NET ZERO INDUSTRY AND INNOVATION

New Low Carbon Industry Foundations – Illawarra Workshop Stakeholder Insights

Workshop dates: 14 July 2021 and 4 August 2021

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The views provided herein are the opinions expressed by attendees during the event and do not represent the views of the NSW Government or Australian Industry ETI.

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Cover image: Port Kembla Steelworks Sunrise. Image courtesy of Mandy Creighton

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Acknowledgment of Country

The Department of Planning, Industry and Environment acknowledges the Traditional Owners and Custodians of the land on which we live and work and pays respect to Elders past, present and future.

Overview

In collaboration with the Australian Industry Energy Transition Initiative (Australian Industry ETI), the NSW Government hosted workshops on 14 July and 4 August 2021 online. The workshops brought together a diverse range of stakeholders whose insights will help inform plans for developing a thriving, low carbon industrial region in the Illawarra. These workshops built on information provided by stakeholders during the registration of interest process and market sounding interviews, both of which took place in early 2021.

This workshop insights document provides a summary of the key themes, opportunities and issues identified by workshop attendees at the events. It does not represent the views of the NSW Government or the Program and is intended only to capture a point-in-time snapshot of feedback provided during the event.

About Net Zero Industry and Innovation

Announced in March 2021, Net Zero Industry and Innovation (the Program) is the NSW Government's $750 million program to support and partner with industry to reduce emissions and help NSW businesses prosper in a low carbon world. By accelerating the development of clean technology and decarbonisation, we will grow the economy, support jobs and significantly reduce emissions.

Net Zero Industry and Innovation is the cornerstone of the NSW Government's NSW Net Zero Plan Stage 1: 2020-2030, which aims to reduce emissions by 35 percent by 2030 and achieve net zero by 2050.

The Net Zero Industry and Innovation Program has three areas of focus:

- New Low Carbon Industry Foundations
- High Emitting Industries
- Clean Technology Innovation.

The New Low Carbon Industry Foundations focus area looks at laying the foundations for low emissions industries by supporting the emergence of Clean Manufacturing Precincts (CMPs) in NSW. The Program does this by accelerating the deployment of the enabling, low carbon infrastructure and technologies.

The purpose of a CMP is to foster market coordination by establishing industry-based consortiums to develop strategic roadmaps to decarbonise industrial clusters in the state. The Hunter and the Illawarra regions have been identified as regions that may benefit from CMPs with aims to support decarbonising the region’s industries.

Executive Summary

The following insights from the Illawarra workshops on 14 July and 4 August 2021, outline stakeholder feedback on the New Low Carbon Industry Foundation focus area, point to what's critical for industrial transition in the region and summarise the concerns and potential barriers. These shared insights are represented here to support an open consultation and co-design process. It also supports regional stakeholders to come together on roadmaps and projects by building on an open, shared understanding of the opportunities and challenges.

Program feedback

- Stakeholders are generally supportive of the roadmap and industrial cluster approach
- Consultation feedback rang true – stakeholders in the region are on the same page
- Integration between NSW programs and with federal government initiatives is key
- Policy and a clear government role is needed for investment confidence, to support collaboration and innovation, and to address the funding gaps
- Stakeholders are looking for clarity - funding, access, timing, forming consortia, coordination

Elements critical to success

- Need to know where we are (data), where we are going (future energy needs & govt intent)
- Policy directives and incentives create confidence e.g. investment risk
- Leverage the port - a key region advantage
- Coordinate with existing networks, decarbonisation priorities and the region's diverse players
- Build on the strength of community support for industry and bring everyone along
- Engage multiple levers to enable and catalyse industrial collaboration - sector coupling, coordinating supply and demand, existing collaboration platforms, scope 3 emissions
- Identify deliverables and investment over time. Short, medium, and long-term sequencing
- Good strategy is outcomes focused but flexible enough to let industry innovate
- Innovative finance and investment models needed

Stakeholder concerns and barriers to transition

Stakeholder concerns centre on the commercial and regulatory challenges associated with decarbonisation, energy security risks, fears of politicisation, and the absence of a strong regional group to lead.

