

IN ASSOCIATION WITH THE SUSTAINABILITY SOCIETY

CHRISTCHURCH | 26 - 27 MAY 2021

Regenerating New Zealand

CONFERENCE PROGRAMME





DAY 1: WEDNESDAY 26 MAY 2021

CHRISTCHURCH Town Hall, Christchurch

angement with Johnson & Laird Management
Registration and Coffee
Session 1 Conference Opening and Welcome
Limes Room
Mihi Whakatau
Welcome
TE RADAR, MC
HON LIANNE DALZIEL MAYOR OF CHRISTCHURCH
Ministerial Address
HON DR MEGAN WOODS MINISTER OF HOUSING, MINISTER OF ENERGY & RESOURCES, MINISTER
OF RESEARCH, SCIENCE & INNOVATION, ASSOCIATE MINISTER OF FINANCE
De-carbonisation and the Orion Energy Accelerator
PAUL DEAVOLL GM CUSTOMER AND STAKEHOLDER, ORION
Transformation through Systems Innovation!
ANDERS WIJKMAN SWEDISH OPINION LEADER AND AUTHOR
From Strategy to Action. Don't Wait to be Told.
DR ROD CARR CHAIRPERSON, HE POU A RANGI CLIMATE CHANGE COMMISSION
Now is the time for professionals to show themselves. The Climate Science is clear, the direction of
Climate Policy is clear but what remains to be seen is the recognition by many professionals of the challenge and opportunity presented by the need for Climate Action. What part will you tell your
grandchildren you played in the movement to build a thriving, climate resilient, low emissions
Aotearoa?
Morning Tea, Networking, Industry Exhibition
Session 2
Limes Room
A National Energy Strategy – Why it's Essential
MARC ENGLAND CHIEF EXECUTIVE, GENESIS ENERGY
A national energy strategy is a must have for New Zealand to transition successfully to a low carbon
future. There are many different sources of energy with multiple interdependencies that need to be
understood and considered. Pulling on one strand without understanding those can have unintended
consequences for all of us. A national strategy can provide the right sequencing, prioritisation of
actions, ensure reliable, dependable and affordable energy through the transition to the low carbon
future we all want.
Shaping the Future of Zero Carbon Gas in Aotearoa ANGELA OGIER GROUP STRATEGY AND CORPORATE DEVELOPMENT MANAGER, FIRSTGAS GROUP
LIMITED
Firstgas Group owns and operates the gas transmission and distribution pipeline networks in New
Zealand and is committed to helping Aotearoa achieve its climate change goal of zero carbon emissions
by 2050. As part of this commitment, Firstgas Group has investigated what NZ's hydrogen future could
look like and how our network can play its part. In this presentation, Angela Ogier, Firstgas Group
Hydrogen Project Lead outlines the key findings of its Hydrogen Feasibility study and explains a viable
strategy for converting NZ's pipeline networks to 100% hydrogen by 2050.
Zero Emission Hydrogen Fuel Cell Trucks and Nationwide Refuelling Network
RYAN MCDONALD HEAD OF NEW BUSINESS, HIRINGA ENERGY
Hiringa Energy and partners are bringing zero-emission hydrogen fuel cell electric trucks to New
Zealand and establishing a nationwide green hydrogen refuelling network. The trucks have similar
range, payload capabilities and refuelling times as diesel trucks. The first 25 trucks will be entering service by the end of 2022. We look forward sharing how unlocking the hydrogen opportunity creates a
long-term competitive advantage for kiwi businesses and providing an update on the zero-emission
aerospace sector.
I delusuace sectui.

