ENERGY EDUCATION

Mauri mahi, mauri ora

ENERGY NEWS FROM THE REGION, COUNTRY AND WORLD | NOVEMBER 2022

EVolocity returned to Taranaki in 2022

EVolocity ran its regional finals on 15 October, on a stunning spring day at KartSport Taranaki at Waitara.

The event was organised by Sarah Fitzgerald, CE of EVolocity New Zealand, in conjunction with WITT Te Pūkenga, Ara Ake, and many of the regional secondary schools.

"Exposing students to possible new energy career pathways was one of the reasons the WITT Te Pūkenga supports the EVolocity programme," says Kyle Hall, Director of Engineering, Energy & Infrastructure

"Students are learning electrical, mechanical, welding and automotive skills. EVolocity gives them a taste of what WITT Te Pūkenga has to offer, such as the Bachelor of Engineering Technology, but also of the trades. These skills will be highly valuable as New Zealand forges ahead to its goal of net zero emissions by 2050."

Overall Performance Winners:
Standard Kart: Fast and Furriest, Highlands Intermediate
Standard Bike: Spotty Gorillaz, Spotswood College
Open Kart: Four Wheel Magic, New Plymouth Girls High

Individual Event Winners:
Drag: Ackerman's Army, Spotswood College (Standard Class Kart)
Gymkhana: Four Wheel Magic, New Plymouth Girls High School (Open Class Kart)
Endurance: NPBHS1, New Plymouth Boys' High School (Standard Kart)
Efficiency: NPBHS2, New Plymouth Boys' High School (Standard Kart)

Special Awards:
Innovation B: Ackermann's Army, Spotswood College
Earth Care: NPBHS1
Showstopper Award: NPBHS1, New Plymouth Boys' High

New Zealand nziht School of Engineering, Energy and Infrastructure

VICTORIA UNIVERSITY OF WELLINGTON TE HERENGA WAKA

UC UNIVERSITY OF CANTERBURY Te Whare Wānanga o Waitaha CHRISTCHURCH NEW ZEALAND

ENERGY EDUCATION
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A Centre of Excellence in Energy & Engineering will:

- Support the growth of excellent vocational education with a focus on teaching, learning and research.
- Support the development and sharing of high-quality curriculum and programme design.
- Be a consortium with expert representation from industry, the wider sector, and a range of other areas, for example iwi and vocational education representatives.
- Have a national focus.
- Be hosted by a regional campus of Te Pūkenga.
- Address issues and opportunities with a significant strategic impact, ideally with wide-reaching benefits across the sector.
- Solve real problems and grasp viable opportunities.

Te Pūkenga

Taranaki EVolocity Finals

Bill Dube and Eva Hakansson (special guest judges), with Sarah Fitzgerald (centre), CEO for EVolocity

