Thank you to the Environmental Defenders Office Queensland for this invitation to speak at its second climate law update conference. This is a large topic to do justice and I will focus on matters relevant to New South Wales. Climate change is used as shorthand for dangerous climate change resulting from human produced greenhouse gas in the atmosphere.

Global government efforts

In terms of setting the international scene, as the audience is well aware, the Paris Agreement provides the current international framework for dealing with climate change. The Paris Agreement was created under the United Nations Framework Convention on Climate Change at the 21st Conference of Parties (COP21) in 2015. Most United Nations member countries agreed to keep global temperature rise this century to below two degrees Celsius above pre-industrial levels through nationally determined contributions of each party state. There is currently no legal mechanism in place by which the Commonwealth government will meet its nationally determined contribution target of a 26% reduction of 2005 levels by 2030 with the recent demise of the National Energy Guarantee arrangements. Australia’s commitment under the Paris Agreement may provide a relevant policy setting to matters regulated under state and territory laws.
Non-governmental global efforts

A number of non-government entities have made efforts to progress climate change mitigation policies focussed on the reduction of greenhouse gases around the globe. One I will mention is the Oslo Principles on Global Obligations to Reduce Climate Change (the Oslo Principles) adopted in 2015 by a group of 13 experts in international, environment and human rights law (including the Hon Michael Kirby). They are a series of best practice principles and measures which states and enterprises should take to achieve their obligations to reduce climate change impacts of greenhouse gases.

Domestic litigation

Climate change litigation has been defined as legal action which seeks to address the causes or likely impacts of climate change.\(^1\) Climate change litigation at the domestic level comes in many forms and can be broadly identified as focussed on adaptation or mitigation. It can be brought as an action in tort alleging a duty of care to prevent foreseeable environmental harm, as judicial review of decisions which may lead to environmental harm, as human rights or constitutional challenges or actions in corporations law alleging breach of director’s duties.\(^2\)

Australia has one of the highest rates of climate change litigation in the world, second only to the United States of America (USA), with some 80 cases having taken place up to 2017.\(^3\) In contrast climate change litigation in other jurisdictions has focussed on climate change as a systemic issue such as the breach of duty by the Dutch government alleged in the tort law action in the *Urgenda* litigation\(^4\) or the

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Juliana public trust case\(^5\) in the USA. A large number of cases in the USA are also based on tort arguments.

The Australian experience of climate change litigation raises important issues about the impact a particular project or contributor may have in exacerbating climate change through increasing greenhouses gases and the need to mitigate these. A number of cases have also considered adaptation matters concerning coastal development in particular, such as whether the siting of development is appropriate.

**Climate change litigation in New South Wales – last two years in review**

Very briefly, the Land and Environment Court is a “one-stop-shop” which has civil and criminal jurisdiction in relation to a large number of environmental and planning laws. The Court hears merit appeals, judicial review and civil enforcement matters. Climate change issues have arisen in New South Wales in several cases in the last two years. I will discuss five in particular today. Three of the cases concern the potential impacts of coastal processes and sea level rise on various developments (and therefore concern adaptation to climate change impacts). Two cases concern the impacts of coal mining projects in releasing greenhouse gas emissions (mitigation of contribution to exacerbation of climate change).

**Coastal impacts**

**Belongil Spit north coast of New South Wales litigation**

In the 1960s and 1970s Byron Shire Council on the north coast of New South Wales constructed an artificial headland near Belongil Beach protected by a rock seawall. In addition Byron Shire Council had developed a policy known as “planned retreat” requiring dwellings to be able to be relocated should seaward erosion approach within 20 metres and restricting development near beaches. The council also published a draft Coastal Zone Management Plan (CZMP) pursuant to the *Coastal Protection Act 1979* in May 2010 providing for maintenance of the seawall and included an emergency action plan. The draft CZMP was later withdrawn with the

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\(^5\) *Juliana v USA* (9th Cir No 17-71692, 7 March 2018).
intention of drafting a new CZMP which would take into account the *Coastal Protection and Other Legislation Amendment Act 2010*. Amendments to the *Coastal Protection Act 1979* initially provided for short-term management of coastal emergencies by permitting owners of beachfront properties to carry out emergency works without planning approval, albeit still requiring authorisation from the local council. This was in addition to the longer term policy of having “planned retreat”.6