7.33piii - 7.30piii	Avon Room
5.33pm - 7.30pm	Cocktail Function Proudly Sponsored by
5.30pm	Invitation and Welcome to Cocktail Function BEN THOMSON MANAGER – ENERGY AND CARBON LUMEN
E 20nm	HON JAMES SHAW MINISTER OF CLIMATE CHANGE, ASSOCIATE MINISTER FOR THE ENVIRONMENT
5.00pm	Ministerial Address
	COMMITTEE) CEP BOARD
	YVONNE GILMORE CHAIR, BEN THOMSON, TASC (TRAINING AND ACCREDITATION SUB
4.30pm	CEP Direction and Certification Framework
4.20	programme.
	towards the Government's targets. This information will support CEP's critically important training
	training. She'll show how training outcomes can – and must – be developed that track our progress
	developed a Success Framework of seven essential elements that support effective environmental
	legislation. But what makes for "good" training? Based on years of experience, Clare Feeney has
	We've never needed workforce training more than we do now, as we face a raft of new environmental
	CLARE FEENEY DIRECTOR, ENVIRONMENTAL COMMUNICATIONS LTD
	Carbon Economy
4.00pm	Training the Workforce of Tomorrow: A Carbon-Smart Workforce and a Just Transition to a Net Zero
	GLENN WELLINGTON SECTOR PROGRAMME MANAGER, EECA
3.55pm	EECA's Sector Decarbonisation Programme
	Limes Room
	Session 4
3.30pm	Afternoon Tea, Networking, Industry Exhibition
2 20	exactly where are these funds being deployed and what part will energy professionals play?
	being deployed across EECA's three key levers of co-investment, motivating people and regulation. So
	support the Government's objective of achieving a net zero emissions Society by 2050. These funds a
	substantially. EECA has been the recipient of much of this funding as it is increasingly being tasked to
	through both annual budget cycles and more latterly the post COVID recovery initiatives has increased
	What's Hot and what's Not. Over the past 18 months the funding being committed to decarbonisation
	ANDREW CASELEY CHIEF EXECUTIVE, EECA
3.00pm	EECA's Part in the Decarbonisation Journey
2.00****	standards internationally on how business report on sustainability issues, including in New Zealand.
	sector, investors, large corporates, and listed SMEs, wherever their activities take place. This will set
	system for sustainable economic activities. Its use is made compulsory for reporting by the EU financia
	finance and the corporate sector to do their share, the EU designed the world's first classification
	The EU has set itself the goal of becoming the first climate neutral continent. To mobilise private
	CAROLINE LAMBERT HEAD OF TRADE, DELEGATION OF THE EUROPEAN UNION
	New Zealand?
2.30pm	Europe's Man on the Moon Moment: What the EU Green Deal's Sustainable Finance Efforts Mean fo
	members help?
	What do businesses and organisations need to do to take meaningful climate action and how can CEP
	and deliver their decarbonisation projects, and measure the results.
	Organisations need expert support to help them develop their strategies, build business cases, scope
	action. These rapid changes open exciting opportunities for Carbon and Energy Professionals.
	Globally and locally we are seeing an acceleration in businesses and public sector entities taking clima
	BECKY LLOYD CHIEF EXECUTIVE, TOITŪ ENVIROCARE
2.00pm	Climate Leadership – Stepping Up in 2021
	Limes Room
	Session 3 Limes Room