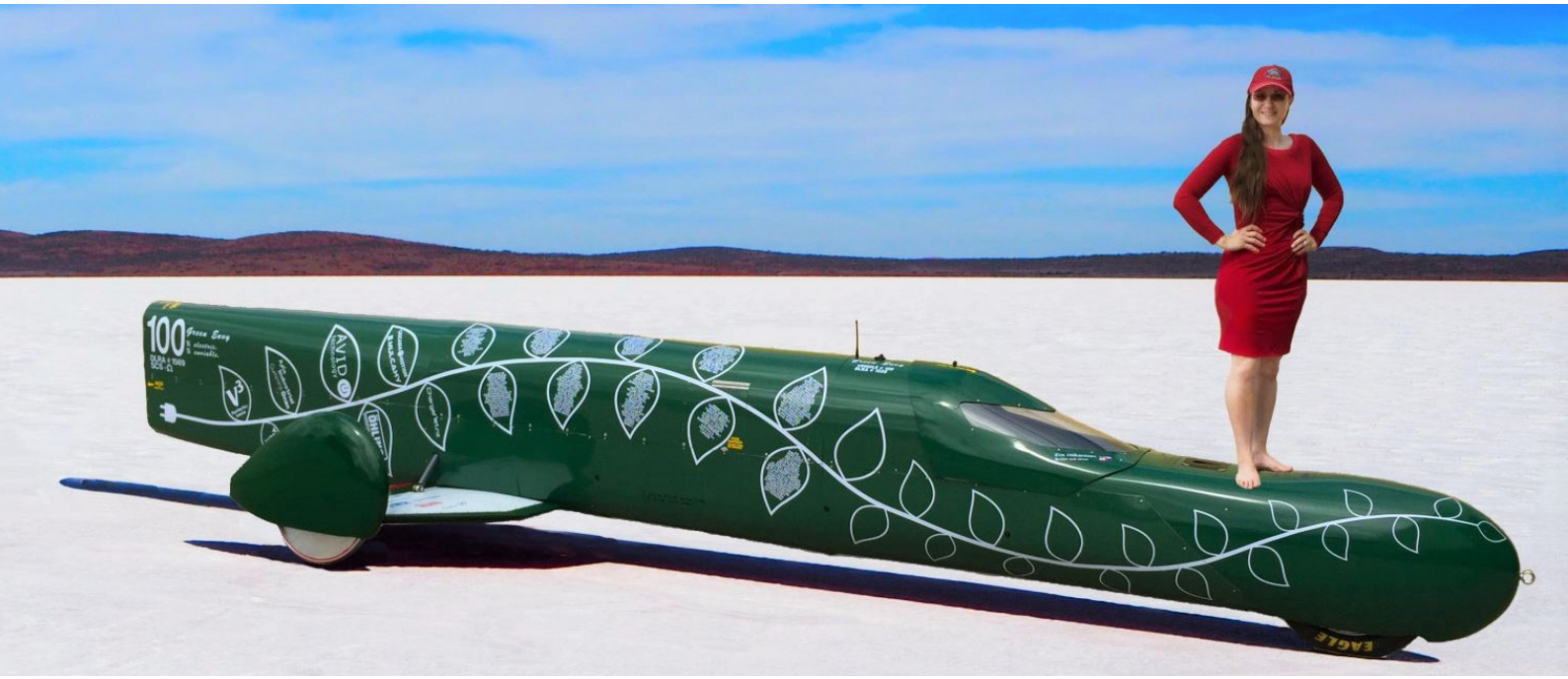
A little bit of 'Green Envy'

Green Envy is a battery-powered, streamliner, sidecar motorcycle. It has almost 1000 horsepower. It is being built with the goal to be the world's fastest motorcycle.

The Green Envy has been constructed in New Zealand and was ready for racing in February 2020. It was shipped to Australia to be raced at the Lake Gairdner salt flats in Australia in March 2020. Then COVID-19 hit. Its debut was rescheduled for March 2021 in Australia. Then COVID-19 stopped it again, this time by closing the border between New Zealand and Australia. "In 2022, we thought it would all come together – then Lake Gairdner was flooded and the access roads damaged, and the event was cancelled. Third time was clearly not the charm. We are looking to go to Bonneville instead, and if that doesn't work, we will be back in Australia for 2023," says Eva Hakansson.

Green Envy has been built by Eva Hakansson and her husband Bill Dubé, and a team of volunteers.

Eva and Bill were special guest judges at Taranaki's EVolocity regional finals.



The Green Envy 'numbers'

It is always fun to play with numbers. They call this 'racing on paper.'

But the reality is if a vehicle can't set a record on paper, it definitely won't do it in the real world either. With the current gearing and the conservative drivetrain settings for amps and torque, the Green Envy stats are impressive:

- Top speed 530 km/h.
- 0-100 km/h in 6.8 seconds if we turned it all the way up.
- 0-320 km/h in 34 seconds.
- 0-530 km/h in 56 seconds.
- In that time, I would have covered 4,100 meters or 2.6 miles.
- However, that doesn't take into consideration that the increasing air resistance as the vehicle speeds up will decrease the acceleration rate, so in reality it will take longer to reach the top speed.
- On a full charge, cruising at 100 km/h on flat ground, the theoretical range would be 900 km, but the range in real-life driving (if the Green Envy could be driven on the street) would be about two thirds of that.
- The energy consumed over that distance is equivalent to 2.4 liters of petrol.
- Cruising at 100 km/h, the fuel efficiency is equivalent to just over half a litre per 100 km.

As you can see, electric vehicles can be both incredibly fast, and incredibly efficient! "That's why the two most important vehicles in my life are electric: my race vehicles (KillaJoule and Green Envy) and my daily driver (a 2013 Nissan Leaf). Sometime in the future, I hope to add an electric airplane to my fleet, but I certainly can't afford that with my current expensive addiction (i.e. racing)," says Bill Dubé.

