



## Essential Skills in Demand Review

### Example of a Submission Form

#### 1. Background and contact information

##### 1a) Who is this submission on behalf of?

*Provide name of organisation*

New Zealand Space Programme (NZSP) - Engineering (Hydroponics) Division

This is a co-ordinated stakeholder submission, after consultation with the following organisations:

- University of Paeroa (Contact: Bill Green - [b.green@paeroa.ac.nz](mailto:b.green@paeroa.ac.nz))
- Union of Space Engineers (Contact: Sam White - [sam.white@use.co.nz](mailto:sam.white@use.co.nz))
- Lunar Explorations NZ Ltd (Contact: Ann Brown – [abrown@lunar.net.nz](mailto:abrown@lunar.net.nz))
- New Zealand Lunar Occupations Association (Contact: Tim Black – [tim@nzloa.co.nz](mailto:tim@nzloa.co.nz))
- Hydroponics Engineers (NZ Charter) (Contact: George Grey – [geogrey@hydroponics.net.nz](mailto:geogrey@hydroponics.net.nz))
- Space Explorers Trade Union (Contact: Brian Blue – [bblue@setu.co.nz](mailto:bblue@setu.co.nz))

##### 1b) Contact details

*Include name, position, phone, email and postal addresses*

A Mann, Human Resources Advisor  
New Zealand Space Programme  
PO Box 123456, Wellington  
[A.Mann@nzsp.govt.nz](mailto:A.Mann@nzsp.govt.nz)  
Tel 04 765 4321

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**1c) Disclosure**

Please confirm that you have read and agree to the terms of the disclosure statement below.

**Disclosure statement:**

- The information contained in this submission, or some of its content, may be provided to others for the purpose of information sharing and /or consultation. If this is the case, personal contact details (individual names, telephone numbers and email addresses) will be treated in confidence.
- The information provided in this form is official information under the Official Information Act 1982 and, accordingly, the Ministry of Business, Innovation and Employment may be required to release this information if a request is made under that Act.
- Occupational statistics collected during the course of the review may be used by the Ministry of Business, Innovation and Employment for other research purposes, but individual employers will not be identified.

I have read and agree to the terms of this disclosure statement.

Name: [A Mann](#)

**1d) Briefly describe the main activity and characteristics of the organisation making the submission**

*If a firm, please describe main business activity and number of employees; if another organisation, please describe your organisation's purpose, functions and membership size.*

*If you are making this submission as an individual, please briefly indicate your interest in the occupation your submission relates to.*

[The New Zealand Space Programme is a Crown agency which is responsible for New Zealand's civilian space programme as well as aerospace research. The Engineering \(Hydroponics\) Division is responsible for the lunar hydroponics programme. More information can be found on the agency's website \(\[www.nzspaceprogramme.govt.nz\]\(http://www.nzspaceprogramme.govt.nz\)\).](#)

**2. What occupation does this submission refer to?**

**Occupation job title and ANZSCO code**

*Please give the job title and 6-digit ANZSCO code (refer to the relevant PIER).*

[233999 Engineering Professionals – Lunar hydroponics engineer](#)

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**3. What ESID list status do you think this occupation should have?**

**3a) What ESID list status do you propose this occupation should have?**

- |  |  |
|--|--|
| <input type="checkbox"/> Retain on the ISSL          | <input type="checkbox"/> Retain on the LTSSL         |
| <input type="checkbox"/> Add to the ISSL             | <input checked="" type="checkbox"/> Add to the LTSSL |
| <input type="checkbox"/> Remove from the ISSL        | <input type="checkbox"/> Remove from the LTSSL       |
| <input type="checkbox"/> Transfer from ISSL to LTSSL | <input type="checkbox"/> Transfer from LTSSL to ISSL |

**3b) Does your proposal relate to the whole of New Zealand or only some regions? (ISSL only)**

*Please tick all that apply:*

- Certain regions only:**
- Auckland/Upper North Island
  - Waikato/Bay of Plenty
  - Central North Island (including Taranaki, Manawatu and Hawkes Bay)
  - Wellington (including Wairarapa)
  - Canterbury/Upper South Island (including Westland)
  - Otago/Southland

OR

- All of New Zealand**

**3c) Give your reasons for the proposed change to the ESID lists**

*Please summarise the major reasons for your proposal.*

*Note: If you have already provided an Occupation Nomination to the Ministry, you may wish to copy the information provided in response to Question 4(b) on the Occupation Nomination form.*

New Zealand's foray into space has begun relatively recently. The New Zealand Space Programme is five years old and a shortage of lunar hydroponics engineers within New Zealand requires us to look overseas for staff.

