

NZWEA 2021 AGM

Welcome





Chair's Report

2021 AGM

Blair Walter, Chair, NZ Wind Energy Association
October 2021

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- About NZWEA
- Board Composition
- Strategy
- Financial Performance
- International Trends



About NZWEA

- Established 1997
- An industry association
 - Promotes the development of wind as a reliable, sustainable, clean and commercially viable energy source
 - Policy & regulatory advocacy, public awareness and industry development
- Represents over 60 members:
 - Generators and developers
 - Turbine manufacturers, equipment suppliers, consultants
 - Increase of 36% in Corporate and Associate level memberships
 - 3 recent offshore wind developers
- Utility scale generation
 - Also supporting smaller scale and community wind initiatives

NZWEA Board



- Election for
 - Three members representing Corporates
 - Two representing Associates / Individuals
- Board composition
 - Blair Walter (Aurecon) – 2 year term
 - Chris More (Meridian Energy) – 2 year term
 - Todd Mead (Trustpower) – 2 year term
 - Rose Divjak (DNV GL) – 2 year term
 - Paul Botha (Roaring40s Wind Power) - 2 year term
 - Dennis Radich (Mercury) – 1 year remaining
 - Peter McCafferty (Beca) – 1 year remaining
 - Mark Ashby (4Sight Consulting) – 1 year remaining
 - Rob Mackie (Higgins) – 1 year remaining
- Retired
 - Philip Wong Too (sale of Tilt Renewables)



Strategic Focus

- 3 key strategies:
 - Leveraging NZ's emission reduction imperative to enable the energy transition to renewables, particularly wind energy
 - Optimising wind energy's position and ensure the regulatory environment supports wind farm development
 - Expanding the opportunity for wind energy development to enable community and industrial projects including wind's integration with other technologies
- Progress across priority areas
 - Climate Change Commission's Final Report and draft emissions budgets
 - Electricity sector recognised as key to lowering carbon emissions
 - Resource management system reform underway
 - Association active in engagement with positive results
 - Need to recognise and prepare for significant growth – 0.6 to 6.0 GW
- Ongoing focus on health and safety programme
 - New challenges with wind farm construction underway

Financial Performance

- Association has faced challenging times
 - Lack of development and Covid has impacted results from 2015 - 2020
 - Recent wind investment and 2021 Conference key turning points
- 2021 Result
 - Surplus of \$67k, an improvement from deficit of \$16k in 2020 (no conference)
 - 2021 Conference had the InterContinental at capacity
 - Membership increasing
- Ability to invest in additional capacity
 - Recruitment of a communications and administration manager
 - Focus on enhancing website and wind energy positioning
- Outlook improved but risks remain
 - Potential Covid -19 impacts
 - Speed of decarbonisation / timing of demand growth / rapid solar deployment
 - Energy transition and ensuring security of supply
 - Resource management system reform outcomes
 - Other regulatory intervention