DAY 2: THURSDAY 27 MAY 2021 CHRISTCHURCH TOWN HALL, CHRISTCHURCH

	D		
7.30am	Registration and Coffee		
8.00am	Carbon and Energy Professionals New Zealand Ann	nual General Meeting – Open to CEP Members Onl	
	Limes Room		
	Session 5		
	Limes Room		
8.55am	Housekeeping		
9.00am	Steam Thermal Solutions: Efficient, Safer, Sustaina	ble	
	SHARON SHAH NATIONAL SALES AND DESIGN MA	ANAGER – STEAM BUSINESS SPIRAX SARCO	
9.05am	Data Driven Materials Innovation for a Circular Eco	onomy	
	KRISHNA RAJAN SUNY DISTINGUISHED PROFESSO	OR AND ERIC BLOCH CHAIR, UNIVERSITY AT	
	BUFFALO		
	This talk will explore the challenges in advancing en		
	regenerative manner taking into account their envir		
	depend on materials performance and finding alter		
	circular economy paradigm; without compromising	= -	
	presentation we describe how data driven methods		
	identifying new chemistries and/or selection of new		
	Session 6a	Session 6b	
0.55	Limes Room	Victoria Room	
9.55am	Solar Energy Opportunities for New Zealand	Wastewater Process Emissions	
	ERIC JANSSEUNE MASTER ENVIRONMENTAL	REUBEN BOUMAN SENIOR ASSOCIATE -	
	New Zealand's energy needs are high and	PROCESS ENGINEER, BECA	
	electricity use is one of the highest per capita	Wastewater treatment and disposal is a source of greenhouse gas emissions, notably nitrous oxide	
	worldwide.	and methane. For many Councils around New	
	worldwide.	Zealand, these emissions are estimated to	
	Almost 80% of electricity production in NZ is from	contribute a large portion (>50%) to their	
	renewable resources, wind, geo and hydro, but	organisational baselines, so are receiving	
	this represents only a small fraction from the total	particular focus to be able to better estimate,	
	energy mix. Valuable electricity is lost during	measure and reduce these emissions in line with	
	production, transport and distribution, as well as	net zero carbon targets.	
	at energy end-use. Electrical heating, hot water	This presentation summarises wastewater	
	production and cooking are very inefficient.	treatment emissions as calculated using the IPCC	
		Guidelines methodology, and provides a number	
	Solar energy, the most abundant renewable	of case study emissions estimates from plants	
	energy source worldwide, is NOT on the map in	around New Zealand. Additionally, current and	
	the NZ energy mix. Scepticism towards solar	future work in the wastewater emissions space is	
	energy is very high while the many opportunities	outlined, including the development of a	
	are infinite, but NOT taken in account in the NZ	standardised wastewater emissions estimating	
	Energy Outlook for 2030-2050.	methodology for New Zealand, as well as work to	
		try and establish on-site testing of emissions at	
		treatment plants around the country.	
10.25am	How can we Decarbonise Space Heating and	The Importance of Managing Infrastructure	
	DHW Systems in New and Existing Buildings?	Carbon	
	MARCUS BAKER LEAD DESIGNER AND	NICK DEMPSEY TECHNICAL DIRECTOR, MOTT	
	MANAGING DIRECTOR, APRICUS NZ ECO ENERGY	MACDONALD	
	There is an immediate need to remove fossil fuel	Overseas trends show us that it is increasingly	
	infrastructure from new building designs and a huge demand for replacement in existing	important for asset owners to drive down the emissions from constructing new assets. In New	
	buildings. So what is available today and how	Zealand, this is even more pronounced because of	
	realistic is the objective of zero carbon heating	our relatively green energy grid. In this	
	and hot water systems? This session is a practical,	presentation, Nick will discuss why this is	
	case study dominated exploration of current	important, the structured approaches and tools	
	technologies that are replacing fossil fuel	that are available for managing and collaborating	
	boilers. Focussed on wood pellet boilers, CO2 hot	to drive down these emissions, and cover	
	water heat pumps and solar thermal technologies,	international examples.	
	including associated considerations for fuel	memational examples.	
	storage and delivery, thermal storage and back up		
	heating.		

