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SUBMISSION ON NOTIFIED APPLICATION CONCERNING RESOURCE CONSENT

(Form 13)

Section 95A Resource Management Act 1991

To: The Chief Executive
Central Otago District Council
PO Box 122
Alexandra 9340
resource.consents@codc.govt.nz

DETAILS OF SUBMITTER

Full name: Vanessa Jane O'Donnell

Contact person (if applicable):

Electronic address for service of submitter: nessa190@windowslive.com

Telephone: 0220 823 505

Postal address (or alternative method of service under *section 352* of the Act):
35 Thomas St, Ranfurly

This is a submission on the following resource consent application: RC No: 240065

Applicant: Helios OTA Op LP Valuation No: 2828012800

Location of Site: 48 Ranfurly-Naseby Road

Brief Description of Application: Land Use Consent to Construct, Operate and Maintain a Solar Farm (Maniatoto Plain Solar Farm) being a Renewable Electricity Generation Activity in a Rural Resource Area.

RECEIVED
17 DEC 2024
CENTRAL OTAGO DISTRICT
ALEXANDRA

The specific parts of the application that my submission relates to are:
(give details, attach on separate page if necessary)

The entire proposal

This submission is: *(attach on separate page if necessary)* attached.

Include:

- *whether you support or oppose the specific parts of the application or wish to have them amended; and*
- *the reasons for your views.*

I/We seek the following decision from the consent authority:
(give precise details, including the general nature of any conditions sought)

Decline Resource Consent to build and operate. ~~the~~ proposed application

I ~~support~~/oppose the application OR neither support or oppose (select one)

I wish / ~~do not wish~~ to be heard in support of this submission (select one)

I ~~am~~/am not* a trade competitor for the purposes of section 308B of the Resource Management Act 1991 (select one)

*I/~~We~~ am/~~am not~~ (select one) directly affected by an effect of the subject matter of the submission that:

(a) adversely affects the environment; and

(b) does not relate to trade competition or the effects of trade competition.

**Delete this paragraph if you are not a trade competitor.*

*I/We will consider presenting a joint case if others make a similar submission
*Delete this paragraph if not applicable.

I ~~request~~/do not request (select one), pursuant to section 100A of the Act, that you delegate your functions, powers, and duties to hear and decide the application to 1 or more hearings commissioners who are not members of the local authority. *"See note 4 below as you may incur costs relating to this request."*

Signature _____ Date 16 December 2024

(to be signed by submitter or person authorised to sign on behalf of submitter)

In lodging this submission, I understand that my submission, including contact details, are considered public information, and will be made available and published as part of this process.

Notes to submitter

1. If you are making a submission to the Environmental Protection Authority, you should use form 16B.

   The closing date for serving submissions on the consent authority is the 20th working day after the date on which public or limited notification is given. If the application is subject to limited notification, the consent authority may adopt an earlier closing date for submissions once the consent authority receives responses from all affected persons.

2. You must serve a copy of your submission on the applicant as soon as is reasonably practicable after you have served your submission on the consent authority.

3. If you are a trade competitor, your right to make a submission may be limited by the trade competition provisions in Part 11Aof the Resource Management Act 1991.

4. If you make a request under section 100A of the Resource Management Act 1991, you must do so in writing no later than 5 working days after the close of submissions and you will be liable to meet the additional costs of the hearings commissioner or commissioners, compared to our hearing panel. Typically these costs range from $3,000 - $10,000.

5. Please note that your submission (or part of your submission) may be struck out if the authority is satisfied that at least 1 of the following applies to the submission (or part of the submission):
   - it is frivolous or vexatious:
   - it discloses no reasonable or relevant case:
   - it would be an abuse of the hearing process to allow the submission (or the part) to be taken further:
   - it contains offensive language:

it is supported only by material that purports to be independent expert evidence, but has been prepared by a person who is not independent or who does not have sufficient specialised knowledge or skill to give expert advice on the matter.

Submission opposing the application by Helios OTA Op LP for Resource Consent to construct, operate and maintain a solar power plant facility of 660 hectares with 550,810 solar panels at 48 Ranfurly/Naseby Road – Vanessa O'Donnell LLB, Ranfurly Resident, Retired Barrister.