Beaming down the power!

In one hour, the Earth receives enough energy in the form of solar radiation to power the entire planet for a year. (Source: Transpower)

Emrod successfully demonstrated power beaming technology to unlock space-based solar power.

Munich, Germany – 27th September 2022, Emrod demonstrated its technology for Space-Based Solar Power (SBSP) applications in a collaboration with the European Space Agency (ESA), Airbus and Technocarbon.

ESA and Airbus believe that commercial space-based solar power, using satellites to capture solar energy in space where it is plentiful 24/7 and beaming it wirelessly to the ground, could support the transition to sustainable energy and meet Europe's goals for net zero carbon emissions by 2050.

Held at Airbus' Munich Area Site, Emrod's indoor demonstration system wirelessly beamed power over 36m at a frequency of 5.8GHz, using a square phased-array transmitting antenna of 1.92m in diameter and a similarly sized receiving antenna.

While the concept of Space-Based Solar Power is based on existing technological principles, one of the challenges to date has been how to cost-effectively deliver the energy generated in space to earth for use. Emrod's solution could overcome this challenge, helping ESA to achieve a necessary level of wireless power transmission (WPT) conversion efficiency.

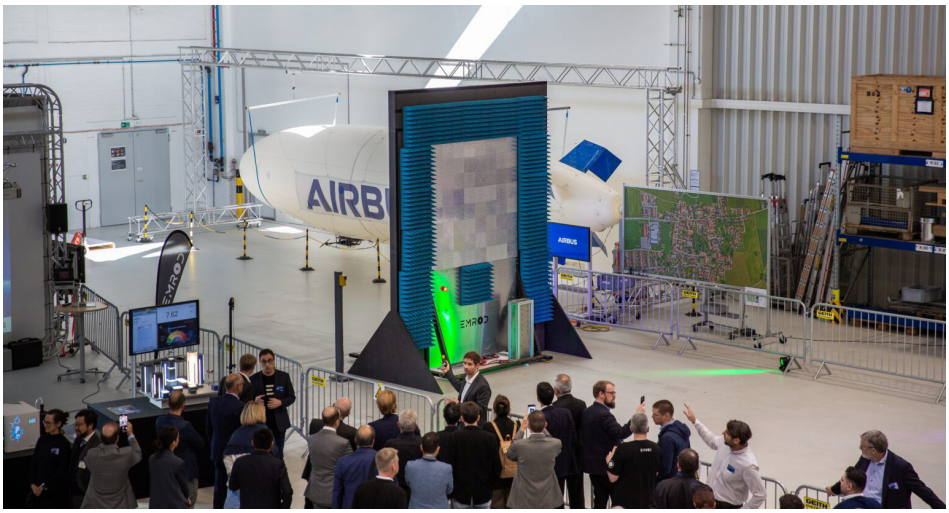
"Space-based solar power has the potential to be a significant contributor to the balanced portfolio of clean energy solutions that will be needed to meet the EU's and ESA Member State's Net Zero 2050 goals."

"ESA is delighted to work with Emrod to showcase wireless power transmission as an emerging technology with the potential to solve sustainability challenges in the energy and space sector," says Torben Henriksen, ESA's acting Director of Technology, Engineering and Quality.

As the first European demonstration of long-range wireless energy transmission for space-based solar power applications, this event underpins ESA's proposed Space-Based Solar Power preparatory programme, called SOLARIS.

"The world has set an ambition to achieve net zero emissions by 2050, a difficult target considering the performance of current and near-term energy technologies. We are excited to contribute to the commercialisation of power beaming technology for space-based energy infrastructure in collaboration with ESA and Airbus," says Greg Kushnir, founder and CEO of Emrod.

"This demonstration takes us closer to our goal of commercializing long-range power transmission. I expect to soon announce details of our next terrestrial use case demonstration and we continue to develop plans for in-orbit testing of space-based infrastructure," says Mr Kushnir.



Emrod's Taranaki field test

You might've seen these two large white structures near Brixton.

They looked like a covered stage ready for an outdoor concert, but this was the Taranaki site where Emrod underwent some field testing - literally!

Between April-June 2022, Emrod deployed its power beaming prototype system in the field for the first time. The field testing was completed near Waitara, in Taranaki, was enabled by partners, Ara Ake, New Zealand's national new energy development centre, and Powerco, New Zealand's second-largest energy distributor.