	Session 7a Limes Room	Session 7b
11.20am	The Atmospheric Physics of Naturally Cooling the	Victoria Room A Roadmap to No Coal Usage in the South Island
11.20a111	Climate in Time	JONATHAN POOCH FOUNDER AND MANAGING
	WALTER JEHNE DIRECTOR, REGENERATE EARTH	DIRECTOR, DETA CONSULTING
	After 50 years of talk we need urgent action to	The South Island has in excess of 1GW of installed
	address the dangerous hydrological extremes we	coal boiler capacity. EECA's Energy Transition
	have intensified and threaten our bio-systems and	Accelerator (ETA) programme is making great
	future. To safely and naturally cool our climate.	progress in developing long term decarbonisation
	future. To safety and flaturally cool our climate.	plans for large users. The question is, how are th
	Fortunately we still can but only if we respect and	plans and future energy needs of these sites goin
	Fortunately we still can but only if we respect and restore the physics and processes governing the	to interact and impact each other? Will there be
	natural heat dynamics of the blue planet. If we	enough biomass and/or electricity to deliver the
	restore the hydrological processes regulating	required transition? In this presentation,
	these extremes and most of the abnormal	Jonathan will explore the ETA programme
	greenhouse effect. If we see beyond methane	
		outcomes so far, and outline some work that is currently being done to aggregate the
	myths to manage herbivores and the hydrological	
	photo-oxidation processes that have kept methane levels minimal for Millenia.	decarbonisation plans of all South Island thermal
	methane levels minimal for Millenia.	fuel users, and the impact these plans will have o
	Dusiness andhinking as your lawar/t de this	the future of energy usage.
	Business or thinking as usual won't do this.	
12 10	Practical innovative lead actions can.	Decarbonising Heat: Denous Biograph Boll C
12.10pm	Smart-Service Innovation: How we can be Great	Decarbonizing Heat: Danone Biomass Boiler Cas
	Hosts and Conserve Resources at the Same Time	Study
	SUSANNE BECKEN PROFESSOR, SUSTAINABLE	LOÏC MAHE ENGINEERING AND CAPEX
	TOURISM, GRIFFITH UNIVERSITY	MANAGER, DANONE
	Considerable progress has been made to improve	Inspired by its Corporate engagement "One Plane
	the resource efficiency of tourist accommodation.	One Health" and its iconic brand "Karicare"
	However, the focus has often been on technical	commitment, Danone Nutricia has engaged an
	solutions, whilst engaging guests has been limited	ambitious transformation plan to convert its
	to highly specific interventions, (e.g. no new	Balclutha Spraydrying site into a Carbon Neutral
	towels). This presentation introduces an	site. The journey has started 5 years ago and,
	integrated approach that uses smart technology	after many challenges and hurdles, it is now
	combined with guest communication, to help	coming to life with the commissioning of its new
	conserve energy, water, and gas in	biomass boiler, starting in Q3-2021. Loïc Mahe,
	accommodation. An example from Australia	New-Zealand Engineering manager, will present
	illustrates the opportunity and links it to the	the facts and figures about this case study, as we
	concept of regenerative tourism.	as the challenges and learnings from this
		incredible adventure, who has put together the
12.12		best of Kiwi and international expertise.
12.40pm	STUDENT POSTER PRESENTATIONS	Practical Realities of Converting Coal Boilers to
		Renewable Energy
	Dapp Zero	STACEY FELLOWS ENGINEERING MANAGER -
	ABHINAV RAKESH CHOPRA UNIVERSITY OF	ENERGY AND UTILITIES, FONTERRA
	AUCKLAND	For Fonterra to switch to low carbon energy
	Form Francis ()	options it is imperative to prove boiler conversio
	Energy Extraction from Low-Temperature	technologies without affecting the ability to
	Geothermal Resources in Hydrocarbon Fields of	process milk. Fonterra shall be sharing experience
	Taranaki Region	of learnings and risks of converting from coal as
	ROHIT DUGGAL VICTORIA UNIVERSITY OF	fuel source at Brightwater and Te Awamutu to
	WELLINGTON	renewable energy. At Brightwater by co-firing
		wood biomass with coal and at Te Awamutu
	Building for net-zero carbon	through the 100% boiler conversion from coal to
	ALICE BUI MASSEY UNIVERSITY	wood pellets
	Transition of Commercial Buildings to Low	
	Carbon: Assessment and Intervention (A&I)	
	Design Focused on Occupants' Behaviour	
	Towards a Shift in Energy Use for Space Heating	
	ISABEL ANDRADE UNIVERSITY OF CANTERBURY	
1.05pm	Lunch, Networking, Industry Exhibition	