Over the next ten years we expect to need 400 lunar hydroponics engineers to fill new positions, mostly based in New Zealand, with some on the moon.

Currently there is one programme being offered in lunar hydroponics in New Zealand, by the University of Paeroa. However, this programme is only four years old and few people will graduate each year.

Our organisations have attempted to recruit lunar hydroponics engineers in New Zealand but there are few people with the required qualifications and experience and some move to larger space programmes overseas.

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**4. Information and data relevant to the review**

We would particularly like to receive information that provides more detail in relation to the indicators reported in the PIER. **Please refer to the relevant PIER when completing this section.**

It is important that the information that you provide is as specific and robust as possible. Please provide details about the source of your information, how many employers or individuals it represents, and when the information was obtained.

As a general guide, the Ministry is looking for evidence that has a **reasonable breadth of coverage** across the industry (i.e. represents the views or situation of a reasonable proportion of employers and/or employees and/or trainers or other stakeholders); and is **specific** (i.e. clearly stated facts in relation to the occupation). Independent industry surveys prepared by reputable agencies are usually the most compelling evidence.

Evidence should be **able to be substantiated** in some way, for example sourced to a survey, administrative data, or employer/employee feedback.

**Information that does not meet these standards may not be sufficient to support your submission.**

Additional material may be attached in a separate document, if necessary. Where you are appending detailed reports or other information please cite these under the relevant headings below.

**4a) Skill level**

*Please note any comments that you wish to make on the skill section of the relevant PIER.*

We confirm that the qualification and experience requirements mentioned in the PIER are appropriate for the type of people sought from overseas (i.e. Masters degree in Lunar Hydroponics AND experience in space travel including a minimum of two trips into space or to the moon).

However, we feel that another requirement should be included - Lunar Registration with the New Zealand Ministry of Space Exploration.

**4b) Scale**

*Please provide any information that may be relevant concerning the 'scale' of the occupation. This could include information on the total number of people employed in this occupation in New Zealand, and the number of work visas your organisation or its members have sought in the last year.*

*Please note any other comments that you wish to make on the scale section of the relevant PIER.*

Currently there are 200 lunar hydroponics engineers based in New Zealand. Over the next ten years we expect to need 400 lunar hydroponics engineers to fill new positions in the NZSP and the New Zealand Ministry of Space Exploration. The number of people being offered work visas has increased significantly in the last two years. See attached analysis.

**4c) Shortage**

*Please refer to the shortage section of the relevant PIER. We are interested in your response to the information provided, as well as any additional information (such as industry surveys and reports) you can provide.*

*Describe and provide any additional **evidence** you have on the question of shortage.*

*For example, if you consider that **there is an occupational shortage**:*

- *evidence of difficulties employers are having recruiting staff (depending on the occupation,*

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*difficulty for a single employer is unlikely to be sufficient)*

- *estimated apprentice or graduate trainee numbers and the number of workers leaving or retiring from the industry, and reasons for leaving*
- *forecasts and reports on the growth of the occupation/industry.*

*Alternatively, if you consider that **there is not an occupational shortage**:*

- *evidence of suitably trained people available (or soon to be available) to work in the occupation*
- *forecasts and reports on the growth of the occupation/industry.*

In general, we agree with the information contained within the PIER for lunar hydroponics engineer. However, we feel that there is more of a shortage than indicated in the PIER, as detailed by our forecasts for rapidly increasing demand.

Over the next ten years, we expect to need 400 lunar hydroponics engineers to fill new positions in the NZSP and the New Zealand Ministry of Space Exploration (please see the attached projected employment requirements for these organisations).

Currently there is one programme being offered in lunar hydroponics in New Zealand, by the University of Paeroa. However, this programme is only four years old and few people graduate each year (more information on the graduation numbers over the past two years is attached).

Our organisations have attempted to recruit lunar hydroponics engineers in New Zealand, but there are few people with the required qualifications and experience, and some move to larger space programmes overseas. A survey of organisations who employ lunar hydroponics engineers has shown that of the 28 vacancies that were advertised in New Zealand in the past year, only three were filled within New Zealand (please see attached report for more results from the survey).

The number of people in this occupation has increased by 100 percent in the past two years and it is forecast to grow by a further 70 percent in the next five years (see attached report).

**5. Other factors relevant to determining whether a change to the ESID lists is appropriate**

In addition to the evidence of shortage, an important aspect of the review process is to consider whether there are other factors that make it appropriate to add or remove an occupation from the lists. These factors may not be included in the PIER assessment, partly because the range of potential factors is broad, and often robust quantitative measures are not nationally available.

