Given the time frames we're talking about, and we've been given evidence from the Government—and it's been followed up by a number of people—that we'll be running out of sites for landfill and that it will take about four years, as we heard earlier today, for an energy-from-waste facility to be developed, so people need to take action pretty quickly. Which are you advocating for?

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KHAL ASFOUR: We're advocating for all of them, in that if there's an opportunity for energy-from-waste facilities to be built in New South Wales, then that needs to happen, as long as the technology is proven independently, the community is on board and it is going to result in a substantial benefit to the State in terms of waste; that's great. But we have to look at Western Australia as an example, where there's been investor losses and where there's been significant burdens on councils to save energy-from-waste facilities, because they weren't viable or weren't working to what was promised—we don't want to fall into that trap either. I guess the answer is that, if there's energy-from-waste facilities, if the council's on board and the community is on board, we support that. But that's not going to be the magic bullet, so there are other solutions that need to be looked at too.

The Hon. PETER PRIMROSE: What are they?

KHAL ASFOUR: I'll ask Mr Thomas to elaborate. Again, it's looking at the cost of landfill, where we put the landfill, other States and their potential. All those things are open to the State to look at.

The Hon. PETER PRIMROSE: Can I just confirm then that the choice is between energy from waste, and landfill, whichever works best? Is that what you're saying?

KHAL ASFOUR: I don't think they're the only choices, is what we're saying.

The Hon. PETER PRIMROSE: If I may just clarify, what are the alternatives?

KHAL ASFOUR: We are saying educating the community on their recycling methods, their habits, what goes in the red bin, and the FOGO concept. All of those things form part of this. It's not a black and white, either/or—landfill or energy from waste. It's a matter of bringing the community on board, understanding what the benefits will be and what the solutions are. Building two or three energy-from-waste facilities over the next five years across the State isn't going to solve the landfill problem, and I don't have the solution to that. That's part of why we're here.

The CHAIR: In your submission there is a summary of recommendations under "Technology, Innovation, and System Integration". I'd like to expand on recommendation 1 more broadly rather than just those subheadings. The recommendation is:

That the NSW Government works with all impacted councils and responds effectively to any concerns raised in each case.

Are you aware of the New South Wales Government working with the already potentially impacted councils to address the concerns that have been raised from that perspective?

KHAL ASFOUR: We understand Veolia Woodlawn is a current proposal in Goulburn—Tarago—and they're at the pre-DA stage for Parkes Energy Recovery. As to the Government and communication, I'll pass that to Mr Thomas.

DAMIAN THOMAS: Having read through many of the councils' submissions, I think it's clear that, while there has been some engagement and some efforts to achieve that social licence for those developments, there's a lot more that could be done. I think that comes through really strongly in the councils' submissions. It would be really important that the Government engage in community engagement from the early stages of proposing these kinds of facilities, make sure that communication is meaningful, and make sure that the community knows not only that the facilities can be done safely and can be done well but also that the community will benefit from this kind of infrastructure as well. I think that is a really important task that you've highlighted there.

The CHAIR: That also points to if the Government can demonstrate that and provide such information to regional communities, then such information and such a position should also be able to be communicated to communities in metro areas equally?

KHAL ASFOUR: Absolutely, yes.

The CHAIR: Just coming to and building further on the point raised by the Hon. Peter Primrose, it appears that the Government isn't on track to meet its recycling and waste diversion targets, as outlined, by 2041. You have identified alternatives such as gasification and pyrolysis. From the point of view of Local Government NSW, we need to be broad in how we look at and tackle the ongoing problem rather than closing potential avenues. By suggesting that EFW is a lower order option, do you think that there should be a prioritisation of the waste hierarchy, as such?

DAMIAN THOMAS: Yes. Councils do draw a distinction between the mass burn incineration facilities versus newer, cleaner alternatives such as pyrolysis or gasification or biochar, for example, and particularly where the waste streams for those facilities are organic materials that are not contaminated.

The CHAIR: That's one of the other things that has been pointed out today: When it comes to pyrolysis and gasification, at this point in time that can't address residual waste, which is a quite specific area as well, so we

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do need to be broad in how it may or may not be addressed. LGNSW is of the position that the breadth of view or scope is a really necessary thing, going forward, for the waste management strategy.

KHAL ASFOUR: I'd agree with that, yes.

The CHAIR: To come to the final point in that particular train of questioning, is part of the problem currently fragmented governance across waste, energy and planning more broadly? Does it need to be more comprehensively looked at and, to a degree, reformed in terms of putting forward how we can come up with solutions? In the end, we all want solutions to what we know is a growing problem, but is part of the problem that the existing system is so fragmented?

KHAL ASFOUR: I'd agree that it's a challenge for all levels of government and for the community to find a solution to this problem. Is it fragmented? I'll pass that to Mr Thomas.

DAMIAN THOMAS: It's a problem that governments are grappling with internationally and in Australia. I think there's no easy solution. We've talked about the suite of solutions that may help to resolve this problem, but there's no one lever that we can pull to address it.

The CHAIR: There's not a silver bullet, absolutely. It's about keeping all options open, shall we say. Thank you, gentlemen, for coming in and for your evidence. I think you did take some questions on notice. The secretariat will be in contact in relation to further information being provided.

(The witnesses withdrew.)

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Mr TONY CHAPPEL, Chief Executive Officer, NSW Environment Protection Authority, sworn and examined

Mr STEPHEN BEAMAN, Executive Director, Operations, NSW Environment Protection Authority, sworn and examined

The CHAIR: Welcome, and thank you for making the time to give evidence today. Would either or both of you like to start by making a short opening statement?

TONY CHAPPEL: I acknowledge the traditional custodians of the land we are meeting on today, the Gadigal people of the Eora nation. I extend my respect to their Elders past and present. The EPA is New South Wales' independent environmental regulator. We protect the health of our environment and communities using a range of tools and approaches, including licensing for industry, programs to support better waste management, and ongoing reforms across multiple domains including climate change. The New South Wales Government has made a submission to the inquiry that highlights the EPA's role as a strong regulator in the energy-from-waste sector, the ongoing pressures and opportunities for waste and resource management and recovery, along with ongoing commitments to a circular economy.