Emerging ideas for collaboration

- Decarbonising heavy industry transport in the region seen as an obvious opportunity
- Biofuels provide near-term opportunities for transition - biomethane, biodiesel etc.
- Ideas to expand renewable energy generation and access across diverse technologies
- Some interest in green hydrogen - skills in the region, off-take opportunities, blending
- Carbon capture and utilisation is of interest to many
- Circular economy interest, especially for steel (scrap) and dealing with waste in the region
- Emerging projects in the pipeline include off-shore wind, electrolysers, electric vehicles
- Connect to existing networks and projects such as Materials and Embodied Carbon Leader's Alliance (MECLA), cement pathway and Cooperative Research Centres (CRC)

Workshop Insights

Illawarra workshops 14 July and 4 August 2021

Purpose of the workshops

- Identify the challenges, opportunities and ideas for industrial decarbonisation in the Illawarra region.
- Contribute to the design of the New Low Carbon Industry Foundations (NLCIF) focus area of the Net Zero Industry and Innovation (NZII) program.
- Explore the potential to build strategic alliances that will deliver regional decarbonisation.

This workshop was an important first step in strengthening the collaborative partnerships that are essential to accelerate the deployment of the enabling, low carbon infrastructure and technologies needed for industrial decarbonisation. The ideas that were captured provide valuable insights that will aid the Department to finalise the design of the NLCIF stream of the NZIIP. It will help ensure the work is fit for purpose and delivered to meet the needs of stakeholders

Participants

A total of 33 stakeholders attended the workshops held online on 14 July and 4 August 2021. Stakeholders were from diverse backgrounds including heavy industry, suppliers, engineering services firms, non-government organisations (NGOs), associations, business networks, research organisations and universities, CRCs and government agencies.

Stakeholder Insights

The workshops were designed to facilitate conversations in small groups on the program design and emerging ideas for industrial transition in the region. The insights below are a summary of the conversations.

Discussion Topics

- **Program consultation - what we've heard so far:** A presentation on the insights gained from Eric Kimmel and Bradley Anderson (Department of Planning, Industry and Environment).
- **Program design and approach:** Presentation by Eric Kimmel.
- **Possibilities for Industrial Region Transitions:** A presentation from Eric Kimmel and Jason Nielsen (Australian Industry Energy Transitions Initiative) to explore the potential in taking a regional economy perspective and the promising technologies.
- **Coordination and Collaboration in industrial region transitions:** Examples from UK and WA presented by Eric Kimmel and Jason Nielsen.
- **Developing collaboration ideas and roadmap potential:** Discussions to share and explore ideas for the region and how roadmap development might progress.

The workshops were facilitated by Meredith England from the Australia Industry Transition Initiative and presentations were followed by small group discussions and time for questions and answers.

Detailed agendas can be found on page 11 and 12.

Program Design Feedback

The workshop offered an opportunity for stakeholders in the region to provide feedback on the proposed program design. The feedback welcomed coordination efforts and stakeholders were broadly supportive of the industrial cluster approach. They requested more clarity on the role of government and program implementation.

Table 1. Program Design Feedback

Coordination is welcome	More clarity is needed
Stakeholders are generally supportive of the roadmap and industrial cluster approach • Consultation feedback generally rang true • Businesses are interested in the precinct/cluster opportunity • Good to hear that communities are supportive of the transition • "It is great to see that across the board we are on the same page about needing to shift to net zero" • There is "industry interest to decarbonise and government support to help" • Investors in the region are interested in decarbonisation **Integration between NSW programs and with federal government initiatives is key, stakeholders are looking for coordination, support in streamlining the process and help with navigating government programs and funding** • "How will it align with commonwealth initiatives?" • Need to look at bi-lateral funding • "Link up with other programs, states and at the national level - many national players are working across other states as well" • Gas distribution network (for example) has a high number of touchpoints across government. How do we get the stacked, collective vision and benefit for the region? • "There's a role for NSW govt to smooth the way with federal govt." • "Is there a link to the national hydrogen infrastructure assessment?" • "Does this align with the modern manufacturing initiative?"	**Policy needs and clarity on the role of government to create confidence** • Lack of coordinated policy "the old quote 'lead or get out of the way' comes to mind." • "The business case isn't stacking up - we don't have clear incentives like in US and Europe including a consistent energy policy." • "What's the role of government here?" • Will the govt facilitate sector coupling to support the development of industrial clusters? • "Ensure policy supports collaboration and that circular economy and collaboration advantages are recognised." • "Ensure no unintended consequences due to lagging policy and regulation (e.g. Environmental Protection Authority (EPA) emissions reporting)." • Renewable gas opportunities are contingent on effective and coordinated policy and incentives across local, state and Commonwealth • What about looking at funding gaps and help organisations couple. Organisations could come to the govt with a clear funding gap (address with multiple levels of govt) rather than companies having to fit with govt funding in a short timeframe? **Stakeholder are looking for clarity on a number of aspects - funding, access, timing, forming consortia, coordinating body etc.** • "Is there an intermediate opportunity to expand on the ROI submissions that we put in back in April?" • Can a partnership/consortia access multiple 'buckets' of funding? For example, if it integrates a hydrogen hub, balancing grids for increasing variable renewables, clean energy innovation and decarbonising high emitting industries? • "How do you make it so that everyone will have equal access and opportunity?" • "Can you set up an anchor project so that it provides fair access to commercial offtakers?" • What's the timeline for the process and then for the projects? Does the funding extend? • "The timing of funding is critical, we need to know so that we can plan."