Actions have been brought in relation to coastal erosion at Belongil Spit in both the Land and Environment Court of New South Wales and the Supreme Court of New South Wales. In the Land and Environment Court in 2009, Byron Shire Council sought an interlocutory injunction restraining a land owner from building a wall out of rock to protect his property which had been exposed to beachfront erosion due to an interim sandbag wall being damaged in a storm surge.7 The parties later agreed to the interlocutory injunction being varied so that the property owner could rebuild the wall with geobags and sandbags.8

In 2010 fourteen plaintiffs who owned properties along Belongil Beach commenced proceedings in the Supreme Court of New South Wales alleging that Byron Shire Council had a duty of care to protect their properties by modifying or removing the seawall inter alia. The plaintiffs allege that the seawall caused erosion of the beach and consequently that their properties had been exposed to seawater and wave action. The plaintiffs alleged that Byron Shire Council has breached its duty of care to them and this has led to loss and damage of their properties. The plaintiff’s actions allege nuisance. There have been numerous interlocutory decisions. The latest decision in 2016 *Ralph Lauren 57 v Byron Shire Council* [2016] NSWSC 169 arose from the plaintiffs’ notice of motion seeking leave to file a further amended statement of claim.

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7 *Byron Shire Council v Vaughan; Vaughan v Byron Shire Council* [2009] NSWLEC 88.

8 *Byron Shire Council v Vaughan; Vaughan v Byron Shire Council (No 2)* [2009] NSWLEC 110.
The plaintiffs’ proposed amendments allege omissions of Byron Shire Council including the withdrawal of the CZMP, the failure to prepare a new CZMP and the failure to create an emergency action plan. Byron Shire Council filed a motion seeking to strike out certain paragraphs of the existing amended statement of claim submitting that the plaintiffs’ case intruded into matters of political judgement which were not open to scrutiny by the courts.

The Supreme Court dismissed the Council’s motion stating that the proposed amendments raised matters of substance which should not be dealt with at this stage of the proceedings which were appropriate to consider where a continuing duty of care and continuing breaches had been alleged. The proposed amended paragraphs did not create new causes of action and were founded on the overarching duty of care alleged by the plaintiffs.

**Fetherston v Wollongong City Council [2016] NSWLEC 1527 (merit appeal) (NSWLEC)**

*Fetherston v Wollongong City Council* [2016] NSWLEC 1527 was a merit appeal against a refusal by Wollongong City Council of a development application for a two-storey dual occupancy on land at Stanwell Park Beach. An intervener was joined on the basis that if she were not joined the impacts of coastal processes on flood risk, coastal erosion and inundation and view loss would not be adequately addressed (see *Fetherston v Wollongong City Council* [2016] NSWLEC 1258). The intervener adduced expert evidence in relation to site-specific impacts of coastal processes.

One of the issues in the appeal was whether a flood study was required to address the impact of coastal processes and relatedly whether a flood study should consider the effects of climate change on ocean conditions. The expert for the intervener stated that considering changes in climate would be best practice while the expert for the appellant stated the relevant development control plan “…did not make explicit allowances for climate change for new residential development” at [30]. The court ultimately preferred the evidence of the appellant’s expert while noting there was “some merit” in the intervener’s expert’s approach: at [31]. Development approval was granted.
Pridel Investments Pty Ltd v Coffs Harbour City Council [2017] NSWLEC 1042 (merit appeal) (NSWLEC)

Pridel Investments Pty Ltd v Coffs Harbour City Council [2017] NSWLEC 1042 was an appeal of Coffs Harbour Council’s decision to refuse a 39-lot subdivision and boundary adjustment on land at Emerald Beach near Coffs Harbour. The Council refused the development due to the high risk of flooding and inundation inter alia. In her overview of the proposed development Senior Commissioner Dixon stated that “Emerald Beach has a single foredune with a crest elevation, at the time of the hearing, of approximately eight metres AHD [Australian Height Datum]”. The Commissioner went on to say:

24. As it presently stands, the dune is the barrier that protects the Site from the erosive forces of the sea. It also protects the land in another way: both the dune and its vegetation provide a visual barrier to the development. The longevity of the dune, as both a protective and visual barrier to the development, is therefore of critical importance in this case.