Continuing to develop our circular economy is a major priority for the Government. There has been much achieved to date, and many reforms have commenced in the last 18 months and are now underway, including in respect of the settings around the waste levy, the Return and Earn scheme, food and garden organics, problematic plastics, and enhanced and extended producer responsibility through New South Wales product life cycle reforms. The management of residual waste in Sydney remains a looming problem, as it is in a number of regional areas.

In October the Government released the first chapter of the Waste and Circular Infrastructure Plan, which provides a whole-of-government approach to reducing the barriers to investing in and planning critical waste infrastructure. The first chapter of the plan is focused on managing Greater Sydney's residual waste and avoiding Greater Sydney's imminent shortfalls in landfill capacity. The plan's actions will streamline the planning processes to unlock more capacity at existing priority landfills where it is necessary to avoid imminent landfill shortfalls facing Greater Sydney; update the energy-from-waste regulatory framework to better enable our waste infrastructure; and strategically plan for the waste infrastructure needed for essential services to be reliably and affordably delivered for Greater Sydney into the future.

Energy from waste is an important part of the mix of solutions to ensure that we implement our waste hierarchy, whilst also having sufficient capacity and resilience in the systems that manage our residual waste. To be clear, energy from waste is not a panacea, but it has a legitimate role to play as part of our waste hierarchy. It is part of circularity and will contribute to our resource recovery targets. Energy from waste captures a broad range of technology types, a number of which are also likely to have a significant role to play in the development of our future circular and low-carbon economies, such as anaerobic digestion and pyrolysis to produce renewable fuels, process other agricultural waste and produce materials such as biochar.

I also acknowledge that there is community concern about combustion-based technologies in the energy-from-waste sector. I want to assure the community that we have a strong framework in New South Wales to protect both communities and the environment. Whilst the location of the energy-from-waste precincts is a matter for government, energy-from-waste facilities can safely be located within large population centres, as many are around the world, including in Paris, Vienna, Copenhagen and Tokyo. Just like any large industrial proposal or landfill, energy-from-waste facilities are subject to New South Wales's rigorous development assessment process, strict emissions standards that align with global best practice and ongoing adaptive regulation, through EPA licensing, to ensure that we deliver appropriate protections for facilities and the communities that neighbour them, no matter where they are located.

The CHAIR: Mr Beaman, do you have anything to add?

STEPHEN BEAMAN: No, thank you, Chair.

The CHAIR: I'll start with you, then, Mr Chappel. Tomago and west Lithgow have just been put back onto the list of proposed energy-from-waste locations. Is that correct?

TONY CHAPPEL: When you say "back onto"—

The CHAIR: Sorry, west Lithgow was previously on that list, so Tomago has been added.

TONY CHAPPEL: That's right. That's my understanding.

The CHAIR: Why? What's the process behind that?

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TONY CHAPPEL: There are a range of factors that go into the assessment of any potential precinct for this type of activity. One of the relevant factors is access to infrastructure, the rail network and various intermodal connections. Another is connectivity and capacity in the electricity grid. The third is, at the precinct scale, the ability to enable broader circular economy and industrial investment objectives. Ultimately, the locations were also informed by the level of interest from participants in the sector. The final decision on the shape and nature of those precincts was a government matter. It's really a policy question that was decided at the Cabinet level.

The CHAIR: You're saying that it was informed—to a degree, at least—by participants in the sector. What about community input, feedback and engagement? To what degree, if any, has that occurred?

TONY CHAPPEL: Very significantly, Chair, going back 15 years to when these frameworks were first developed and then as they've been refined through various government decisions. Certainly the special activation precinct concept that the former Government progressed involved extensive engagement, led by our colleagues in the Department of Primary Industries and Regional Development. For the EPA, as we've developed our input into these processes, we've conducted, again, extensive engagement and consultation, including most recently to inform this updated landing of settings. That included open processes with the community and various other channels as well. The important point about the commercial players that I want to make is we didn't want to go out to consult communities on precincts that might have no potential to progress or proceed. It's important we have a meaningful consultation with communities so we can understand their feedback and take that into account.

The CHAIR: You used the terms "extensive engagement" and "meaningful". Obviously that's debatable because many of the communities that are potentially impacted are suggesting it's the opposite of that. Is any of this extensive engagement and feedback publicly available?

TONY CHAPPEL: I understand it is.

The CHAIR: All of it?

TONY CHAPPEL: I'm not sure about the various community submissions, but I'm confident they are available. I'm happy to take that on notice.

The CHAIR: So you'll take that on notice and take a look at that. Obviously that comes to the question and the heart of transparency around all of this, which is many of the concerns being advanced by communities—that they feel that the process hasn't been transparent and open enough. If you're able to take that on notice, I'll move on. Why was Richmond removed from the list? Was that on the Minister for the Environment's say-so?

TONY CHAPPEL: Ultimately all of these precincts were decided by government at the Cabinet level. The EPA's advice into the process was that there was no viable proponent or pathway, when you consider all the factors that go together to make these projects commercial or viable, that was likely to occur in that region. But government made a decision, as it did with all of those precincts.

The CHAIR: So you're suggesting that, because it's been made by Cabinet, that information on how and why those decisions are made is not publicly available.

TONY CHAPPEL: I think I've laid out the parameters that go into how the EPA provides advice into that process. But, yes, absolutely, in terms of the ultimate decision—as the previous decision by the former Government on the precincts themselves—those are Cabinet decisions that are not EPA matters.

The CHAIR: Let's look at the EPA submission to the Cabinet in relation to that. Is that publicly available?

TONY CHAPPEL: No, I think the Cabinet convention's very clear, that advice from agencies to inform a Cabinet decision is covered. It's confidential and remains so.

