

EGEE 497 – SUSTAINABLE ENERGY IN NEW ZEALAND

Beginning and End of Course/Travel

Begin: Auckland Airport, New Zealand, 1200h Monday March 6, 2023 (at International Arrivals in Airport where you emerge from Customs on Ground Level (there is a Dunkin' Donuts))

End: Auckland Airport, New Zealand, 1200h Saturday March 11, 2023

Contacts

Derek Elsworth elsworth@psu.edu - +1.814.441.8308 [24h emergency contact - voice]

Clothing and Baggage

From the evolving itinerary, you will get a feel for the kinds of activities we will undertake. Remember that we will be actively walking and in transit for much of the time, so wear comfortable footwear and clothes. You will need closed toed shoes and covered arms and legs for at least one of the visits. New Zealand will be in late summer in March so bring layers and raingear. Long pants, and polypro/fleece would be appropriate. Boots or closed toed shoes are necessary. Both sunscreen and a hat may be useful.

We will be spending our overnights in hostels, usually with dormitory accommodation. These are typically moderately secure for baggage and valuables (often small shared and lockable rooms) but other options will be to leave these in the vehicle(s) or on your person. A secure location, on your person, for your money and travel documents is often useful. I usually keep my passport with my wallet in my (cargo) pant pocket – for the duration. It is sometimes useful to keep a **photocopy of your passport** in your baggage or email yourself a scan of the front page and keep it on your webmail.

For travel in the vans, it is preferable to pack in soft bags, and to travel as light as is comfortable. Remember sunscreen, hat (sun), and sunglasses, if needed and raingear (jacket).

I plan to wear what I wear on campus every day - light hiking boots, shirt and fleece for most of the trip, and to have an extra fleece layer and waterproof/windproof shell. Swimwear will be useful (there are geothermal pools) and bring a light towel as the hostels don't necessarily supply them. If you are not checking your bag on the international flight remember that liquids in your toiletries (sunscreen, toothpaste, shampoo) should be in small containers and available for inspection.

Passport

You **MUST** have a valid passport. You should obtain any visa/documentation necessary for your travel. If you are traveling on a US passport, you will need **to apply online for an electronic travel authorization** for New Zealand (NZETA) at least **72 hrs in advance of travel:** <https://nzeta.immigration.govt.nz>

Your Out-of-pocket Expenses

Your lab fee will pay for your accommodation (hostel fees), and for in-country travel. You will need cash for your meals and other incidentals or credit or debit cards. You will be able to change US dollar notes at the airport – sometimes useful as an emergency supply if the bank has frozen your card for international withdrawals. Most hostels will have self-catering facilities, and you will have the opportunity to pool resources to group-cook, should you wish. You will purchase your own air travel.

Miscellaneous

Remember to bring some method (small notebook or tablet (electronic or paper)) to keep a journal. One that fits into your pocket or pack may be most convenient. Bring a camera or smartphone for photos. You will be able to find Wi-Fi at all hostels if you don't have a phone plan. Wi-Fi is available at coffee shops, restaurants and hostels but is neither as ubiquitous nor as cheap as in the US. Remember to keep any phone on airplane/non-roaming mode to avoid disastrous (\$100s-\$1000s) roaming charges if you don't have an international plan. An ATM card or Visa/Mastercard/Amex/Diners will likely be the best method to transport cash. You may wish to notify your credit card company that you will travel to New Zealand as sometimes they suspend cards with suspicious activity – this is easily rectified with an email or logon to your account website after the fact. The voltage is 230V and you'll need a plug (definitely) and voltage converter if your recharger is not dual 110/230V (almost all are).

Hostel destinations map: <https://tinyurl.com/2s436a7x> **Hostels:** <http://www.yha.co.nz/> [scroll over map]

Contact Details

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Penn State UP Police Services for emergency (24/7) +1.814.863.1111

D. Elsworth (24/7) +1.814.441.8308 and elsworth@psu.edu

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		Activity		Hostels
Mar 4	Sa	Emergency Contact: elsworth@psu.edu ; +1.814.441.8308 (24/7 – NZ is 18h ahead of EST)	Depart	
5	Su	In transit	In transit	
6	M		<p>Course Begins: Auckland Airport, NZ 1200h- International Terminal/Ground Floor/Outside Arrivals/Dunkin Donuts https://www.aucklandairport.co.nz/information/airport-maps 1200h – Depart Auckland Airport 1400h Genesis Energy – Huntly Power Station (~2h) 1400 - Simon Hurricks Predictive Maintenance Engineer Genesis Energy Huntly Power Station</p> <p>Rotowaro Mine – Drive-by http://www.solidenergy.co.nz/operations/rotowaro-opencast-mine/</p>	Raglan Solstice 611 Wainui Road Raglan +64 7 825 8268
7	Tu	Te Uku Windfarm – nr. Raglan 0900 at site. Nr. Bridal Veil Falls. Toed shoes, covered arms/legs and warm raingear. Tim and Paige Meridian Energy Limited	Travel to Taupo <i>via</i> Waikato River Arapuni Dam 1400 – Kiel Adlam, Mercury Negative C19 test that morning	Taupo Haka Lodge 56 Kaimanawa St Taupo +64 7 377 0068
8	We	Mercury – Nga Tamariki 0930 Nathan – Field Manager Negative C19 test that morning	GNS Taupo/Wairakei 1400 Mark Simpson	Taupo Haka Lodge 56 Kaimanawa St Taupo +64 7 377 0068
9	Th	Tokaanu Hydro Plant Huka Falls Wairakei Terraces thermal pools Wairakei overlook Craters of the Moon Ohaki geothermal plant – drive by Ecogas – ecogas.nz.co Kerosene Creek – natural thermal spring	Arrive in Rotorua	Rotorua Rock Solid 1140 Hinemoa St Rotorua +64 7 282 2053
10	Fr	Kuirau park – 1371 Pukuakua St Government gardens – 9 Queen’s Drive Travel to Auckland	Travel to Auckland – Then free time	Auckland International 5 Turner Street Auckland +64 9 302 8200
11	Sa	Auckland	Course Ends: Auckland Airport, NZ 1200h	
12	Su	Arrive in US on Sa/Sun		