I oppose the entire proposal including but not limited to the conclusions of the Boffa Miskell Assessment, the absence of hazard and contamination risks, serious harm issues, fire and earthquake risk, the battery storage facility, the size, scale and site, the risks and negative impact on people and place, loss of food production, toxic waste and absence of infrastructure for such a project.

The reasons for my views are as follows;

Helios OTA Op LP refers to itself on its application as a Kiwi company. It is a subsidiary company, one of approximately 30 registered in New Zealand to an American Ultimate Holding Company (UHC). While the subsidiary company is registered in NZ it is, in actuality, run and controlled by the UHC in the United States. To describe itself as a Kiwi company is somewhat misleading and perhaps sets the tone for the entire application.

Blackrock is a substantial shareholder and the former employer of the CEO of Helios. Economists tell us that a company with over 5% shareholding is in effect able to control the decisions of its investment. Blackrock has approximately 15% shareholding in Helios. They have featured recently in the news after voluntarily liquidating SolarZero, leaving New Zealanders out of pocket. One of the reasons I oppose this application is because of what I deem the untrustworthiness of the applicant. SolarZero is a cautionary tale for this application as it shows a method of operation that fails to meet what we expect of operators in NZ, integrity, transparency and treating people fairly.

Their application relies upon the Boffa Miskell assessment which in my view fails to provide objective or substantiated conclusions. It fails to address all hazards associated with such a project or even mention the most serious. It's conclusions should not be relied upon when detailed information is absent, information is unknown or simply made unavailable.

So what relevant information has not been addressed in the application?

Scientific studies have shown when solar panels are installed *en mass*, as proposed here, heavy metals of lead and cadmium can leach out of the cells and into the groundwater, and be detrimental to the health of humans, livestock and plants. Lead is a heavy metal known to impair brain development in children. Cadmium is a carcinogen. These toxic materials have long term affects on the health and safety of plants, livestock and humans. These affects are irreversible.

In addition, any damage to panels during installation, as a result of panel faults, damage by accident, extreme weather events, earthquake, or fire, create further contamination risk to soil and water, of lead and cadmium.

Once thought to last approximately 25-30 years it has now been proven replacement panels need to occur much earlier, some indications as often as every 7 years. Factors that affect the life span of solar panels are prolonged exposure to UV light, temperature variations and weather conditions.

This site location has high UV light, extreme temperature variation from winter to summer as well as high winds due to the geography of the elevated wide Maniototo basin. All factors likely to shorten the life span of panels and require earlier replacement than the application indicates. Degradation may occur before any replacement and further leakage of lead and cadmium may occur contaminating soil and water further.

Each panel replacement requires specialist removalists, risks the shattering of the glass panels and the toxic leakage of lead and cadmium upon breakage into the soil and aquifer.

The panels that do become replaced are regarded as toxic waste due to the heavy metals in them. While much of a panel can be recycled theoretically, there is no recycling infrastructure for these solar panels.

Research shows that this toxic waste from industrial sized solar farms is a growing problem around the world. While New Zealand seeks regenerative energy solutions embracing industrial sized solar farms with no legislation or regulation or waste management infrastructure in place to ensure the mistakes and problems experienced overseas are not repeated here, defies logic.

The application has not addressed either the hazardous risk of the panels, the replacement risks nor the disposal of them.

Allowing resource consent for known heavy metal components in panels on this scale, in the midst of an agricultural basin and near to rural township water supplies would be in my view be negligent.

Town water supply bores are located on the Naseby back road just below the site of the proposed solar farm which may lead to the contamination of water and serious incurable health problems. It is a looming toxic hazard and waste problem.

That pales in the face of the hazard that is the Lithium ion battery storage proposed.

Solar power stored in Lithium ion batteries can release heat, smoke, toxic gases and has potential for explosions. On fire with the size and scale of this proposed projects storage it will likely burn for weeks or months releasing poisonous gases.