The CHAIR: The submission states that energy-from-waste facilities can be managed within existing systems and that compliance and enforcement are the key. But when you look at, if we take one example, the Tarago site, the EPA has already had significant difficulties dealing with issues at that already existing facility. Is that not correct?

TONY CHAPPEL: Yes, it is, but that's not an energy-from-waste facility. I think that—

The CHAIR: No, it's not, but if we're talking about an energy-from-waste facility that is also to appear there, what I'm suggesting is that if we're having breaches and concerns and issues with the facility that's already in place, how can the EPA guarantee or provide any certainty and confidence to those communities that there won't be similar or additional problems that aren't foreseen at this point in time when it comes to another facility which will be energy from waste?

TONY CHAPPEL: I understand the question. I think what you're really pointing to is some of the very significant challenges posed by some of our major landfills and the complicated geology and geomorphology and

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their vulnerability to extreme weather events, all of which have made managing that site problematic. But the EPA's been taking a very strong regulatory posture to drive improvements, even beyond those that were initially anticipated when the planning system considered that project based on projected rainfall, which has been well exceeded. But the fundamental point is, with appropriate settings—as we have in New South Wales—these facilities are much more robust and resilient to those extremes of weather. They're not nearly as bespoke in the complexity of the engineering challenges they have to solve, and they operate safely and to a high standard—including by the operator of Tarago—in other parts of the world and have done for many years. All of that gives us confidence that we will be able to regulate them to a very high standard and ensure that any impacts to the community are appropriately managed.

The CHAIR: A high degree of confidence—can you give a guarantee?

TONY CHAPPEL: What I can guarantee is that if there are exceedences or any emissions that breach the relevant standards or jeopardise community or environmental health, the EPA will act and will do so immediately, including, if needed, to suspend the licence or halt the operation. All of that can occur with a facility of this kind in a way that's much more challenging when you compare that to a landfill, where the very significant odour impacts, the methane emissions, the leachate—they're not something that the regulator can just immediately step in and halt. They require very significant additional interventions, often, as we've seen in various parts of the State in recent years. The nature of the facility as an industrial facility, and given the history of this technology and that our settings are very much aligned to very high standard jurisdictions like the European Union or the United Kingdom, and our experience in managing those kinds of facilities, all give me that confidence. My colleague Mr Beaman can perhaps just outline the way the five gates of quality control that any—

The CHAIR: No, that's fine. We don't need that level of detail. You can provide that on notice if you'd like. I know that some of my colleagues will further explore that. I just want to take a slightly different angle to allow them the opportunity to do so. You maintain that it's about strict regulation, that you have the highest confidence, that it's all going to be in order and that everything's going to be fine. If so then, ultimately, geographic location shouldn't be the primary determinant of where such a facility might go, outside of the parameters that you nominate in terms of accessibility and connection to grid et cetera. Limiting it to four regional locations is clearly not the primary objective if it is going to be monitored by such strict regulation and guidelines and a framework.

TONY CHAPPEL: I would say I'm very confident that wherever one of these facilities were to be progressed, if it is approved through a planning process then it would be appropriately licensed, and the community of whatever kind could be extremely confident that their wellbeing and the quality of their environment is protected. As I mentioned, the design of a framework with precincts, and the location of those precincts, are really Government policy decisions.

The CHAIR: I appreciate that response. When it comes, though, to the—

The Hon. EMILY SUVAAL: Chair, just indicating we do have some questions.

The CHAIR: Yes, I'm aware.

The Hon. EMILY SUVAAL: I'm mindful of the time.

The CHAIR: I think we're a little bit early, so we can—

The Hon. EMILY SUVAAL: Yes.

The CHAIR: Thank you. I believe I'm the Chair. I'll make sure that everyone gets their opportunity. On air emissions reductions, and just harking back to the strict regulations, previously and on numerous occasions, the Government has stated that it's going to be the strictest ever—that we're going to be setting the bar when it comes to such things. Now that appears to have been softened, to a degree, and it is going to be aligned with the world. Is that what's happening? Are we softening the restrictions around the emissions reductions?

TONY CHAPPEL: What the Government has announced is some refinements to the policy framework that will enable, for example, agricultural waste to be processed in a way that I think the previous framework precluded. We're really bringing together our group six standards and I think it's called the BREF framework in the UK, which is a proven, viable framework of extremely high standard. My colleague Mr Beaman might just give you a bit more context.

STEPHEN BEAMAN: Section 45 of the Protection of the Environment Operations Act, which is the thing that we have to take into consideration if and when we grant a licence, has two important limbs to it. One is what's the pollution caused or likely to be caused and then the other is—these are the exact words—the practical measures that can be taken to mitigate that. There are three gateways we have to pass through. Section 128 of the

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Act says you have to comply with the clean air regulations. We have what we call group six. Depending on the activity, that sets, for each pollutant, what the limit is. What we've done is compare those to what is called the European ID. It's the incineration directive for the EU, dated 2010. And then they did a document, the EU, and it was the best available technology reference guideline, which is called the BREF, and that was in 2019. The regulation framework that we have in New South Wales is actually consistent with world's best practice.

The CHAIR: Again, world's best practice, not necessarily elevated beyond that. Thank you for the answers.

The Hon. ROD ROBERTS: Chair, may I rudely interrupt? I have one question and one question only. As you're aware, I have a commitment that I need to get to. Mr Chappel, I draw your attention to the EPA website, yoursay.epa.nsw.gov.au/energy-waste-regulation. It states:

The Draft Regulation proposed changes to energy from waste in NSW to:

- improve certainty to communities and industry around acceptable locations of facilities.

The part that I'm interested in is the second dot point, which states:

- apply the precautionary principle where there is a greater risk of harm to human health due to proximity to high population areas (now and into the future), and in areas where there are regular exceedances to air quality standards from existing sources.

Can you explain to me what the precautionary principle is identified in that document on your website?