Regional Collaboration Insights Summary

The table below outlines feedback on regional collaboration, providing insights on what participants feel is critical to success, identifying concerns and potential barriers, and ideas emerging in the Illawarra.

Table 2: Regional Collaboration Insights Summary

Critical to success	Concerns & barriers	Emerging ideas
• Need to know where we are (data), where we are going (future energy needs & govt intent) and aligned policy directives • Policy directives and incentives create confidence e.g. to take on the risk of investing in future products and modifying processes • Leverage the port - a key region advantage • Coordinate with existing networks and decarbonisation priorities • Integrate the region's diverse players • Build on the strength of community support for industry and bring everyone along the journey • Engage multiple levers to enable and catalyse industrial collaboration - sector coupling, coordinating supply and demand, existing collaboration platforms, scope 3 emissions • Identify deliverables and investment over time. Short, medium and long-term sequencing • Good strategy includes spreading risk, multiple technologies, small bets, anticipating change and adapting, is outcomes focused but flexible enough to let industry innovate • Innovative finance and investment models needed	Stakeholder concerns centre on the commercial and regulatory challenges associated with decarbonisation, energy security risks, fears of politicisation, and the absence of a strong regional group to lead. **Business cases are not stacking up** • There isn't strong customer demand for decarbonisation • Without a carbon price or clear incentives projects are uneconomic **Companies are already facing regulatory challenges on existing decarbonisation projects** • The pipeline for renewables generation is blocked. There is plenty of money but needs proper regulation / policy to incentivise **Energy security and transmission is a concern** • "Transmission infrastructure is a looming challenge for both future hydrogen and renewable electricity. The Illawarra has a unique topographical challenge." • "We need some confidence about the direction government is taking", "It's all about energy security for us." **Other concerns** • Politics in a labour region • A leadership gap • Land supply is tight • Significant energy infrastructure required • Don't have a clear idea of the future energy needs	• Decarbonising heavy industry transport in the region seen as an obvious opportunity • Biofuels provide near-term opportunities for transitioning - biomethane, biodiesel and low caloric value (CV) waste gas • Ideas to expand renewable energy generation and access across diverse technologies • Some interest in green hydrogen with skills in the region, offtake opportunities and possibilities for blending • Carbon capture and utilisation is of interest to many • Circular economy interest, especially for steel (scrap) and dealing with waste in the region • Emerging projects in the pipeline include off-shore wind, electrolysers, electric vehicles • Connect to existing networks and projects such as MECLA, cement pathway and CRCs

Regional Collaboration Insights

What is critical to success for industrial region transition?

Need to know where we are (data), where we are going (future energy needs & government intent) and aligned policy directives

- Understanding the energy balance is key - what is needed?
- "We are missing a starting point for emissions"
- Need to calculate how much thermal and electricity required to satisfy future needs
- Need more intent and guidance from govt - e.g. renewable fuel target (renewable energy target), domestic vs export hydrogen

Policy directives and incentives create confidence e.g. to take on the risk of investing in future products and modifying processes

- We all want to be going in the same direction, moving together
- One region roadmap will enable integration and joined up solutions (not siloes)
- Include the whole Illawarra region, integrate industries and organisations to share solutions
- A roadmap that brings in hydrogen AND industry electricity AND shared infrastructure will catalyse and guide investment
- One vision that the region government, industry, and private enterprise can get around