However, those directly involved in an occupation or industry often hold valuable quantitative and qualitative information relevant to the decision-making process. It is therefore important that you provide appropriate information in the following three areas: Labour market conditions, Training and industry initiatives and Wider economic factors.

**Please provide specific details and the source of your information (e.g. independent report, survey, study, administrative data, collated feedback).**

**5a) Labour market conditions**

The Ministry must be satisfied that the industry has a commitment to the provisions of New Zealand employment legislation available to workers. It is important that the hiring of overseas workers is not

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being used as a strategy to keep wages or terms and conditions of employment to a minimum.

- i. Provide information on **wage ranges** applicable to this occupation

Salary bands for the NZSP are:

Grade 1 Lunar hydroponics engineer: \$100,000-\$150,000

Grade 2 Lunar hydroponics engineer: \$140,000-\$200,000

Grade 3 Lunar hydroponics engineer: \$190,000-\$250,000

- ii. Provide brief information on **terms and conditions of employment** applicable to this occupation (e.g. working hours, employee benefits)

This can vary according to organisation but generally employees work 40-50 hours per week, except when on the New Zealand Moon Base when lunar hydroponics engineers are expected to be available 24 hours a day (additional allowances payable).

Lunar hydroponics engineers working for the NZSP and the New Zealand Ministry of Space Exploration are entitled to five weeks of annual leave per year (excluding statutory holidays) and unlimited sick leave. All medical and dental treatments are also covered. Similar conditions are offered in other organisations.

- iii. You may also wish to provide information on the following, if relevant:

- information on trends in work hours in response to growing shortages
- the breadth and scale of shortage, and whether some regions are facing shortages, while others are not (and why this is the case)
- whether there are barriers such as transport, childcare, or work hours, which employers could address to make working in the occupation more attractive to suitably skilled people?

N/A

**5b) Training and industry initiatives**

The Ministry **must** be satisfied that the industry has a commitment to fully utilising the domestic labour market before the industry considers employing overseas workers.

Your submission **must** include information on the following:

- demonstrated industry commitment to training, and
- industry initiatives to enhance domestic recruitment.

- i. What steps are being taken by the industry and employers to address this shortage? In the short-term? In the long-term?

*This may include data on trends in firm/industry investments in training, information on trainee numbers and people who are currently nearing completion of qualifications.*

The University of Paeroa has recently increased the number of positions available in its lunar hydroponics programme (year one intake increased from eight to twelve a year in 2017). It has also applied for international recognition of its qualification.

In addition, there has been a concentrated effort by the NZSP and the New Zealand Ministry of Space Exploration to keep engineers in New Zealand by offering bonding programmes (i.e. the payment of qualification fees and allowances in exchange for bonded service), and to increase the salary bands to make it more attractive to stay in New Zealand.

The industry has set up programmes of on-the-job training to ensure that engineers are

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kept up-to-date on the latest techniques and practices. They have also guaranteed that suitable engineers will be able to work in space once a year.

These initiatives will be evaluated in the medium-term to test their effectiveness in addressing the skill shortage.

*ii. What strategies are in place to recruit New Zealanders?*

*Include examples of training and industry initiatives.*

The industry maintains a strong focus on recruiting New Zealanders wherever possible. Efforts include regular advertising of available employment opportunities in “Lunar Weekly NZ” and on the Institute of Professional Engineers’ website and providing scholarships to qualified New Zealand engineers to complete a Masters degree in Lunar Hydroponics.

Other options being considered are working with another university in New Zealand to set up a second lunar hydroponics programme, and medium-term advertising campaigns to encourage young people into a lunar hydroponics career.

*iii. Does your industry have an agreed skills plan? (i.e. a plan for upskilling the current workforce and/or potential workforce)?*

*If yes, describe the expected outcomes of the plan (or attach a copy).*

- *What are the **goals** of the plan?*
- *What **processes** are in place to achieve the goals?*
- *What are the **timeframes** for the goals?*

*If your industry does not have an agreed skills plan, what plans are in place to develop one? Within what timeframe?*

Yes – please see attachment

**5c) Wider economic factors**

*Wider economic factors may have an influence on occupational shortages. Is there anything else that you would like to comment on?*

*For example, are there reasons associated with productivity, innovation or competitiveness that you think the Ministry should take into consideration? Please provide evidence.*

New Zealand is beginning to lead the field in parts of lunar hydroponics research and its applications in harsh climates on earth. This field has the potential to be a \$500 million a year industry but this may be hampered if we cannot attract suitable staff. Because of the rapid recent growth of this industry there is an international shortage of qualified and experienced staff.

**The Ministry of Business, Innovation and Employment would like to thank you for contributing to the review.**