International Trends

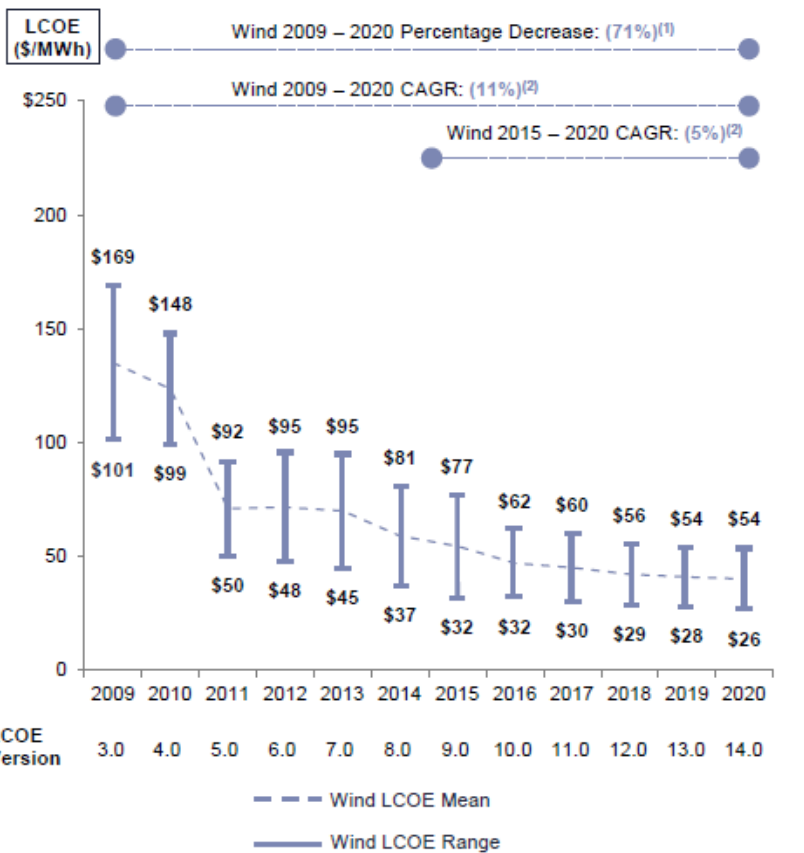


- Outlook positive
 - Technology, price and need for emission reductions
 - Transforming from subsidies to a purely commercial model
 - Offshore wind price breakthrough
- Cumulative wind capacity 743 GW
 - 93 GW new capacity in 2020 - a 53% increase on 2019
 - Onshore growth 87 GW to total 708 GW
 - Offshore growth 6.1 GW to total 35 GW
 - Key markets US and China account for 60% of new capacity
- Market Outlook
 - Market growth slowing due to expiry of incentive schemes
 - But over 469 GW new capacity over next 5 years
 - CAGR offshore wind of 32% adds 70 GW by 2025
 - Net Zero imperative
 - Wind as an enabling technology for green hydrogen

The declining cost of renewables

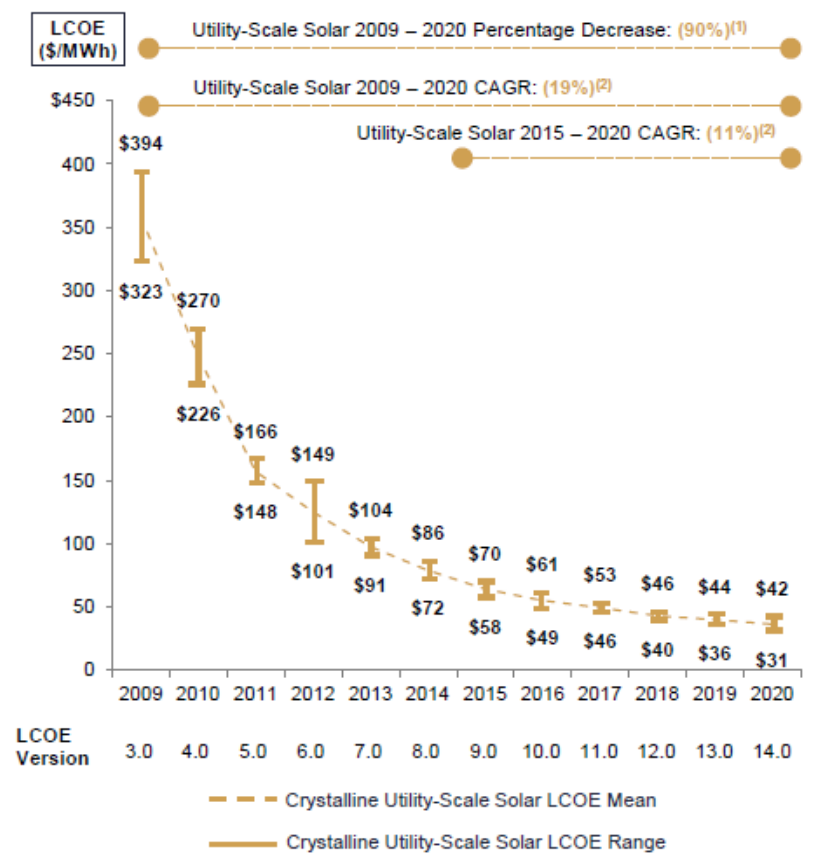


Unsubsidized Wind LCOE



Lazard LCOE 14.0

Unsubsidized Solar PV LCOE



Turbine prices have increased 10-15% in last six months due to commodity price increases and shipping cost increases – hopefully temporary

Australian Update



- Renewable energy was 24% of generation in 2020
 - Solar 9.0%, Wind 8.5% Hydro 5.6%
 - Grid scale solar 8,000 GWh (3.1%)
 - Tasmania 98% renewable and South Australia 58%
- Federal policy is still a mess but increasing pressure to commit to net zero; different policies and support in each state
- Grid connection is still a challenge and in risks are now being pushed back from EPC Contractors to developers and owners
- Despite challenges, Australia is still seeing massive investment in development and construction of new renewables, with a recent swing back to wind as the value of solar PV has deteriorated
- Mega projects onshore and a rapidly developing offshore wind sector
- Pull through by new demand sources, in particular hydrogen production for export