Leverage the port - a key region advantage

- Deep water port surrounded by highly developed industrial businesses creates import and export potential
- Port proximity to Sydney
- The port is key to green steel with access to markets; it's a competitive advantage over West Australia

Coordinate with existing networks and decarbonisation priorities

- Align with local strategies with decarbonisation themes - there are already a few plans
- Leverage existing strong networks for coordination and leadership e.g. i3Net (brings people together), Regional Development Authority Illawarra, Business Illawarra (skills focus), local council
- Link to existing zero emissions projects
- Need a strong regional group of stakeholders that will follow through to action and commercial outcomes

Integrate the region's diverse players

- Needs to be a multi-level approach - 3 levels of govt, large industries, small business, university, start-ups, municipal waste
- Large base industries in the region are key - steel, cement, ethanol production, transport, mining, Hydrogen supply chain
- Build on the strong supply chain relationships
- Small players want to get involved, will move with large industry
- University of Wollongong has excellent research facilities, high potential for R&D, and is connecting with industry and government with Energy Futures network
- Utilise existing (and planned) hydrogen supply chain, large energy users and significant gas and electricity infrastructure to create opportunities for economies of scale

Build on the strength of community support for industry and bring everyone along the journey

- The region's population is growing and it's attractive to skilled workers - a great location to live and work
- Support for industry has been a strength for a long time and their "interest in transforming the region has never been stronger"
- Engaging with the community and bringing everyone along is hugely important for decarbonisation and to continue industry's social license

Engage multiple levers to enable and catalyse industrial collaboration - sector coupling, coordinating supply and demand, existing collaboration platforms, scope 3 emissions

- Develop the market, downstream demand (inc. govt contracts), to drive industry change and investment, not just technology and capital for new supply
- Sector coupling is key - join up to create step changes (e.g. cement needs fly ash)
- Organisations need to understand each other's desired outcomes and barriers, need to workshop strategies together
- Connect to the existing plans and platforms to support collaboration along the value chain - MECLA, Heavy Industry Low-carbon Transition Cooperative Research Centre, cement industry roadmap
- A Scope 3 focus drives collaboration

Identify deliverables and investment over time - short, medium, and long-term sequencing

- Identify the first piece of catalytic investment
- Identify the critical pilots
- Short term wins build volume and trust
- Identify where there is mutual benefit from shared infrastructure (avoid duplication and give confidence for the big investments)
- Medium term opportunities can solve a longer-term goal
- Identify when product shifts and breakthrough technologies are likely to come through (medium-term)
- Ensure a path to implementation (to avoid roadmap that results in no action)
- Build flexibility into the roadmap: we don't know what the future will be

Good strategy includes spreading risk, multiple technologies, small bets, anticipating change and adapting, is outcomes focused but flexible enough to let industry innovate

- Run trials, build in de-risking, and learn as we go
- "Balance vision with a pragmatic approach; focus on transition not just the end game."
- Skills development and workforce transition is central
- People are needed to realise projects
- Identify the skills needed at different milestones and stages

Innovative finance and investment models needed

- Green premiums are currently insufficient for viable project or industry development and banks are demanding a 5-year payback period.
- Business models and investment models need innovative thinking to bring in investment
- There is a trade-off on Return on Investment with large abatement projects
- Government can help industry de-risk investment

What are stakeholders' concerns and barriers for industrial transition in the Illawarra?

Stakeholder concerns centre on the commercial and regulatory challenges associated with decarbonisation, energy security risks, fears of politicisation, and the absence of a strong regional group to lead.

Business cases are not stacking up

- Decarbonisation projects are competing with other parts of the organisation with higher return investments
- We are a long way off viable $2/kg green hydrogen supply
- There isn't strong customer demand for decarbonisation
- Without a carbon price or clear incentives (like US and Europe) projects are uneconomic
- Low emissions fleet costs and technology jump is big at the moment

Companies are already facing regulatory challenges on existing decarbonisation projects

- The pipeline for renewable generation is blocked. There is plenty of money but needs proper regulation/ policy to incentivise
- A large company in the region is facing approvals challenges in hydrogen
- Certification for injection of renewable gas into the network is a potential barrier

Energy security and transmission is a concern

- "Transmission infrastructure is a looming challenge for both future hydrogen and renewable electricity. The Illawarra has a unique topographical challenge."
- "We need some confidence about the direction government is taking", "It's all about energy security for us."