TONY CHAPPEL: I don't have that in front of me. I'm happy to take a look at it. I'm not aware of any content like that that's currently on our website. That may be a piece of content that was on our website. I'm very happy to take a look at it.

The Hon. ROD ROBERTS: Chair, may I approach the witness and hand them a copy of the website on my phone at the moment that I've just looked up?

The Hon. EMILY SUVAAL: Are you tabling that?

The Hon. ROD ROBERTS: I can't table my phone. Let's see if the witness has any objection to looking at it first, and then I have a printed document that I can circulate to everybody. I only have one copy of it. Do you have any objection?

TONY CHAPPEL: I'm happy to take the printed document. I'm just not sure.

The Hon. ROD ROBERTS: This is not a trick. We're not here to trick you at all. This is the EPA's website. I've just looked it up now. It says, "Energy from waste", "Why it matters?" et cetera. Dot point two states:

- apply the precautionary principle where there is a greater risk of harm to human health due to proximity to high population areas (now and into the future), and in areas where there are regular exceedances to air quality standards from existing sources.

There are a number of dot points. That's the only one I'm interested in.

TONY CHAPPEL: That's not some cache thing? That's current?

The Hon. ROD ROBERTS: That's current. If you Google yoursay.epa.nsw.gov.au/energy-waste-regulation, that's what comes up. It relates to the regulation as of 8 July 2022. In that case, can you explain to us then what the precautionary principle is?

TONY CHAPPEL: I think that's probably a misapplication of the precautionary principle. The precautionary principle states that cost-effective action to mitigate risk should be taken, notwithstanding an absence of complete certainty. I certainly haven't personally seen that content before. I'm not denying that it's there.

The Hon. ROD ROBERTS: Without it being a trick, could you take it on notice, then, perhaps, and come back to us? I think, from your own document, it doesn't talk anything about what you've just said; it talks about the greater risk of harm to human health.

TONY CHAPPEL: That might be some sort of old legacy content that predates the last few years and, certainly, my time in this role. I do think that, when the former Government initially made its decisions, they may have been framed slightly differently. What I can say is that the science is unequivocal. Our regulatory standards are extremely high. Wherever these facilities are located—anywhere in New South Wales—I am confident, and the EPA is confident, that the community would not face additional risk. Do you want to add to that?

STEPHEN BEAMAN: It's the application of the precautionary principle in this case. A lot of people get very focused on what the emissions are at the stack, and we totally get that. There are actually some other gateways you have to go through. You actually have to comply with the emission limits within the stack. That goes on the

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licence. As part of the assessment, we look at something called ground-level concentrations—what is the impact in the local environment? That takes into account all the existing sources of pollutants in that environment. It might be particle matter from bushfires, or it might be dust from unsealed roads.

When they do the inventory work to do the air assessment modelling at a regional level, they'll look at all the possible emission sources right across that community. You're looking at what the cumulative impact is when you add another industry into that airshed. That's the idea with the precautionary principle. The third layer of that—I understand the Committee had Dr Wright on this morning—is then you do a human health and ecological risk assessment. That is the risk assessment about what risk does it pose to people and the environment. We use those three tools as the way that we work our way through the application of the precautionary principle.

The Hon. ROD ROBERTS: That's it, thank you. I'll leave you that document.

Dr AMANDA COHN: Thanks so much for being here. My first question relates to some of the questions I asked Veolia this morning about their previous breaches of the licence for their existing facilities at Tarago. There was some disagreement, as I will characterise it, about the nature of those breaches. I am aware of at least nine. In the view of the EPA, what was the nature of the breaches at the existing site?

TONY CHAPPEL: They're serious. We've been acting very strongly to address some of those challenges that the operator has had at the site. I think my colleague, who leads our regulatory team, can probably add some detail.

STEPHEN BEAMAN: I think I'd say to the opening comment and almost to the comment the Chair was making earlier on can we guarantee 100 per cent—that's not our role. We're the regulator. Our job is to hold people to account. When we do identify noncompliance, then we view those noncompliances seriously and view it through the lens of our published *Prosecution Guidelines*. From our perspective, noncompliance is not a negotiable thing, and it's not an arbitrary thing. We take it seriously when we detect it. You're right: Since 2013, I think there is about nine penalty notices that have been issued for that site.

You can attack the problem of noncompliance a couple of different ways. We've had issues with that site with odour that has impacted the local community. That's just completely unacceptable. Part of that odour issue has been too much excess water on the site. We'd just gone through that period of drought around the millennium—the millennium drought—but in the last four or five years we've been in a very wet period. That site has really suffered under having too much water. That generates landfill gas, which is odorous. From our perspective, it is not acceptable. We've been not working with, but requiring Veolia to fix it.

Dr AMANDA COHN: In your view, the penalties that you've got to enforce action or enforce compliance—are they adequate? Last year there was a penalty for failure to comply with a clean-up notice.

STEPHEN BEAMAN: The maximum for us that we have in our statute is \$30,000. I think for an on-the-spot fine, that is a significant contribution. The Parliament earlier this year, as in years gone by, has increased our maximums for what we call our tier 2 offences up to \$2 million. I think the fines in New South Wales are significant. I think they are set about right.

Dr AMANDA COHN: I wanted to ask you specifically about dioxin pollution. This has caused significant community concern. I'm particularly interested in the submission from the Public Health Association that talks about risks to human health to people who live outside the area, particularly from bioaccumulation and ingestion from people outside the region. In terms of your modelling or regulation, to what extent have you taken into account the risk of accumulation in the soil and impact on people who don't live in the area?