Moving out of the lab and into the field was a significant milestone for Emrod.

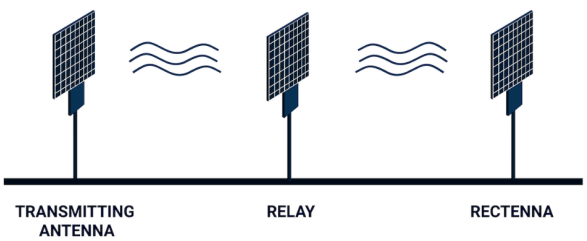
They were able to test and improve key components of their beam shaping and beam steering technology, power density levels, safety system and technology that they use for measuring and testing antenna performance. The learnings are being incorporated into engineering their next system which will deployed in the field in 2023.

Tele-Energy Technology

Advancements in radar and advanced materials technology have made energy transmission over long ranges possible.

Emrod have developed unique technology that makes long distance energy transmission safe and reliable for commercial purposes.

Energy is transmitted through electromagnetic waves over long distances using Emrod's proprietary beam shaping, metamaterials and rectenna technology. Emrod uses beams in the ISM (Industrial, Scientific, and Medical) band with frequencies commonly used in WiFi, Bluetooth, and RfID.



Firstgas Group and Ecogas to deliver bio-methane

Firstgas Group and Ecogas are preparing to turn kerbside waste into pipeable renewable gas for New Zealand homes and businesses.

The two companies are developing the country's first large-scale renewable gas project at a central North Island site on land owned by fresh produce giant T&G Fresh.

Firstgas chief executive Paul Goodeve says the scheme will provide enough biomethane to supply the equivalent of 9000 homes and businesses – preventing more than 11,000 tonnes of CO2 production each year.

"Biomethane is chemically identical to natural gas so there is no need to modify pipeline infrastructure or gas appliances," he says.

> **"We have our sights set on scaling up operations, which will see multiple renewable gas to pipeline sites around the country in the future."**

New facilities

Ecogas is building a waste-to-biogas facility in Reporoa, between Taupō and Rotorua, that will use an anaerobic digester to turn 75,000 tonnes of organic waste into biogas and fertiliser.

The plant is expected to be operating in mid-2022, but installation of Firstgas' biogas to biomethane upgrading facility is not expected to begin until late next year.

That plant will separate the biogas into pipeline-quality biomethane and carbon dioxide. It is expected to be commissioned in early 2023.

The renewable gas will be compressed and go into the natural gas pipeline network, while the CO2 will go to nearby T&G Fresh glasshouses.

Ecogas has secured a 20-year contract with Auckland Council to collect kerbside food waste from across the city – which is sorted at the company's purpose-built facility in Papakura.

Original article in Energy News:

The heart of the system are the anaerobic digesters


The air purifiers are an important component to remove odours

This unit removes all the non-organic rubbish from the food waste

Methanex (NZ) invests in technology to reduce emissions by over 50,000 tonnes

Methanex Corporation, the world's largest producer and supplier of methanol, recently announced it has made a significant investment to reduce carbon emissions at its Motunui facility in New Zealand.

This multi-million-dollar investment will involve improving the technology in the facility's distillation columns over the next 12 months. The efficiency improvements provide an economic payback within two years. Once completed, this project has the potential to reduce the site's carbon emissions by over 50,000 tonnes per annum, the equivalent of taking 20,000 cars off the road.

> **"We're excited to announce this new investment in our Motunui facility as a demonstration of our commitment to emissions reduction in New Zealand and globally,"**
>
> Stuart McCall, Managing Director, Methanex New Zealand.

"With this new technology, we will no longer need to distill crude methanol at our Waitara Valley plant, thereby reducing our energy consumption and overall emissions."

This New Zealand project is just one of several opportunities currently being progressed by Methanex around the world to further improve the company's environmental performance through emissions reduction.

"As the world's largest producer and supplier of methanol, Methanex is committed to playing an active role in the transition to a low-carbon economy," said Vanessa James, Senior Vice President, Corporate Development & Sustainability. "In alignment with commitments made in our recent Sustainability Report, we are proud to invest in emissions reduction technologies such as that at our Motunui plant, and we will continue to explore lower-carbon pathways to producing methanol across all of our global operations."

Methanex company profile

Methanex own and operate three plants in Taranaki: two at Motunui and one in the Waitara Valley (this facility is currently idled).