	Session 8a	Session 8b
	Limes Room	Victoria Room
2.00pm	Decarbonisation of the Energy Sector:	Advanced Energy Analysis: Moving from Algebra
	Opportunities in the 2020s	to Calculus
	RICHARD HOBBS GENERAL MANAGER	ROB BISHOP ENERGY EFFICIENCY CONSULTANT
	STRATEGY AND CUSTOMER, TRANSPOWER	ENERGY SOLUTIONS
	How is New Zealand's energy sector contributing	Energy accounting traditionally follows simple
	to meeting the country's climate change	algebraic processes for tracking energy
	commitments? What are the largest areas of	consumption versus targets, and ensuring that
	opportunity to kick start emissions reductions in	intended reductions actually occur.
	the 2020s to meet New Zealand's 2030 Paris	These processes are valuable but miss much of
	target? This presentation will outline how we are	the analytical value of energy accounting.
	tracking as an energy sector and the opportunities	Calculus, which explicitly analyses the changes
	that exist to accelerate decarbonisation. It will	that occur over time, can be used to show the
	also outline the key policy, commercial and	effects of changes in energy performance over
	consumer levers available to achieve this vision.	time much more clearly than conventional
		algebraic analysis.
2 20	Town coals Color Forms and Microsoft	Advanced Measurement and Verification
2.30pm	Town-scale Solar Farm and Microgrid	
	Development	Methods 'M&V 2.0'
	SIMON FRANKLIN MANAGING DIRECTOR, ITP	LIA WEBSTER SENIOR ENGINEER PRINCIPAL,
	RENEWABLES	FACILITY ENERGY SOLUTIONS
	ITP Development has a philosophy that it is	Advanced measurement and verification
	technically and economically feasible for many	methods, or 'M&V 2.0', is an important
	regional towns to have solar farms and microgrids	development in reporting energy and carbon
	at a "town-scale" (5-20MW) designed to match	savings. Adoption of newer analytical tools that
	current and future electricity demand, providing	leverage whole-building interval energy data to
	·	
	locally sourced renewable energy into the local	determine savings has been rapid, but technical
	distribution grid. ITP is exploring the potential to	savvy is required to properly apply them. The
	bring this approach to New Zealand.	International Performance Measurement and
		Verification Protocol (IPMVP) provides the basis
		for M&V, including these advanced methods, and
		continues to develop new guidance to support
		industry's adoption of best-practices.
3.00pm	Accelerating Low-carbon Innovation	Christchurch City Council Internal and External
3.00pm	_	_
	SHERALEE MACDONALD	Resource Efficiency and GHG Emission Reduction
	ENVIRONMENTAL TECH COMMERCIALISATION	Initiatives
	As sustainability and carbon/energy professionals,	KEVIN CRUTCHLEY RESOURCE EFFICIENCY
	we have a role to play in accelerating uptake of	MANAGER, STRATEGIC POLICY UNIT,
	low carbon and sustainability solutions. You may	CHRISTCHURCH CITY COUNCIL
	even have ideas of your own to commercialise!	This presentation will include:
	Getting early market feedback, demonstration	Council's Internal Resource Efficiency and GHG
	customers and industry mentors is crucial to	Emission programme of work – Covering the
		_ · -
	entrepreneurs turning their ideas into real	delivery structure and some of the implemented
	products and services that reduce emissions.	initiatives.
	Get an overview of the Lean Startup process, hear	Target Sustainability services for businesses –
	about some new solutions that are in market	Covering this Council service and some of the
	demonstration phase, and learn about upcoming	implemented initiatives.
	innovation programmes (Orion Energy	Battery electric vehicle initiatives – Covering a
	Accelerator/Climate Response Accelerator) and	number of Christchurch implemented initiatives
	what new solutions might become part of your	battery electric car sharing service, battery
	own tool kits in the future.	electric buses, battery electric aircraft, charging
		infrastructure and the Take Charge Christchurch
3 25nm	Afternoon Tea Networking Industry Exhibition	programme.
3.25pm	Afternoon Tea, Networking, Industry Exhibition	programme.
3.25pm	Afternoon Tea, Networking, Industry Exhibition Session 9 Limes Room	programme.