PARTICIPANT DELIVERABLES

Pre-Trip

1. Review the Itinerary, inclusive of hotlinks, as an overview.
2. Review the energy and New Zealand specific documents on Canvas
3. Complete background research for your assigned venue/topic (as assigned below) and be prepared to introduce this to the group. For your peers, consider what do they need to know about the locale? How is it relevant to the theme of our course? Is there an historical significance or context? Where is it (geographically)? Is there something related that we should see, either in addition or in preference? Introductions should give a Wiki-like overview of the relevant points, taking maybe 5 minutes, without visual aids, except maybe the view.

During-Trip

1. Keep a journal of your activities and observations, related both to your planned topical presentation (final course

deliverable) and to our daily activities. Bring a notebook/tablet (paper or electronic) that you can comfortably carry in a pocket or pack. Morning or afternoon dispatches are as identified below, **in red**.

2. You have two assignments while we travel, potentially on two separate days:
 - a. A 5 minute “vanside” discussion to inform your colleagues about your assigned topic below and on the assigned date. As noted below in black type (e.g. Rotowaro mine on Mo for AA).

Athibi	Mon-am	Rotowaro Mine and fuel supplies to Huntly power station
Scott	Tues-am	Wind power in NZ
Mufaddal	Tues-am	Solar power in NZ https://en.wikipedia.org/wiki/Solar_power_in_New_Zealand
Andrew	Tues-pm	Hydropower on the Waikato River
San	Thur-am	Taranaki/Stratford onshore oil field
Austin	Thur-am	Mauī offshore oil/gas and Methanex gas-to-liquids plant
Erika	Thur-am	Government initiatives for carbon reduction in New Zealand https://www.eeca.govt.nz/co-funding/industry-decarbonisation/approved-gidi-projects/
Ugo	Thur-am	Wairakei – Integrated use – Contact/Tenon/Prawn farm/Rogue bore https://personal.ems.psu.edu/~fkd/courses/eme_497/lecture_materials/9_3_Greg_Bignall_Geothermal%20-%20Power%20of%20Hot%20Water%20-%20Greg%20Bignall.pdf
Sydney	Thur-am	Mokai – Integrated use – Agriculture/Dairy/CO ₂ https://personal.ems.psu.edu/~fkd/courses/eme_497/lecture_materials/9_3_Greg_Bignall_Geothermal%20-%20Power%20of%20Hot%20Water%20-%20Greg%20Bignall.pdf
Akhdan	Thur-am	Tokaanu hydropower plant
Shando	Thur-am	Energy in milk drying and biogenic methane
William	Fri-am	Glenbrook steel plant – reducing carbon intensity https://en.wikipedia.org/wiki/New_Zealand_Steel
Katie	Fri-am	Cook Strait and Kaipara harbor for tidal power potential and plans https://en.wikipedia.org/wiki/Ocean_power_in_New_Zealand
Medi	Fri-am	NZ Battery Project and hydropower on the South Island https://www.mbie.govt.nz/building-and-energy/energy-and-natural-resources/low-emissions-economy/nz-battery/

- b. Complete a brief electronic dispatch as a summary of the (technical) activities for your assigned morning or afternoon as noted below to be posted upon our return. It should highlight observations relevant to the theme of the course. See examples at:

https://personal.ems.psu.edu/~fkd/courses/egee_497/2023/index.html

AA/SB	MG/AG	VSGR/R(A)H	EL/UM	SM/AM	SN/WN	KR/MS
Mon-pm	Tues- am	Tues-pm	Wed-am	Wed-pm	Thurs-am	Thurs-pm

Post-Trip

Week 10 - class

1. Outline presentation topic in class. ~5 mins. Single ppt slide. Title/Objective/Approach/Expected-results
2. Submit your final electronic dispatch for posting (canvas).

Week 13 - class

1. Final presentation (~15 min per person) on an investigative topic of your choice.
https://personal.ems.psu.edu/~fkd/courses/egee_497/2023/index.html



- Auckland Airport
- Huntly Power Station, Cnr Hetherington &
- Solscape Raglan, Wainui Road, Raglan 32
- Te Uku Wind Farm Lookout, 3414 State H
- Hamilton, New Zealand
- Arapuni Dam, Arapuni Road, Arapuni 388
- Haka Lodge Taupo, 56 Kaimanawa Street
- Rock Solid Backpackers & Group Accom
- YHA Auckland International Backpacker I
- Auckland Airport

Options

Send directions to your phone

via SH 1 9 hr 20 min 715 km

Explore Auckland Airport

- Restaurants
- Hotels
- Gas stations
- Parking Lots
- More