STEPHEN BEAMAN: There's a couple of things. I can answer that one technically—what you do at the plant and then how you do the assessment work. I might do it the other way around. There are national guidelines published by enHealth in 2012. It's the environmental guideline for doing risk assessment. There's a national guideline used, no matter what the activity is—energy from waste or any other industrial activity—that sets the framework about how you do risk assessment. They're not done by a proponent willy-nilly. They can't come up with their own methodology. There's a standard Australian methodology. There's also an Australian standard methodology called the Australian exposure standard. It tells you how long people are in the community, how much food they drink and how much water they consume. That risk assessment looks at all the contaminants and a list of the range that is actually in the regulations, but also does dioxin. Dioxin is actually considered as part of that suite when we do the human health and ecological risk assessment work.

One of the treatment processes for dioxin that's well established, which is the technical part of these plants, is operating the combustion chamber at greater than 850 degrees for more than two seconds. That will actually break down any of the chlorine-forming chemicals that form dioxins and furans, if you maintain that very hot temperature combustion. You then run it through activated carbon and then through a baghouse. The pollution

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control technology that sits on the plant actually goes to minimising the risk of dioxins being generated by these types of facilities. Those controls have matured to a point; they didn't exist in the past. When we talk about incinerators and people had dioxin issues—which we certainly did when I joined the EPA in the '90s, with the Waverley Woollahra incinerator. That had dioxin issues because it didn't have these modern pollution control treatments of the flue gas.

Dr AMANDA COHN: You mentioned chlorine, which has jogged my memory of another question I wanted to ask about Veolia and forgot. In 2022 the then Department of Planning and Environment indicated that at that time, for the Veolia Tarago proposal, there was insufficient information provided to demonstrate how the technical requirement to restrict the chlorine content of the waste feedstock to less than 1 per cent would be met, and how compliance will be achieved, monitored and reported. Has that information now been provided to you?

STEPHEN BEAMAN: No, I think that was all the—my understanding is Veolia put their application through the planning process. All the agencies gave their comment, and I'm not sure that we've seen the response to submissions yet.

Dr AMANDA COHN: Thank you. The air pollution control residue—so things like bottom ash—I understand in other jurisdictions has been used in road bases and other things. In your view, do we have the right parameters for safe storage and re-use of those?

STEPHEN BEAMAN: There are two types of residue that are left from these plants that make up about 20 per cent of the residue input. Some 100,000 tonnes go in. There are about 18,000 to 20,000 tonnes produced. One is called incinerator bottom ash. That tends to be the more granulated stuff, and that's mostly it. That's about 18 per cent as by-product of the process. Then there's something called air pollution control residue, which is the particulate matter that's caught in the baghouse. There are two waste streams here. The original proposal, as I understand, from Veolia was to landfill those. But in other jurisdictions, particularly in the UK, they've been allowing the re-use of those materials.

We've been looking at what's happening in WA. There are two plants operating in WA, East Rockingham and Kwinana. They're producing the material out of that plant, and we've been looking at the quality of that material. The issues with those materials tend to be heavy metals. It's the concentration of heavy metals, because that's a bit of pollution control equipment that stops it going up the stack. We're keeping an open mind. What we're going to do is establish a working group under the heads of EPA so that we come up with an Australia-wide, consistent approach to the regulation of IBA and APCR, just so we actually have a consistent approach that's protective of human health and the environment. We have a regime in New South Wales, which I think Ms Sloan from the waste management association talked about this morning, called resource recovery orders and exemptions. If you want to beneficially use this material, you'll need one of those approvals from us anyway.

TONY CHAPPEL: It would have to go through environmental testing.

STEPHEN BEAMAN: Assessment.

Dr AMANDA COHN: It's good to hear all this quite comprehensive work is underway. What's the timeline of that, relative to the approval process for potentially the Veolia project and the Parkes Energy Recovery project?

STEPHEN BEAMAN: We haven't seen it. Like I said, the application from Veolia hasn't been resubmitted for planning and for reassessment. We're starting this work, I think with the heads of the EPA, in the second half of this year. We've already started that work. We'd be looking at next year sometime, having some sort of clear national approach to the way we deal with these materials. I think that's going to be well within the timeframe of any approval process. We're very conscious to make sure that that material, if it's going to be used, has got to be fit for purpose and safe.

The Hon. EMILY SUVAAL: I want to ask some questions generally about the waste and recycling efforts that we've got here in front of us in New South Wales. Obviously we've seen the State of the Environment report in terms of waste per person increasing year on year. Our landfill is projected to run out of space in 2030. What would the EPA suggest is the solution?

TONY CHAPPEL: It's really pleasing that the Government has adopted a number of the solutions the EPA has proposed to address these challenges. The Product Lifecycle Responsibility Act, which the New South Wales Parliament recently adopted, and which is now progressing in various other jurisdictions, allows what we call enhanced producer responsibility and product stewardship from the design of products all the way through to how they deal with their end of life and get re-used. The Government is progressing a regime for batteries and also solar panels as the first two priority areas. But those are incredibly potent tools that can cost-effectively divert very large quantities of waste from landfill, as you work product by product or sector by sector. The food and

CORRECTED

garden organics mandates, which were also enacted this year, will divert up to two million tonnes of material, we estimate, annually by 2030, with very significant emissions reduction benefits as well, because we can re-use a lot of that food and garden material in composting and other organic products. That's a very significant intervention as well.

On packaging reforms, obviously the Commonwealth is leading some work there to develop what we expect to be mandatory product stewardship arrangements in that space. But New South Wales isn't waiting for that. We've also progressed, through the plastics plan that was recently announced by Minister Sharpe, a number of initiatives to deal with these challenges. The ongoing support through the waste infrastructure plan, which is the first plan of its kind—to really map out the material flows statewide, both in Sydney and in the regions, of not just the residuals but all of the other materials—will allow us to quantify the infrastructure needs and where it needs to go, and support it through the planning system with the interventions announced. The waste levy is another key tool that plays a role. That's under consideration in terms of how to optimise that. All of these things together help to give us the systemic shift to really address the landfill crisis.

The Hon. EMILY SUVAAL: We had some witnesses today talk about the need for that waste infrastructure planning, or at least having a plan for waste as part of any of the new developments or housing or the like. To me, it sounds like that is underway, but we have not had that in place previously.