Methanex's highly skilled and diverse workforce in New Zealand includes approximately 240 employees with additional support from local contractors.

Methanex is an active and enthusiastic contributor to the social and cultural development of neighbouring communities through a variety of social responsibility programmes.

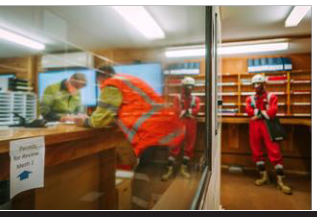
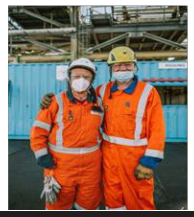
Methanex is an important contributor to the local and national economy. According to an economic impact report Methanex commissioned in 2018, we generate $634 million for Taranaki's GDP and $834 million for the country's GDP each year (based on 2017 figures) and support 3,171 full time equivalent employees (FTEs) nationally.

Taken from Methanex's website







Energy's Talent Pipeline

New Zealand is transitioning to a net zero carbon economy by 2050 and Energy Resources Aotearoa is committed to supporting this.

Energy Resources Aotearoa has partnered with WITT Te Pūkenga and industry, alongside the Regional Skills Leadership Group (RSLG) to conduct a review and develop this report.

It presents an integrated and inclusive industrial skills action plan for the future energy workforce, both locally in Taranaki and beyond.

The goal is to create a successful and sustainable energy resources sector, through and beyond the transition to lower emissions. Energy Skills Aotearoa is an integral part Energy Resources Aotearoa and has been developing skills for New Zealand's energy industry since 2010.

Summary of the report

1. New Zealand's energy workforce is high-quality, and highly transferable

The current workforce and its skills are high quality and transferable. 90% of existing skills/roles can be transferred into new emerging energy projects.

The transferability of skills together with difficulties attracting new people to oil and gas, will mean challenges for current operators to retain people to operate through transition and safe decommissioning.

There is an opportunity to provide a stronger value proposition for this transferability. High quality resilience education is needed to support personal value assessment and retention through transition.

2. The global energy sector is changing, which brings new challenges and opportunities for the energy workforce.

We must maintain, support, grow and develop a highly skilled niche workforce in the face of unprecedented labour shortages and changing workforce expectations. This is just a challenge in our workforce that we can combat into an opportunity.

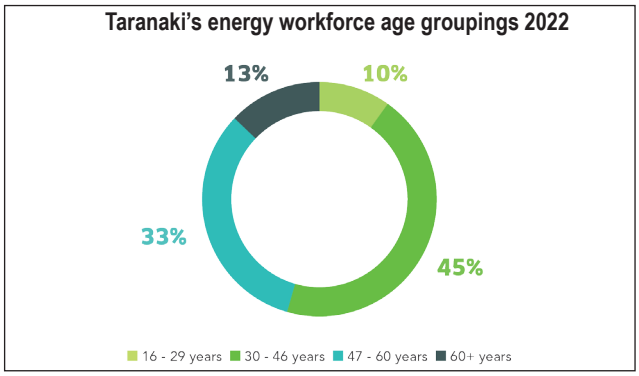
There remains a high reliance on importing resources from outside New Zealand along with a large low employee / high contractor or outsourced model. Anecdotal evidence of this does not support investment in developing new talent within either the operators or the supporting contractor market.

3. Work is already underway to address these challenges and opportunities

There are a variety of initiatives underway across the energy sector to help build the future workforce. The tertiary sector is adapting to the energy transition and developing a new energy curriculum.

4. This Energy Industry Skills Action Plan builds on existing activity to ensure we attract and develop talent with effective collaboration being critical to its success

Based on our research we have identified three strategic goals and 13 key objectives. Within each objective are several actionable item recommendations to be implemented by various lead organisations and partners.



Click on the report to open it

Growing an Energy Centre of Vocational Excellence

Taranaki is experiencing the emergence of alternative energy industries and usages that have the potential to create a range of new career pathways that WITT Te Pūkenga is preparing to support.

WITT is positively connected to many industries which will lead the transition, enabling WITT Te Pūkenga's teaching to maintain a level of relevancy and responsiveness to those industry needs, which many other academic and vocational institutions will struggle to have.

Some of the areas that are anticipated to emerge include electric vehicles, hydrogen fuel technology, renewable generation technologies (hydro, wind, solar, geothermal, wave, tidal etc.).