25. Climate change will accelerate coastal processes and make it much more likely that the Site will be inundated from the sea, within the presumed 100-year life of the development. That said, the Council’s case is not dependent at all on climate change (Respondent’s written submissions (RWS) at [26]). Rather, the Council contended there is a clear risk in the present that the dune will be eroded and its vegetation stripped by the erosive forces of the sea. This will make the development more susceptible to coastal processes and when the foredune eventually slumps – by erosion over time – given the proximity of property boundary to the toe of the foredune – a rebuilt lower dune would be subject to periodic wave overtopping and ongoing erosion.

The applicant submitted that the risk from coastal processes was so remote it should not be considered. Commissioner Dixon found to the contrary on the basis of coastal processes, town planning, flooding and ecology experts who expressed reservations about the development. The Commissioner found there had been inadequate assessment of the risk of coastal processes and that the development application should be refused.

The coastal development cases reflect the circumstance that potential climate change impacts are now part and parcel of such appeals.
Coal mining development

Wollar Progress Association Incorporated v Wilpinjong Coal Pty Ltd [2018] NSWLEC 92 (judicial review)

In Wollar Progress Association Incorporated v Wilpinjong Coal Pty Ltd [2018] NSWLEC 92 the applicant sought judicial review of a decision of the New South Wales Planning Assessment Commission (PAC) approving a coal mining project in the town of Wollar approximately 40 kilometres north-east of Mudgee. The applicant was a not-for-profit volunteer-based incorporated association concerned with the well-being of residents of and visitors to Wollar. It objected to the development application for the coal mining project and made submissions on the environmental impact statement. The applicant sought a declaration that the consent was invalid and orders quashing the decision of the PAC and restraining Wilpinjong from undertaking the mining project.

The applicant sought review on two grounds. Firstly, that the PAC had failed to consider matters in cl 14(2) of the State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007 (the SEPP) which required consideration of greenhouse gas emissions (including scope 3 emissions); and secondly, that there had been a constructive failure to exercise jurisdiction by failing to consider the environmental impacts of clearing for the coal mining project.

The applicant submitted that the consideration of greenhouse gas emissions was a mandatory relevant consideration as mandated in s 79C(1)(a)(i) of the Environmental Planning and Assessment Act 1979 and cl 14(2) of the SEPP. The obligation in cl 14(2) required the PAC to consider downstream emissions when assessing the development application for the mining project itself and not simply deciding conditions to attach to the project in accordance with the SEPP. The PAC was required to consider greenhouse gas emissions having regard to the Paris Agreement and the New South Wales Climate Change Policy Framework (NSWCCPF) as applicable state and/or national policies, programs or guidelines pursuant to cl 14(2). It was not sufficient for the PAC to record that it had considered
the provisions of “any relevant environmental planning instruments” in considering whether the obligations imposed by cl 14(2) had been met.

Wilpinjong Coal Pty Ltd submitted that the PAC had no duty to provide reasons for its decisions or to explain the weight it attributed to particular factors. The Paris Agreement and the NSWCCPF could not be policies as referred to in cl 14(2) because they could not meaningfully guide the task of the consent authority and raised fundamental policy considerations. Clause 14(2) required a quantitative assessment of greenhouse gas emissions from the project. It did not require a discussion of relevant policies. In any event the targets in the NSWCCPF were aspirational rather than normative. It was clear that the PAC had turned its mind to issues of climate change. That the PAC did not give climate change the weight hoped for by the applicant was a merits complaint.

The Court held that the applicant had not discharged its onus to show a failure by the PAC to take into account a mandatory relevant consideration. The PAC gave a “close consideration” to the issues and the material in the case. All relevant material was before the PAC. The summons was dismissed.

Gloucester Resources Ltd v Minister for Planning and Environment (No 2) [2018] NSWLEC 1200 (joinder in merit appeal)

Section 8.15(2) of the Environmental Planning and Assessment Act 1979 (formerly s 39A of the Land and Environment Court Act 1979) permits objectors to a development to be joined as parties to appeals of development consents.