Lithium-ion batteries are prone to a phenomenon known as thermal runaway, where one faulty cell, or an internal reaction, can rapidly spread across other cells, leading to increased temperatures and potentially cause the battery to explode. This proposal is short on specifics however if it involves multiple batteries the size of multiple shipping containers any explosion would be enormous, releasing toxic gas into the atmosphere.

The potential for extremely harmful and life threatening air contamination exists for neighbours and townships. For stock, horses, domestic animals and wildlife. Every living thing ,including plants as they photosynthesise. Toxic plume could move in any direction due to the geographical nature of the basin. Nobody and no thing would be safe.

Physical damage, manufacturing defects, or improper charging can trigger internal shorts, accelerating the risk of thermal runaway. Accidents, malfunctions, anomalies occur even in the best of situations. The size and number of lithium ion batteries (2 square kilometers) is frightening when considering the risks associated with them.

Aside from on site faults, accidents, overheating, the site proposed is in an extreme fire risk area and fire bans exist from 1st October – 31 March, six months of any year. Wildfire is an extreme

risk in the area and to the township of Naseby. Grass fires occur every year and with increasing temperatures and weather events as a result of climate change, the addition of such a facility in the area could be catastrophic for agricultural business, leisure and sporting activities, Naseby forest and township, as well as the Ranfurly township.

To allow an industrial site to be placed in the midst of it, with known potential for overheating, and explosiveness is an unacceptable risk.

Temperatures reach extremes here. It is not unusual on a hot summers day for tar to melt on the roads, vehicles left out in the sun to be too hot to touch the steering wheel. The actual temperatures out in the exposed sun can reach 50 degrees Celsius and climate change studies indicates temperatures will continue to rise.

Our volunteers at Naseby and Ranfurly Fire & Emergency Service simply do not have the man power to get on top of any fire coming **from or toward** such a storage facility. With its distance from other FENZ services, any fire would be well out of control, given the time it would take to arrive on site.

In addition water is in short supply over the summer season, with water restrictions imposed in Ranfurly and other areas of the basin. A low rainfall area, combined with rising temperatures, dry conditions and an open landscape where wind can blow grass fires at high speed, is entirely unsuitable for lithium ion battery storage.

Local infrastructure does not exist for any large fire arising from stored large scale lithium batteries and will potentially endanger the lives of those who serve our communities as volunteers. We ask a great deal of our volunteers. This is an unacceptable risk to them in my view.

Helios have made it clear that if built it will be remotely manned.

There is no satisfactory assessment of fire risk from the plant or toward the plant in the application, nor sufficient risk assessment of toxic plume.

Hydrogen Flouride is one toxic gas released when a Lithium ion battery heats and/or explodes.

Hydrogen Fluoride can cause severe damage to the body. It is a chemical compound (made up of two or more elements) that has the element fluorine. It can be a colorless gas or a fuming liquid, which means it creates gas vapors. It can also be dissolved in water. When hydrogen fluoride is dissolved in water, it is hydrofluoric acid.

An irreversible thermal event in a lithium-ion battery can be initiated in several ways, by spontaneous internal or external short-circuit, overcharging, external heating or fire, mechanical abuse or faults.

Battery fires cannot be extinguished with water, which is the primary firefighting technique in most communities. A fire in a single cell can cascade to others via thermal runaway, possibly in milliseconds, potentially creating a major hazard. Explosions are becoming increasingly documented. When I consider the size and scale of the battery installation proposed, the risks and affects it is extremely concerning.

"Plume modeling" attempts to predict how gases from burning battery chemicals might travel. The gases produced vary across battery types, hydrogen fluoride (HF) being of particular concern even at low concentrations. It is in my view near impossible to predict which direction

the toxic gases will travel on any given day. All that we can be sure of is they are extremely dangerous to the health and safety of all.

To understand what this gas does I have summarised The United States Government Chemical Emergencies Fact Sheet on Hydrogen Fluoride because I believe it is important to understand what this does and what would be required of people in the event of gas or vapours escaping the storage facility.

Hydrogen fluoride goes easily and quickly through the skin and into the tissues in the body. When it touches tissues in the body, it damages the cells and causes them to not work properly.