CE Report

2021 AGM

Grenville Gaskell, Chief Executive, NZ Wind Energy Association
October 2021

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- NZ Development Update
- Offshore Wind
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NZ Update

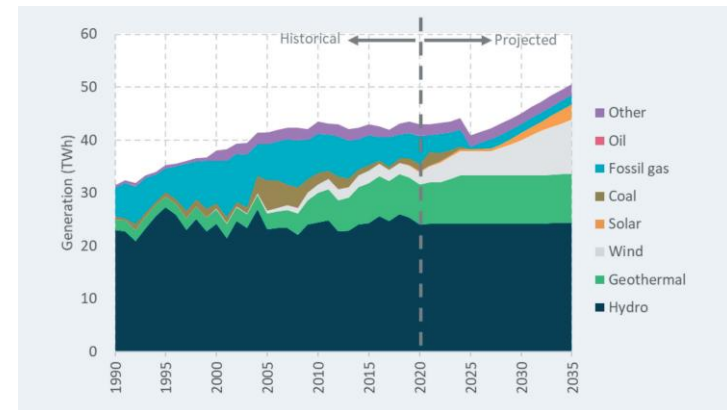


- Waipipi (133 MW) the first build since 2014
- Installed capacity now 823 MW (690 MW in 2020)
- 398 MW under construction (Turitea and Harapaki)
- Total investment over \$1.1 billion
- Mt Cass (93 MW), Kapuni (24 MW) and Kaiwaikawe (73 MW) key prospects
- Puketoi (159 MW) post Turitea completion
- Future potential - Te Rere Hau (130 MW) and Tararua (72 MW) repowering and Kaimai (150 MW) to be consented
- Community wind - Paekakariki the lead prospect but land access challenging



Can only be the Waipipi Wind farm!

Growth Forecast	Total MW		No. New Wind Farms	1 Farm Every (Mths)
	2035	2050		
CCC - Demonstration pathway	2,900		17	10
CCC - Tiwai stays scenario	3,900		27	6
Transpower - Te Mauri Hiko		6,500	53	7



Source: Climate Change Commission

Tiwai and NZ Battery



Tiwai

- Supply agreement for 572 MW until 31 December 2024
- Stay or go Tiwai does not change the longer term outlook for wind
- Clutha Upper Waitaki Lines upgrade completion date April 2022
- Transpower estimate of capacity now 1180 MW
- Analyst reports
 - High aluminium prices will keep smelter open after 2024
 - A carbon hedge
 - NZAS has the ability to outbid any hydrogen project
 - Smelter remaining may advance Southland wind farm development
- CCC modelling has wind at 2,700 MW (smelter goes) or 3,800 MW (smelter stays) by 2035
- Meridian / Contact Southern green hydrogen – 81 responses to ROI

NZ Battery Project

- Project positive for renewables
 - NZWEA supports developing dry year risk options
 - Supports renewables variability and creates additional demand
- Contract awarded for Onslow fieldwork and design, other options RFP in progress
- Initial investigation of options to be completed by May 2022

Developing offshore wind in New Zealand



➤ Developer Feedback

- New entrants recognise NZ's offshore wind potential and are interested in progressing development opportunities
- Require some level of certainty to progress projects such as an exploration license
- Appropriate guarantees and performance standards needed
- Government commitment to developing a regulatory framework
- A collaborative and engaging approach including with Iwi

➤ Next Steps

- Government recognition of the importance of developing a licensing / regulatory framework
- Exploration licensing development included in MBIE workplan
- Allocated resource within MBIE as a key contact point with developers / the industry
- Consideration of offshore wind energy as an export opportunity