Other concerns raised

- Some in the group are concerned about perception and politics given that the Illawarra is a Labor region
- There are good regional networks to build on but there is a leadership gap - no strong, ambitious regional group to form collaborations
- Capacity for businesses in the region to work on this - already struggling with business as usual, this is likely to get worse
- Land supply is tight, insufficient for all the projects in the pipeline
- Significant energy infrastructure (gas and power) is required to supply the port area
- Don't have a clear idea of the future energy needs yet

What are the emerging ideas for collaboration and coordination in the Illawarra?

Decarbonising heavy industry transport in the region seen as an obvious opportunity

- Decarbonise the heavy fleet e.g. logistics, buses, trucking etc. through a combination of technologies and energy sources (hydrogen, electric vehicles, biofuels etc.)
- There is already an expansive transport infrastructure and supply network (and mature organisation relationships) in the region which can be leveraged for decarbonisation
- Trucking - many hundreds of trucks per day for BlueScope, mines, Boral
- Transport decarbonisation is a Scope 3 win for BlueScope

- Hydrogen for transport is mature, lower risk and affordable - low hanging fruit
- Develop early green hydrogen demand through transport (including govt procurement)
- Electrification of mining vehicles
- Amplify the use of rail for energy efficiency and better rail services to Sydney for the growing population
- Future Western Sydney rail link will need novel approaches for locomotives (hydrogen?) to overcome the route's technical challenges
- Coregas will have hydrogen refilling

Biofuels provide near-term opportunities for transitioning - biomethane, biodiesel and low CV waste gas

- Sustainable biodiesel blends (5-20%) in heavy vehicles and mining equipment (Ampol is a supplier)
- Existing and planned bulk liquids terminals with biofuels capability
- Jemena is pursuing interest in biofuels (stakeholder workshop)
- Large potential for renewable gas feedstocks (30pJ) plus agricultural waste for biogas
- Biogas as a bridge to hydrogen in the short-term or medium-term
- Potential for alternative fuels in cement kilns (divert from landfill) for up to 80% of electricity demand.
- Biomethane for industrial heat
- An advantage of starting early is the certification network will allow renewable gas to be sourced anywhere on the NSW coast
- Waste gas from steelworks to be used as energy - more opportunity.
- Potential to combine low CV waste with proposed liquified natural gas (LNG) / hydrogen power station for Port Kembla

Ideas to expand renewable energy generation and access across diverse technologies

- Offshore wind (e.g. Oceanex) with the potential to power hydrogen production
- Increase the share of renewables by developing renewable energy zones
- Explore hydro power
- Quick wins can include large scale rooftop solar and community micro-grids
- Explore energy storage facilities, batteries and battery materials e.g. with University of Wollongong

Some interest in green hydrogen with skills in the region, offtake opportunities and possibilities for blending

- Potential for hydrogen gas blending / injection into LNG
- Illawarra hydrogen hub
- Looking at hydrogen direct reduced iron steel
- Planning, supporting and connecting infrastructure is a key enabler for hydrogen
- Projects are underway - hydrogen at Tallawarra
- Introducing SOEC electrolyser technology that can utilise waste heat to further improve electrolyser efficiency
- Toshiba want to manufacture electrolysers
- Residual waste - potentially gasification to generate Hydrogen and separate out CO2 for use in low CV gas power plant
- Potential for renewable energy export - others are thinking big

- Long experience with hydrogen in the region (Coregas)

Carbon capture and utilisation is of interest to many

- Region geology not suitable for CCS
- Feasibility study needed on CCU and CCS in the region, critical for cement and steel industries
- Potential to pump CO2 for use or storage elsewhere (reverse the existing pipelines)
- Boral has a federal govt grant to explore CO2 utilisation in concrete
- Use CRCs for feasibility studies

Circular economy interest, especially for steel (scrap) and dealing with waste in the region

- Consider increased use of scrap steel
- Explore advanced waste processing and resource recovery
- Amplify existing waste-input relationships e.g. slag, limestone

Emerging projects in the pipeline include offshore wind, electrolysers, electric vehicles

- Oceanex offshore wind
- Coregas hydrogen refuelling
- Energy Australia – Tallawarra B
- Ampol rolling out electric vehicle charging infrastructure

Connect to existing networks and projects

- MECLA - Materials and embodied carbon leader's alliance to support regulation and market development for low carbon steel and cement
- Cement industry net zero pathway (to be released soon)
- CRCs

Next Steps – using your input to design the New Low Carbon Industry Foundations stream

The Net Zero Industry and Innovation (NZII) program will use the feedback and insights gained from this and other potential low carbon industrial regions to design the New Low Carbon Industry Foundation stream – a key focus of our efforts towards Net Zero industry in NSW.