WITT Te Pūkenga is supporting the energy industry by developing a Centre of Excellence in Energy and Engineering to provide work-ready graduates who are skilled in the latest technologies.

Strategic Collaborations

Collaborations between Victoria University, Canterbury University and Ara Ake, the national new energy develop centre, creates strong relationships to ensure WITT Te Pūkenga is connected to other leading organisations in the energy field.

A Centre of Excellence must:

- Support the growth of excellent vocational education with a focus on teaching, learning and research.
- Support the development and sharing of high-quality curriculum and programme design.
- Be a consortium with expert representation from industry, the wider sector, and a range of other areas, for example iwi and vocational education representatives.
- Have a national focus.
- Be hosted by a regional campus of Te Pūkenga.
- Address issues and opportunities with a significant strategic impact, ideally with wide-reaching benefits across the sector.
- Solve real problems and grasp viable opportunities.

A joint programme between WITT Te Pūkenga & Victoria University unlocks an exciting future

Te Kura Matatini o Taranaki, Western Institute of Technology at Taranaki (WITT) is very excited to be partnering with the Te Herenga Waka, Victoria University Wellington (VUW) to create opportunities for our rangatahi to stay in Taranaki and study then pathway to an exciting degree programme at Victoria University.

Study the first year of your engineering degree at WITT Te Pūkenga, then pathway to Victoria University.

- **Joint BEng (Hons) Programme** (see right)
- **Joint BSc Programme** (see right)

Scholarships

WITT Te Pūkenga has scholarships available to study fulltime engineering in New Plymouth, either at diploma or degree level and welcomes enquiries regarding these.

If a student has a preference to focus on computer software, engineering and associated fields, then WITT Te Pūkenga can now help you on that journey and better prepare you for life at university.

These scholarships are proudly sponsored by Ara Ake and GNS.

GNS SCIENCE TE PŪ AO

Ara Ake
Future Energy Development

Joint BEng (Hons) Programme

First year WITT, years 2-4 Victoria

- Software Engineering
- Cyber Security Engineering
- Electrical and Electronic Engineering

Joint BSc Programme

First year WITT, years 2-3 Victoria

- Computer Science
- Computer Graphics
- Games or Artificial Intelligence

WITT RENEWABLE ENERGY COURSES

Stand Alone Power Systems: Design & Installation

Stand Alone Power Systems (SAPS) can be a viable option for many applications, from a remote monitoring station to an off-grid household right up to village electrification.

For the reliable, long-term supply of power to off-grid users, electrical workers involved with these systems fully understand the operating theory and safety requirements in order to design and install safe and effective systems, as well as adequately manage customer expectations.

This course builds upon the basic knowledge provided in Grid-Connected Photovoltaic Systems and expands upon that in Grid-Connected Battery Systems.

Course Structure

The delivery of this course is designed for busy tradespeople who do not have the time to attend lengthy face-to-face courses. The online component is fully flexible to allow students to complete the theory in their own time.

- Pre-course learning: Online self-directed learning at your own pace, with tutor support (100 hours).
- Three day course at the WITT Te Pūkenga Infrastructure Park, New Plymouth (24 hours).
- Post-course assignment (16 hours).

With successful completion of the course, the applicant achieves the following micro-credential: Stand Alone Power Systems: Design & Installation (20 credits).

At the end of the course participants will have the following knowledge

- Assess a site's suitability for a stand alone power system and calculate an estimated energy yield at each month of the year for the client.
- Assess a client's energy consumption, create a load versus renewable energy resource profile and estimate renewable energy percentage versus fuel generator energy [percentage.
- Determine best battery technology for a given scenario based on a variety of factors.
- Determine best mix of energy resources for a given site.
- Select appropriate components and assess their suitability.
- Design and install a stand-alone power system.
- Commission and fault-find stand-alone power systems.
- Optimise stand-alone power systems.
- Stand-alone power systems: design and installation