TONY CHAPPEL: No, that's correct. It has been something that hasn't progressed previously.

The Hon. EMILY SUVAAL: In terms of the waste that we've got from building infrastructure and new housing, where should that waste go? We understand that's a significant proportion of the waste that we're facing.

TONY CHAPPEL: It is, and a very significant proportion of that stream is currently re-used and repurposed. If you're doing construction, it's readily available—recycled bricks and other material. I think much of that can be productively re-used. It does become, in terms of the benefit when you push that all the way up, quite cost prohibitive and adds really macro-economic costs that aren't justified in environmental terms, say, if you try to capture 100 per cent of that material. But, certainly through design standards, there's a real opportunity to improve the sustainability and re-use of material in those streams. Would you add anything more in terms of the metrics?

STEPHEN BEAMAN: I watched a little bit of this morning and there seemed to be a bit of confusion. Take the Veolia proposal, for example—it's the waste-y language of this. We use the expression MSW, which is municipal solid waste. Think of that as being your red bin. There are three waste streams. The other is C&D—construction and demolition, building waste. Then there's something in the middle called commercial and industrial, and that's the waste that comes from businesses. It's our expression—commercial and industrial. So these plants aren't envisaged and won't be licensed to—what people think is taking in hazardous industrial waste. It'll be material collected from restaurants, panel beating shops and a whole lot of furniture businesses. It's the general waste stream. I just wanted to make sure that the Committee was clear about how the use of our language doesn't line up with the average, ordinary meaning of industrial waste.

The Hon. EMILY SUVAAL: Given, Mr Chappel, some of your remarks about the limitations around the inability to efficiently or productively re-use 100 per cent of some of those building products, where is it that that waste is best to go?

TONY CHAPPEL: I think there will always be a need for a residual waste stream. Some of that, in the future, in a more resilient and in my view more sustainable waste system, can go to these high-temperature energy-from-waste facilities, and some of it will need to continue to go to landfills of various kinds.

The Hon. EMILY SUVAAL: You mentioned in some of your earlier remarks about some of the environmental challenges that landfill poses. Are you able to advise the Committee on—because there seem to be some differences between, say, landfill versus energy-from-waste proposals. What are some of the environmental challenges posed by both, or one versus the other?

TONY CHAPPEL: As I mentioned, typically, in Australia, landfills have been developed on either former mine sites or quarries, and each one of those is different. There's different geology, and sometimes that geology poses challenges. We now require lining and various protective measures in landfills, but historically that wasn't the practice. In addition, through various anaerobic processes in landfills, there's often very significant generation of pollutants such as methane, very odorous sulphur dioxide and other materials that are extremely impactful on communities. Leachate of various kinds is another problem. There are legacy landfills right around the State posing water pollution challenges that we are managing. There are also other dust and other negative environmental impacts that landfills can produce.

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A really well-designed landfill with modern gas capture and best-in-class systems can approximately get to the environmental performance of one of these facilities. I think very high temperature is one of the most proven, safe ways to destroy and render safe many of the chemicals of convenience we've taken for granted since World War II and a large proportion of the waste which they treat through that thermal process and then recovery of material and energy. The CO₂ output, though, is not zero. I think it's a little less carbon intense than the average intensity of the grid but, obviously, as the grid decarbonises, these facilities will need to improve their performance in the most cost-effective way as well. Ultimately, that's not a material source, really, of emissions in the grid because the scale of energy recovery is nothing like a coal power station. It's usually an order of magnitude, or more, less. It's one-tenth, one-twentieth, one-fiftieth of the capacity of one of those. It's not a huge absolute impact in terms of climate pollution. But that is real, and I think these facilities would need to move to net zero by 2050, like other facilities. Would you like to add?

STEPHEN BEAMAN: My only other comment would be that that's a really hard comparison to make. My first comment would be that landfills end up having a life, and the life can be often 50 years plus, even after they close. We often have to do a lot of work at the EPA. We've got a project that's been running for a few years. We go looking for old landfills because everyone's forgotten they're there, but they still have an ongoing environmental legacy, 50 or 60 years plus. A famous example of that is the Sydney Olympic Park.

There are a lot of old landfills left. The Olympics did a great job of cleaning it up, but there's still a legacy that needs to be managed. That's a societal cost that we have to compare, whereas the alternative to that, for energy from waste, is it's consumed when the material is burnt and you're left managing a much smaller residue component. The other thing with the comparison is that one's very rudimentary. You dig a hole, you line it, you put engineering controls in and you put pipes in and all those things. But with these energy-from-waste facilities, when you go to them, they're modern and they're well run. You're really managing a process. It's a process control. They can really dial these things in and out. It's like comparing a dial-up phone and an iPhone. They're in different technology grades.

TONY CHAPPEL: I have one other point to round out that answer. I earlier mentioned resilience in the waste system. In the Northern Rivers floods, the entire Lismore landfill was destroyed, and obviously with very significant environmental flow-on effects. We've seen at Veolia, at the site at Tarago, very significant challenges from the extreme weather that we've seen in recent years, and the very high precipitation levels. Whatever happens in the next few decades, and however quickly we can reduce our emissions overall, we know that the drivers of the climate crisis will continue to grow for decades to come, even as we address them directly. We are going to see severe weather events more and more be the norm. What that simply does is pose more and more challenges for landfills, whereas these are industrial facilities that can be well designed and sited to be resilient through any number of floods or other challenges. There's a very important level of resilience that our waste system gains by including some of these facilities.

The Hon. EMILY SUVAAL: In terms of the waste infrastructure that we've got currently, I'm interested to hear what has happened in the last 10 years, or perhaps over the period of the last Government, in terms of waste infrastructure and what had been built.

TONY CHAPPEL: Off the top of my head, I think—

STEPHEN BEAMAN: We might have to take that one on notice.