In Gloucester Resources Limited v Minister for Planning and Environment (No 2) [2018] NSWLEC 1200 Groundswell Gloucester Inc (the intervener) sought to be joined in proceedings brought by Gloucester Resources Limited against the Minister’s refusal of a greenfield site for an open cut coal mine five kilometres south of the town of Gloucester. The intervener was a non-profit community organisation concerned with the economic, social and environmental welfare of the Gloucester Valley. It submitted that it would raise issues that would otherwise not be likely to be sufficiently addressed if it were not joined of social impacts and greenhouse gas emissions. In particular the intervener submitted that a quantitative assessment of
potential scope 1, 2 and 3 greenhouse gas emissions, a qualitative assessment of the potential impact of these emissions on the environment and an assessment of measures to minimise greenhouse gas emissions would not be before the Court. Senior Commissioner Dixon found that the intervener intended to call expert evidence from an anthropologist regarding the social impact of the development which would otherwise not be before the Court. Senior Commissioner Dixon found that it would be in the interests of justice and the public interest to order the joinder given the significant public interest in the appeal. The substantive proceedings were heard by the Court in late August 2018 and judgment is reserved.

**Evidential challenges of climate change litigation**

The challenges of climate change litigation are many and complex. Broadly speaking for those community groups or individuals seeking to challenge point sources of greenhouse gases, there are three key challenges: establishing standing, proof of causation and scientific uncertainty. Evidence is of course key in most cases to how a court will determine a particular matter.

Standing is a fundamental issue in any environmental litigation but particularly so in climate change litigation. On one view everyone has an interest in accelerated climate change and may argue that they have standing to bring climate change litigation. Under the two key environmental statutes in New South Wales (the *Protection of the Environment Operations Act 1997* and the *Environmental Planning and Assessment Act 1979*) there is open standing for civil enforcement and judicial review. Third party rights in merit appeals are more limited in New South Wales than some other Australian jurisdictions.

Causation of harm is a cornerstone of many legal actions and raises issues of proof. One of the key challenges of climate change litigation is the “single entity focus”. It has never been disputed by parties before Australian courts that accelerated

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9 See s 9.45 of the *Environmental Planning and Assessment Act 1979* and s 219 of the *Protection of the Environment Operations Act 1997*.

10 Ibid 17.
anthropogenic climate change is occurring. Such global change is very difficult in an evidentiary sense suitable to a court to link to a particular source or contributor. Scientific modelling of the global impacts of climate change has faced difficulties in being accepted by courts as evidence that can be related to a particular source. By contrast, cases such as Urgenda and Juliana which address climate change as a more systemic issue have not faced these challenges as evidence of global harm resulting from increased greenhouse gases has been more readily accepted by courts given the cause of action before them. Scientific uncertainty, underpinned by constant changes and updates in scientific understanding also presents a challenge for climate change litigation.

As usefully summarised by Rogers, a challenge in project-specific climate change litigation is that “…evidence of climate scientists is presented in this context [of a specific project], rather than in the broader context of the global need to reduce greenhouse gas emissions. This diminishes its impact and efficacy.”\(^\text{11}\) This concern has been echoed by other commentators who have recognised the challenge this presents to courts which must grapple with issues of “global versus local responsibility” for climate change and of scientific uncertainty.\(^\text{12}\)

**Climate modelling in court – New South Wales experience**

*Hunter Environment Lobby Inc v Minister for Planning [2011] NSWLEC 221*

*Hunter Environment Lobby Inc v Minister for Planning* was a merit appeal under s 75L of the then *Environmental Planning and Assessment Act 1979* against an approval by the Minister for Planning for an expansion of the Ulan coal mine. It sought conditions requiring an offset for scope 1 emissions (direct greenhouse gas emissions from mining) and scope 2 emissions (indirect emissions from the consumption of electricity used by mining) caused by the mine. As the purpose of the

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\(^{11}\) Nicole Rogers, “Making Climate Science Matter in the Courtroom” (2017) 34 Environment and Planning Law Journal 475, 477

*Environmental Planning and Assessment Act 1979* was to protect the environment, the imposition of conditions on the approval to address greenhouse gases was arguably within power. The experts agreed that scope 1 emissions were a direct consequence of the mining activities authorised by the project approval. A condition requiring the offsetting of scope 1 emissions was therefore within the scope of the Minister’s power. By contrast, scope 2 emissions resulting from how the coal was used could not be controlled by the mine and were therefore beyond the scope of the development.