Topics Include

- Commonly used off-grid battery chemistries and their characteristics.
- Battery charging, PWM regulators and MPPT charge controllers.
- Battery Inverters, Inverter/Chargers, hardware differences between hybrid inverters and specifically designed off-grid capable inverters.
- AC and DC coupled battery inverter architectures.
- Cable sizing, fault level calculations and selection of protective devices.
- Balance of system components.
- Site suitability and load assessment.
- System design and yield calculations.
- Backup generators.
- Integration of multiple energy sources.
- Wind and micro-hydro generation (introductory info only).
- Applicable regulations, standards – in particular AS/NZS5033, AS/NZS4509.1 and AS/NZS4509.2, various battery standards including a look at the new AS/NZS5139 (not yet cited in Regs) and examples of lines company connection requirements in New Zealand.
- Installation, testing, commissioning and fault-finding of Stand-Alone Power Systems.
- Hazards associated with batteries and Stand-Alone Power Systems.
- Energy consumption assessment, detailed load profiling an optimisation strategies.
- Multiple scenarios where Stand-Alone Power Systems can be of use:
  - Remote Monitoring and Control.
  - Bach's and tiny houses.
  - Off-grid homes.
  - Off-grid workshops and industry.
  - Remote village electrification.

Who Should Attend?

- Electricians
- Electrical Engineers
- Electrical Inspectors
- N.B. Completion of Grid-Connected PV Systems: Design & Installation is a prerequisite for this course. Completion of grid-connected battery systems is highly recommended.
- All applicants must be registered electrical workers and hold a current practicing licence.

Led by Tim Francis

Tim is the trainer appointed to deliver the PV training courses at WITT - Western Institute of Technology, NZIHT - New Zealand School of Engineering, Energy & Infrastructure, supported by SEANZ.

Tim Francis is the Principal and Director, Southern Solar & Automation. He has a 26-year background as an electrician, initially specialising in industrial control systems and then spending the last 15 years in the Renewable Energy field as a designer/installer of both grid-connected and stand-alone PV & storage systems. Prior to moving to New Zealand in 2019, he was also engaged as a trainer in both subjects at both TAFE NSW and GSES Australia. He has advanced diplomas in Electrical Engineering (Control) and Renewable Energy and held CEC Accreditation as a Designer and Installer for both grid-connected PV and stand-alone power systems with both micro-hydro and small wind endorsements.

WITT RENEWABLE ENERGY COURSES

Grid-Connected Battery Storage Systems: Design & Installation

Grid-Connected Battery Storage Systems, particularly those integrated with Grid-Connected Photovoltaic Systems, provide many valuable options to home and business owners. However it is essential that electrical workers involved with these systems fully understand the operating theory and safety requirements in order to design and install safe and effective systems, as well as adequately manage customer expectations.

This is a recommended prerequisite course for those wanting to install complete stand-alone (off-grid) systems and builds upon the basic knowledge provided in grid-connected photovoltaic systems.

Course Structure

The delivery of this course is designed for busy tradespeople who do not have the time to attend lengthy face-to-face courses. The online component is fully flexible to allow students to complete the theory in their own time.

- Pre-course learning: Online self-directed learning at your own pace, with tutor support (100 hours).
- Three day course at the WITT Te Pūkenga Infrastructure Park, New Plymouth (24 hours).
- Post-course assignment (16 hours). With successful completion of the course, the applicant achieves the following NZQA framework registered micro-credential: Grid-Connected Battery Storage Systems: Design & Installation (10 credits).

At the end of the course participants will have the knowledge to:

- Assess a site's suitability for a grid-connected battery storage system and calculate an estimated energy yield for the client.
- Assess a client's energy consumption, create a load versus PV profile and recommend options to improve self-consumption of PV energy.
- Determine best battery technology for a given scenario based on a variety of factors.
- Select appropriate components and assess their suitability.
- Design and Install a grid-connected battery storage system.
- Commission and fault-find grid-connected battery storage systems.
- Optimise grid-connected battery storage systems for non-typical usages.

Topics Include

- Commonly used battery chemistries and their characteristics.
- Battery charging.
- Multi-mode (hybrid) battery inverters.
- AC and DC coupled battery inverter architectures.
- Cable sizing, fault level calculations and selection of protective devices.
- Balance of system components.
- Site suitability and load assessment.
- System design and yield calculations
- Applicable regulations, standards – in particular AS/NZS5033, AS/NZS4777.1, various battery standards including a look at the new AS/NZS5139 (not yet cited in Regs) and examples of lines company connection requirements in New Zealand.
- Installation, testing, commissioning and fault-finding of grid-connected battery storage systems
- Hazards associated with batteries and grid-connected battery storage systems.
- Energy consumption assessment, detailed load profiling and optimisation strategies.
- Multiple scenarios where grid-connected battery storage systems can be of use for:
  - Maximising self-consumption of renewable energy.
  - Short-medium duration backup power.
  - Load shifting.
  - Tariff optimisation.
  - Grid support.
  - Avoidance of need to upgrade mains for some high-power loads.
  - Single to three-phase conversion.