If you have any questions or further inputs regarding this Insights document, please contact the New Low Carbon Industry Foundation team at netzeroindustry@environment.nsw.gov.au

Appendix

List of Abbreviations

Abbreviation	
ARENA	Australian Renewable Energy Agency
Australian Industry ETI	Australian Industry Energy Transitions Initiative
CCS	Carbon Capture and Storage
CCU	Carbon Capture and Utilisation
CCUS	Carbon Capture, Utilisation and Storage
CEFC	Clean Energy Finance Corporation
CMP	Clean Manufacturing Precinct
CO2	Carbon Dioxide
CRC	Cooperative Research Centre
CSIRO	Commonwealth Scientific and Industrial Research Organisation
CTI	Clean Technology Innovation
CV	Caloric value
EPA	NSW Environmental Protection Authority
HEI	High Emitting Industries
IP	Intellectual Property
LNG	Liquified Natural Gas
MECLA	Materials and Embodied Carbon Leader's Alliance
MOE	Molten Oxide Electrolysis
NERA	National Energy Resources Australia
NGO	Non-Governmental Organisation
NLCIF	New Low Carbon Industry Foundation
NZII	NSW Net Zero Industry and Innovation
R&D	Research and Development
REZ	Renewable Energy Zone
SMEs	Small-Medium Enterprises

Agenda

Table 3: Agenda Illawarra Part 1

Item	Time	Duration	Description & Speaker
1	9.00	5 mins	**Settle into zoom** Video on, update name and organisation.
2	9.05	15 mins	**Introduction & welcome** Eric Kimmel, Senior Project Officer, Department of Planning, Industry and Environment Meredith England, Principal, Australian Industry Energy Transitions Initiative
3	9.20	20 mins	**Meet & greet region stakeholders** Including an introduction to online working space, miro
4	9.40	45 mins	**Program consultation – what we've heard so far** Eric Kimmel and Bradley Anderson, Senior Project Officer, Department of Planning, Industry and Environment Followed by small group discussion and Q&A
5	10.25	10 mins	BREAK
6	10.35	50 mins	**Program design & approach – New Low Carbon Industry Foundations** Eric Kimmel, Department of Planning, Industry and Environment Followed by small group discussion and Q&A
7	11.25	25mins	**Examples of industrial region transitions** Eric Kimmel, Department of Planning, Industry and Environment Jason Nielsen, Implementation Lead, Australian Industry Energy Transitions Initiative Followed by small group discussion
8	11.50	10mins	**Part 2: session overview & close** Meredith England, Principal, Australian Industry Energy Transitions Initiative

Table 4: Agenda Illawarra Part 2

Item	Time	Duration	Description & Speaker
1	9.00	5 mins	**Settle into zoom** Video on, update name and organisation.
2	9.05	15 mins	**Welcome and Recap Workshop 1** Eric Kimmel, Senior Project Officer, Department of Planning, Industry and Environment Meredith England, Principal, Australian Industry Energy Transitions Initiative
3	9.20	10 mins	**Meet & greet region stakeholders**
4	9:30	60 mins	**Possibilities for Industrial Region Transitions** Eric Kimmel, Department of Planning, Industry and Environment Jason Nielsen, Implementation Lead, Australian Industry Energy Transitions Initiative Followed by Q&A and small group working session
5	10:30	15 mins	BREAK

6	10:45	50 mins	**Developing Collaboration Ideas & Potential for Roadmap Development** Small group working sessions
7	11:35	25 mins	**What's next for the New Low Carbon Industry Foundation program?** Eric Kimmel, Department of Planning, Industry and Environment Followed by discussion
8	12.00	30 mins	Networking Session
9	12:30		Close