The effects of hydrogen fluoride poisoning depend on the amount, how someone was exposed, and how long they were exposed. It also depends on the person's age and if the person had any medical conditions.

If breathed in Hydrogen fluoride gas, even at low levels, can irritate the eyes and respiratory tract (mouth, throat, lungs, nose). Breathing in hydrogen fluoride at high levels can cause death from an irregular heartbeat or from fluid buildup in the lungs.

Skin contact depending on the amount of hydrogen fluoride and how long it touches the skin, hydrogen fluoride may cause the following:

- *Severe pain at the point of contact*
- *Rash*
- *Deep, slow-healing burns*

Even small splashes of high levels of hydrogen fluoride in it can lead to death.

Skin contact with hydrogen fluoride may not cause immediate pain or visible skin damage. Severe pain may be the only symptom for a few hours. Visible damage may not appear until 12 to 24 hours after the exposure.

Swallowing only a small amount of high levels of hydrogen fluoride will affect major internal organs and may lead to death.

Hydrogen fluoride exposure can also lead to severe electrolyte problems (not having enough or having too many minerals in your body).

In a natural disaster, storage facilities or containers could be damaged and let out hydrogen fluoride. This could happen at an industrial site or even a retail location.

What to do if you are exposed. Evacuate or shelter in place Get fresh air by leaving the area where the hydrogen fluoride is. Moving to an area with fresh air is a good way to reduce the possibility of death from hydrogen fluoride.

If hydrogen fluoride was released outside, move away from the area. If hydrogen fluoride was released indoors, get out of the building.

Emergency teams may tell you to evacuate or shelter in place.

Take off your clothes

Remove the clothing as quickly as possible. Cut clothes off instead of pulling it over the head. If you are helping others, do not touch unsafe areas and take off the clothes quickly.

Wash your body

As quickly as possible, wash any hydrogen fluoride from your skin with a lot of water.

If your eyes are burning or your vision is blurred, rinse your eyes with plain water.

If you wear contacts, remove them and put them with the dirty clothing. Do not put the contacts back in your eyes (even if they are not disposable contacts).

If you wear eyeglasses, wash them with soap and water. You can put your eyeglasses back on after you wash them.

Throw your clothes away

After you have washed yourself, place your clothing inside a plastic bag. Do not touch unsafe areas of the clothing. If you have to touch unsafe areas, or you aren't sure where they are, use tongs, tool handles, or similar objects.

Anything that touches the dirty clothing should also be placed in the bag. If you wear contacts, put them in the plastic bag, too.

Tie the bag, and then put that bag inside another plastic bag. Throwing away your clothes this way helps protect you and others from any chemicals that might be on your clothes.

When the local or state health department or emergency team arrive, tell them what you did with your clothes. The health department or emergency team will arrange for further disposal. Do not handle the plastic bags yourself.

Seek medical attention immediately.

In Ranfurly we do not have the medical resources for the treatment of people exposed to Hydrogen Flouride. We are not an urban area and the predominant time spent by the people who live and work here is outdoors. "Sheltering in place" may mean a longer time period exposed to the gas outdoors seeking a building with which to close up doors and windows in. Exposure to toxic gases from an incident at the proposed site could seriously harm or cause death to many people, animals and wildlife.

Our fire fighters are also our medical support and first responders. They are more likely to suffer serious harm than anybody else.

If the Council allowed industrial zones into the basin with known hazards such as this I would leave the district and encourage my eldest son who is a FENZ volunteer to do so also. This to my mind is an unacceptable risk. The scale and size of this Lithium ion battery storage facility proposal translates to equally enormous health and safety concerns which cannot ensure the wellbeing of this community, its food production, nor the environment.

I am not opposed to solar power in the right place and on the best scale for the environment. Studies now show it is best utilised on much smaller scales than this proposal, diminishing the risks and hazards and benefitting those who live in the local area.

As more research takes place overseas of the impact of **industrial scale projects** such as this, the clearer it becomes they are not the best solution for regenerative energy and in fact **are harmful to environment and people.**