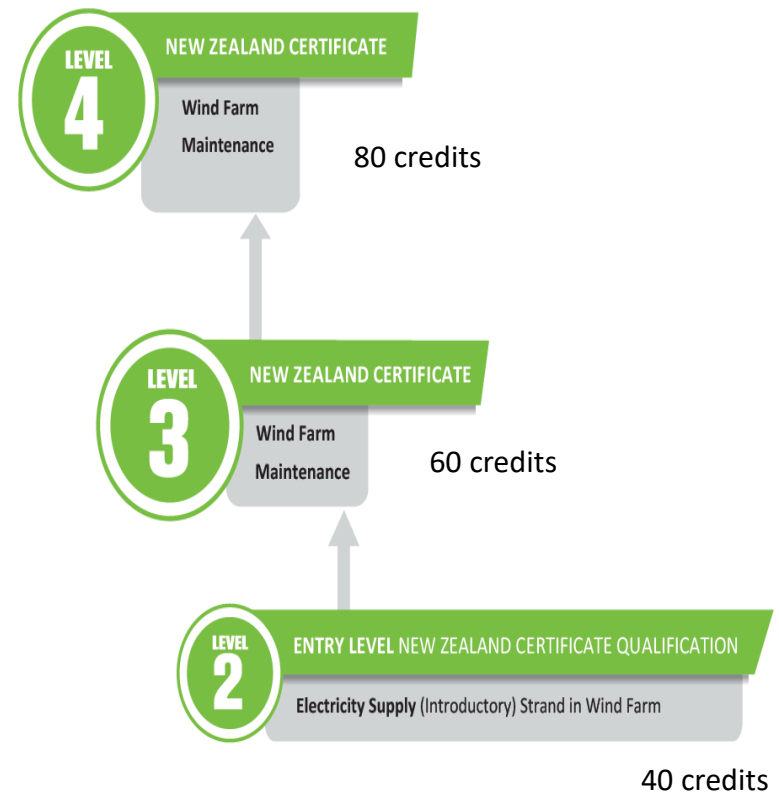


Some highlights...

- Investment in new builds and options development
- Sell-out wind energy conference
- Membership growth and improved financial position
- Emissions reduction budgets are coming
- Commitment to strengthening the NPS-REG
 - Dependency on resource management system reform
 - Unified industry position on NBA consultation
 - Potential to enable for small scale developments
- Health and Safety - a shared priority
- ETS reform
 - A cap on emissions and carbon price supporting renewables development
- Establishment of a wind PPA market supporting development
- NZ Battery Project (dry year options)
 - A solution essential to meeting the energy trilemma
- Transpower's new connection and net zero grid projects
- Engagement with Department of Conservation
 - Potential for a nationally consistent approach to wind farm consenting

Industry Training

- Development of the Certificate in Wind Farm Maintenance
- 3 levels - combining mechanical, electrical and hydraulic competencies
- Developed with Connexis / Waihanga
- Level 3 (maintenance) and level 4 (Repair) NZQA approved
- Unit standards developed
- Learning and assessment resources being developed
- Registration of assessors underway
- Release of programmes
 - Level 3 programme - April 2022
 - Level 4 programme - July 2022
 - Level 2 programme - July 2022 / Feb 2023
- Key opportunity to future proofing technician capability



Areas of Focus...

- Health and safety
- Strengthen national direction to support renewables development
 - Resource management system reform
 - Offshore wind licensing / regulatory framework
 - Includes NPS Indigenous biodiversity and NES Freshwater revisions
- Advocacy with ministers and officials
- Supporting development of an integrated energy sector strategy
- Wind positioning and website development
- Transmission pricing methodology
 - Provide investment certainty and unlock South Island development
- DoC relationship
- Retail tariff reform
 - Effective peak price signals to improve sector efficiency
 - Encourages innovation - demand side management / load shifting
- Wind farm technician programme fully implemented
- Opportunity for wind to support green hydrogen

Perspectives on RM System Reform



The Positives

- Recognition the RMA / NPS Renewable Electricity Generation are not effective
- Reform objectives – better enable development within limits, adapting to climate change and improving system efficiency and effectiveness
- Recognition of the need for a long term and integrated strategic approach with greater national direction and fewer plans

NZWEA and Industry Concerns

- Risk of inappropriately set environmental limits which are absolute in their application
- Number and nature of outcomes creates a natural tension that will require effective conflict resolution provisions
- Potential for mis-alignment of environmental, energy and climate change targets and policies

Our Wishlist

- Environmental limits linked to the 2050 emissions target and budgets
- Hierarchy of clear priorities and requiring conflict resolution through the NPF

Summary

- Wind energy recognised as key to decarbonising the NZ energy sector
- Outlook exciting but there are risks to manage:
 - Demand growth / renewables transition and security of supply
 - Turbine and shipping cost pressures evident
 - Timely investment in a development pathway and ability to obtain consents
 - Transmission capacity and pricing
- Opportunities
 - Enhancing the environment to support onshore and offshore wind development
 - Consideration of a higher renewable electricity target as an export opportunity





Thank you