TONY CHAPPEL: Yes. A number of these are longstanding facilities that didn't commence operation in the last decade. I think Woodlawn goes back to the early 2000s, and the Lucas Heights facility, which is another major landfill for Sydney, was even earlier. Let us take that on notice about the level of infrastructure development in that period.

The Hon. EMILY SUVAAL: In terms of what we see as a somewhat pressing situation in terms of our deadline for running out of landfill by 2030, and looking at the options that are available to us, does the EPA have a suggestion for what is environmentally the best way out of what could be a waste disaster, if you like?

TONY CHAPPEL: It's really an all-of-the-above-type question. People often talk about silver bullets versus silver buckshot. There really is a need for systemic solutions. The Government is doing a large number of significant initiatives to shift the system. The Reuse and Repair Strategy that's underway—building into how products come onto market, the ability to repair them, and consideration of recycling and re-use or repair at the end of life—is a very significant intervention that really hasn't been pursued previously. That's progressing now through some of the legislation I mentioned. Doing as much household-level separation as possible, where it's viable—for example, food and garden organics is a very significant intervention. It's millions of tonnes of greenhouse emissions that we can avoid, and millions of tonnes of landfill that we don't need to send to landfill if we can use that productively, the way nature has cycled those materials.

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As other technologies progress for things like textiles, there will be other opportunities. The Return and Earn scheme is another one where the expansion of the scheme to bring in bottles and various other containers will make a significant difference in two respects. When crushed glass becomes at too high a level in the yellow bin, or in a truck full of yellow bin waste, it can mean it has to go straight to landfill because it can no longer be sorted efficiently through a material recovery facility. Pulling the glass out of there and getting it into the reverse vending machines where it can be re-used, remanufactured and not be at risk of going down that pathway will, again, be a major significant step.

STEPHEN BEAMAN: My supplementary to Mr Chappel's answer is, if the community gets the opportunity to look at the Waste Avoidance and Resource Recovery Act 2001, that statutorily put in there the waste hierarchy. We've got to push into all those spaces. This isn't an and/or energy recovery or recycling. Depending on the material, we've got to push hard into all those spaces just to make sure that society has got a sustainable way to manage its waste. The cheapest and the best environmental way is to have proper product design. Ms Sloan talked this morning about that. If we get that right and then you have systems to be able to recover that efficiently, then you're reducing your reliance on things like landfill and energy from waste. But there will always be a residual component, no matter how hard we push into that space.

The Hon. PETER PRIMROSE: These questions have both already been addressed, but I'm just seeking more information. Earlier today Mr Angel said—and I think I wrote down his quote—"What do you do with the toxic residue from incineration?" You've already addressed that. I was wondering whether you might take on notice to give us a bit more information about the options and the alternatives. I think it's an issue worth considering, and what would actually happen and what are the options.

The second one was from Mr Martin from the NSW Farmers Association. We had a discussion here about the issue. Essentially, this has been presented to us now as landfill versus energy from waste. It has been suggested, including by me from reading the material, that we're running out of landfill options. What was put to us was, "How can you be running out of holes? New South Wales has lots of holes. We presumably, if we wish, could continue using landfill." I put that question and you and others have said, "We're not only talking about holes. We're talking about something that needs to be adequately addressed et cetera." I also notice that it's presented as a dichotomy, even in your submission. I, for one, would like to see some more information about addressing the issue. Why can't we develop more landfill in Greater Sydney, for example, or which would take waste from Greater Sydney? Given that we're presented with a simple dichotomy that is being challenged, I think it's worthwhile us receiving some more information on that.

TONY CHAPPEL: I think in answering that we'll also reference the waste hierarchy that my colleague Mr Beaman laid out, which is in the Waste Avoidance and Resource Recovery Act. We're required to use that framework, but it's not just reduce, re-use, recycle. The recovery of metals and other material and energy is one step above that ultimate disposal in perpetuity to landfill. We see them very much in complementary terms about minimising the overall environmental impact of how we deal with waste products. But we'll lay out how the system fits together.

The Hon. PETER PRIMROSE: Particularly addressing, as I said, that dichotomy. It's really that you could either dig more holes or you could burn them. That's the dichotomy.

The Hon. NATASHA MACLAREN-JONES: In relation to the Waste and Circular Infrastructure Plan, I'm interested to understand whether or not there has been modelling done around the cost of transporting waste for the waste-for-energy model, and road versus rail and where those costs would be shifted to, effectively.

TONY CHAPPEL: Yes, we have certainly looked at that, both from a simple cost basis and also in terms of what you might consider a life cycle greenhouse gas assessment of vehicle or rail movements for the various material flows. I think some of those materials are in the second chapter, which is now nearing finalisation. That will be, I expect, released early in the new year. We can take on notice, perhaps, the detail because I just don't have it in front of me.

The Hon. NATASHA MACLAREN-JONES: That's fine. The other one is councils have said that they've got a target of 80 per cent of recycling as part of the circular economy. What has been built into the plan to ensure that organisations have got enough waste to be financially viable if they are operating as a waste for energy, if you've then got councils focusing on not sending that waste off? How does that balance work?

TONY CHAPPEL: It's a national target. It's 80 per cent recycling and recovery. If you get the opportunity to visit one of the facilities in Western Australia, what you'll see is there's quite a surprising quantity of metal that would otherwise go to landfill that is recovered through these facilities and then recycled. The 80 per cent is really the total material flow that can be recycled or recovered, and I think energy recovery can be one part of that. But

CORRECTED

the other point you make, which is also a good one, is this concern about perverse incentives, where it's somehow more cost-effective to build more waste-to-energy plants rather than recover the materials.

When we look globally at that experience, we're very confident, because New South Wales has done so much work ahead of having these facilities. With source separation and things like the FOGO mandate being universal now, years before any of these facilities operate, we've really tried to maximise source separation and recovery upstream. There will always be a residual component, and we want to minimise that as much as possible. But these policy settings, including the fact that there's a limited number of geographies where they might be considered, all help to limit that risk. Do you want to add to that?