3.55pm	A New Tool to Help Transition Aotearoa's Buildings to Carbon Zero
	SAM ARCHER DIRECTOR OF MARKET TRANSFORMATION, THE NEW ZEALAND GREEN BUILDING
	COUNCIL
	There is an urgent need to get our buildings to lower carbon. Toitu and the NZ Green Building Council
	have launched a new certification for any building type to gain carbon zero certification. Sam will
	discuss the way the methodology works, it's base energy efficiency requirements, how to measure
	other carbon impacts such as water use, refrigerant use, waste and the process for both office and non
	office buildings. Buildings make up 20% of our carbon emissions. Come along to hear how this tool
	applies to your projects and can help deliver a lower carbon Aotearoa.
4.20pm	Human Centric Lighting Implications for Healthy Sustainable Buildings
	BIANCA VAN DER ZANDE TOPIC LEAD HUMAN CENTRIC LIGHTING, SIGNIFY
	In 2015 the United Nations Member States adopted 17 global sustainability development goals as a
	universal call to action to end poverty, protect the planet and ensure that all people enjoy peace and
	prosperity by 2030. Amongst those 17 one relates to good health and wellbeing (SDG 3). That raises the
	question, what makes a healthy sustainable building? And how can indoor lighting contribute? The
	science behind the importance of, daytime light for people, as well as the implication for building
	design requirements, like WELL Building Certification to provide for healthy and productive
	environments will be touched upon.
4.45pm	Conference Reflections / Wrap up
5.00pm	Conference Closure

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The Conference Managers, ForumPoint2 Limited, in conjunction with the CEP Conference and Exhibition 2021 Organising Committee and the venue are morally and legally responsible to provide a safe and healthy environment for all attendees at conference. This commitment extends to ensuring the conference operations do not place the local community at risk of any injury, illness or property damage.

All measures within our ability will be undertaken to ensure that attendees are as informed as possible about any potential risks or hazards they may face whilst attending conference.

All attendees will need to:

- Listen to the health and safety briefing onsite and/or read the health and safety document available at the registration desk
- Ensure all health and safety concerns; and all accidents or near misses are immediately reported to the safety officer on site

All attendees are encouraged to be responsible for promoting a safe and healthy working environment for the entire conference duration.

COVID-19 - MINISTRY OF HEALTH GUIDELINES

We respectfully advise attendees, the conference will be following the Unite Against COVID-19 New Zealand Government advice for public events and mass gatherings.

Prior to conference, we would remind you:

- If you are: unwell, a confirmed or probable case of COVID-19, waiting a COVID-19 test result or self-isolating, please do not attend.
- If you become unwell during the event, self-isolate immediately and call Healthline 0800 358 5453 for guidance and notify Paula Armstrong, ForumPoint2, 027 649 2081 immediately. The ForumPoint2 team carry PPE if you require it.

A First Aid kit is located at the conference registration desk. The closest defibrillator is located at the foyer of the Christchurch Town Hall.

In the event emergency medical assistance is required, please call 111 from the nearest phone/mobile.

The nearest medical centre to the Christchurch Town Hall is:

Pegasus Health 24 Hour Surgery 401 Madras Street, Christchurch T: (03) 365 7777 Open 24 Hours

The nearest pharmacy is:

Unichem Forte Pharmacy and Post

132 Peterborough Street, Christchurch Central City T: 03 595 5493 Open Monday - Friday 8.30am – 5.30pm

Fire and emergency:

In the event of fire:

- On the discovery of fire, immediately activate an alarm and notify the ForumPoint2 team or venue staff
- Upon hearing alarms, STOP WORK, evacuate immediately. Further instructions may be provided from the venue, please follow all directions
- Designated wardens will be on hand to guide you to the nearest emergency evacuation assembly area
- · Proceed immediately to your nearest exit as instructed. Always use the stairs, never the lift
- Await further instructions or clearance for the wardens for an orderly re-entry
- Fire hoses and fire alarm switches must remain visible and accessible to the public at all times

Earthquake Evacuation:

- Remain in the building
- Move away from any equipment, windows or large furniture
- Take immediate shelter under solid furniture such as tables or desks
- If an evacuation order is given, follow the fire evacuation procedures
- Keep calm and assist those around you

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• All accidents and incidents must be reported immediately to the conference registration desk or Paula Armstrong, ForumPoint2 Conference Partners, 027 649 2081.

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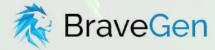
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