Who should attend?

- Electricians.
- Electrical Engineers.
- Electrical Inspectors.
- N.B. Completion of Grid-Connected PV Systems: Design & Installation is a prerequisite for this course.
- All applicants must be registered electrical workers and hold a current practicing license.

DATES AND LOCATIONS FOR COURSES

All courses held at the NZIHT/ WITT Te Pūkenga Infrastructure Park - NP

STAND ALONE POWER SYSTEMS: DESIGN & INSTALLATION
8 - 10 February 2023
Domestic fees: $1,200*
International fees: $3,500
Courses run subject to numbers

GRID CONNECTED STORAGE SYSTEMS: DESIGN & INSTALLATION
1 - November 2022
12 - 14 December 2022
13 - 15 February 2023
Domestic fees $600*
International fees $1,750
Courses run subject to numbers

* Applicants must supply a verified copy of either their NZ Passport or NZ Birth Certificate

For further information please contact the Programme Manager:

Jan Kivell
06 759 7065 ext 3708
jan@nziht.co.nz

Study options include:

Bachelor of Engineering Technology
(Mechanical/Civil, Level 7)

The Bachelor of Engineering Technology (BEngTech) is a three-year engineering degree, where students develop the capability to analyse and implement solutions to real-life, practical situations. It teaches students to understand and apply engineering science knowledge and provides a pathway into engineering, construction and related manufacturing industries. Students choose to major in civil or mechanical engineering. Graduates meet an industry demand for people who can actively apply engineering knowledge and integrate that knowledge into high level practical situations.

Job prospects for civil engineers
www.careers.govt.nz/jobs-database

Earn $60K-$70K a year
Engineering technicians/draughtspeople with one to four years' experience usually earn $50K-$70K per year. Senior civil engineers usually earn $120K-$180K per year.

Good job opportunities
Chances of getting a job as a civil engineer are good due to a shortage of workers.

Enrolment info@witt.ac.nz
Fees $7,312 (one year fulltime)
$914 (per paper)

NZ Certificate in Infrastructure Works
(Level 2 and 3)

The purpose of this qualification is to provide the infrastructure industry with people who have relevant knowledge and skills that can be applied to a range of infrastructure works processes. It is the cornerstone qualification for those graduates wanting to move into an infrastructure career pathway. Graduates of this qualification are able to carry out infrastructure works operations safely and to a quality standard in a variety of infrastructure work contexts. This programme can be studied part-time while you work and full time.

Enrolment info@witt.ac.nz
Fees Fees free

Graduate Diploma in Engineering
(Highways, Level 7)

This programme is designed to give those that have engineering qualifications a chance to gain technical knowledge in highway engineering and general knowledge of applied management. The goal is to provide the technical and management skills to function at middle management level.

Enrolment info@witt.ac.nz
Fees $6,970 (one year fulltime)
$871 (per paper)

NZ Diploma in Engineering
(Mechanical/Civil, Level 6)

This internationally recognised diploma gives students the knowledge and skills required of an engineering technician. You'll learn to apply theoretical and technical knowledge to practical situations and demonstrate the necessary strategies to work safely and effectively with contractors, communities, clients and authorities. Pathways include progressing to Bachelor of Engineering Technology.

Job prospects for engineering technicians
www.careers.govt.nz/jobs-database

Earn $50K-$70K a year
Engineering technicians/draughtspeople with one to four years' experience usually earn $50K-$70K per year.

Good job opportunities
Chances of getting a job as an engineering technician/ draughtsperson are good due to a shortage of workers.

Enrolment info@witt.ac.nz
Fees $7,256

Introduction to Engineering Maths
(Level 3)

Build your mathematic skills and knowledge in an engineering context. This training scheme provides a pathway for students to meet the entry criteria for the NZ Diploma in Engineering.

Enrolment info@witt.ac.nz
Fees Fees free

WITT's extensive range of qualifications includes more than 60 options with study pathways that include postgraduate study and bachelor's degrees through to diplomas, certificates and micro-credentials that can be completed part-time or full-time.

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