Extensive modelling of the impacts of scope 1, 2 and 3 emissions was in evidence. The expert for the applicant modelled the impact of the project in terms of scope 1, 2 and 3 emissions based on three emission scenarios used in the Intergovernmental Panel on Climate Change (high, medium and low emission levels), as well as modelling taking into account any offsetting measures taken by the mining company. The expert measured the impacts of action affecting emissions (identified as aggregated economic impacts at a global scale) and the social cost of carbon dioxide emissions. At [96] the Court summarised:

> ...He [the expert, Professor Jones] maintained that for the scope 1 emissions from the project the social cost of carbon estimated for scope 1, 2 and 3 emissions would still hold as that marginal cost can be divided back per tonne of CO2-e. This evidence is significant because it demonstrates that it is methodologically possible to apply data from single (large) projects in a climate model to quantify to some extent at least the social cost of carbon. Such evidence means that the submission that a particular project is but one of many contributors to a local, regional and global problem, while correct, can be subject to analysis of what the individual project's social cost of carbon is.

**Emergence of extreme weather event attribution science**

The development of extreme weather event attribution science in the context of climate change litigation may have important implications. Marjanac and Patton have provided an informative discussion of the role of attribution science in climate change litigation. They define event attribution science as:

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The science that seeks to determine the extent to which anthropogenic climate change has altered the probability or magnitude of the particular weather event or class of weather events that are the subject of study.\textsuperscript{14}

In other words event attribution science looks at whether human induced climate change impacted the likelihood of a particular environmental event (such as a bushfire, storm, flood tsunami) occurring. There are inherent difficulties in discussing event attribution science and, as recognised by Hulme, a distinction must be made between causation which is deterministic (“this caused that”) and that which is probabilistic (“this made that more likely”).\textsuperscript{15}

The first attribution study was in 2004. The limitations of attribution science were summarised by United Nations Environment (UNE) in its study on climate change litigation which recognised that although many courts have identified a general relationship between greenhouse gas emissions and negative environmental events, “no court has yet found that particular greenhouse gas emissions relate causally to particular adverse climate change impacts for the purpose of establishing liability.”\textsuperscript{16} This limitation has also been recognised by a number of scholars who state that event attribution science can identify generally how anthropogenic greenhouse gases have contributed to adverse climate or weather events but cannot link particular contributors or projects to a change in climate which then resulted in an adverse weather event.\textsuperscript{17} This is inherent in the fungible nature of greenhouse gases.\textsuperscript{18}

\textsuperscript{14} Ibid 268.
\textsuperscript{15} Mike Hulme, “Attributing weather extremes to ‘climate change’: A review” (2014) 38(4) Progress in Physical Geography 499, 500.
Event attribution science seeks to improve understanding of anthropogenic climate change by connecting changes in climate induced by human activity to specific weather events and any associated harm. While it is well-recognised that event attribution science is far from being able to link specific greenhouse gas emissions to a particular project or emitter, it will likely assist in bringing scientific knowledge within the existing legal framework which requires proof of standing, foreseeability, causation and harm inter alia. As aptly stated by Marjanac and Patton, “attribution science will be influential in evaluating causation issues and for establishing foreseeability of weather events”. This will likely have important flow-on consequences for policy-makers as it will improve the ability of governments to predict and plan for extreme weather events.

Commentators have considered this science opens the door to establishing evidence of specific and quantifiable loss and damage arising out of atmospheric levels of greenhouse gases linked to specific regions or individuals. Such evidence is likely to be relevant to damages claims against large emitters.

**Wither climate change litigation?**

With Australia’s comparatively extensive experience with climate change litigation, academic commentators have stated that we are moving towards a “second generation” of climate change cases. The “first generation” of climate change litigation was characterised by cases which “…consolidated the practice of including climate change considerations in environmental impact assessment undertaken for projects with substantial greenhouse gas emissions or the potential to be impacted by climate change consequences such as sea level rise.” The “second generation” of climate change litigation will likely involve cases which do not directly consider climate change but have implications for mitigation and adaptation. This will have

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19 Ibid 278.
20 Ibid 266.
22 Ibid 801-802.
flow-on effects for how such cases are run and the types of evidence adduced. Marjanac and Patton have suggested that:

...the next set of litigation issues will likely turn on whether improvements in attribution science can show what scientists knew or know about climate change, and thus what effects or events can be totally or partially attributed to climate change and what was reasonably foreseeable.23