STEPHEN BEAMAN: No.

The Hon. NATASHA MACLAREN-JONES: My final question—and I'm happy for you to take it on notice—is about the regulation around contamination. What is required of organisations to do regular testing of soil, air and all of that, and to be compliant?

TONY CHAPPEL: Absolutely. There's a series of pollutants where real-time monitoring would be required and then some other residues that are tested for at regular intervals as well, and other monitoring on the site and in the surrounding environment. We can lay all that out in our answer.

Dr AMANDA COHN: It's my understanding, in terms of the energy generation component of waste-to-energy incinerators, that the process has a higher emissions intensity than gas generation does, which doesn't really reconcile with New South Wales's climate commitments. I'm hoping to confirm my understanding of the intention of these proposals, which is really about dealing with residual waste, more so than being a good source of renewable energy and part of a climate transition.

TONY CHAPPEL: I'll look at the specifics of the question about the greenhouse footprint of what you might consider base load gas or combined cycle gas plants, which I don't think currently operate in New South Wales, versus gas peaking plants and the megawatt-hour carbon intensity of both of those, as opposed to these facilities. But these facilities produce three things. They do recover some materials, as I mentioned, but they also generate heat and electricity. If they're anchoring a precinct of industrial processes, it can be a very efficient way to capture heat, and that heat essentially doesn't have to be generated a different way. The driver of these settings is very much about the waste and circular economy needs for the State, but they're also anchored to our climate commitments.

Dr AMANDA COHN: I also wanted to ask about the life span of these projects. They need decades worth of residual waste to be viable for their intended life span. How do you reconcile that with your other excellent commitments under a circular economy—for example, the recent additional single-use plastic items that have been phased out? Surely if we actually achieve our circular economy goals, we'd be putting these incinerators out of business.

TONY CHAPPEL: That would be a great aspiration. Everything we see when we look at the data is it's—unfortunately, even with all of our success in those areas and assuming we continue to build on that success, there's still a fairly substantial residual waste stream for the foreseeable future, at least decades, where we will need appropriate ways to manage that material flow and deal with it. These facilities are very much consistent with those expectations. Do you want to add to that?

STEPHEN BEAMAN: I did have something to say. I've forgotten what it is now, but I think that's—

The CHAIR: Time of the day.

STEPHEN BEAMAN: It's a little bit the time of day. We're always going to end up with that 10 or 20 per cent left over, no matter how aggressively we can push into that circular economy space. If you're looking at New South Wales today, we currently landfill about 10 million tonnes. There's always going to be a need for about two million tonnes to find residual, to find a place to be left over. These facilities—the Woodlawn one's, I think, a 380,000-tonne proposal—they won't consume all the residual waste left over. The benefit we see in them is that it's actually diversifying the infrastructure mix, so we're not just relying on energy from waste only or landfills only. Your question was how long do these facilities last for. The advice we've had from overseas is they typically have a life between 20 and 30 years. That's their window of life, which is pretty typical of large infrastructure like that. Those types of facilities, like the Woodlawn landfill, has been running for 22 or 23 years already.

Dr AMANDA COHN: Some more time? Okay, I'll keep going.

The CHAIR: You're asking the questions that I would have asked anyway.

CORRECTED

Dr AMANDA COHN: No problem. I'll do one more and then hand back to you, Chair. There's a lot of community interest in the process that was followed to determine these four precincts, noting that they're now somewhat different to the original precincts. We've now got Tomago in the Hunter and not Richmond anymore. There's a regulation that prevents the incinerators being built across most of New South Wales. You couldn't build one in the CBD of Sydney; you couldn't build one in my community of Albury. Why are these deemed safe in those four precincts, or now five, given that they've changed?

TONY CHAPPEL: It's still four. They are safe wherever they are built if they're regulated the way the New South Wales regulatory settings require.

Dr AMANDA COHN: So why aren't they permitted across the whole of New South Wales?

TONY CHAPPEL: The Government policy for some years has been to allow this development in the confines of particular precincts. The former Government had a process that ended up in those four original proposed precincts. As those precincts have been reviewed, they've been updated and the Government has made that announcement. But that's really a question for the Government.

STEPHEN BEAMAN: No doubt you've heard the examples, but there are three waste-to-energy facilities in the old part of Paris. They're in Tokyo; they're in the UK. You can have them in a variety of locations. One challenge for the Committee is that the air assessment that we do in the human health risk assessment is agnostic to what the project is. Whether it's a widget factory, blast furnace or energy-from-waste plant, the regulatory requirements and the settings for human health and environment protection are the same. It's almost agnostic to the technology here. You could ask the question for any industrial activity. That's part of the regulatory framework. It's agnostic to the type of industry being proposed.

Dr AMANDA COHN: Those examples keep being brought up of the Europe and elsewhere, but there are some of those sites, like France and the Netherlands, where those policies have had to be walked back or where health impacts have been realised after they've been built. Are we taking into account those more recent changes? I brought up earlier today the example in France where 12 million people were told not to eat their backyard produce.

STEPHEN BEAMAN: Those examples, from my understanding, are from older technology that isn't the technology that's being used in the EU at the moment or the standards that we actually have in Australia. That's from older technology that didn't have the pollution control settings that we do now.

TONY CHAPPEL: We've had similar legacies some decades ago where municipal incinerators didn't have modern pollution controls and there were serious impacts. I think it's entirely understandable that communities with memories of those have concerns and are sceptical. Where we have come to, after many years of engaging in this technology and talking to proponents, operators and regulators all around the world, is that we're very confident that the community of all kinds of activities is well protected by these settings.

The CHAIR: Thank you both. Given that everyone has had a fair opportunity to ask questions, and that Dr Cohn has covered off on some of the ones that I could have gone on with as well, we'll say thank you to you both for appearing today and for your evidence. The secretariat will be in touch in order to facilitate the questions on notice that have been taken.

(The witnesses withdrew.)

The Committee adjourned at 16:40.