

MEMORANDUM OF UNDERSTANDING

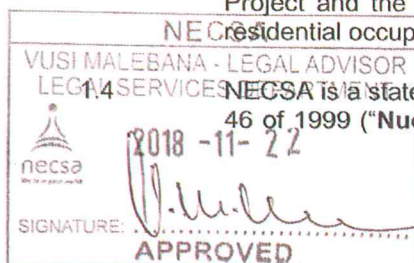
This Memorandum of Understanding ("MOU") is entered into on 26 November, 2018 (hereinafter the **Effective Date**) by and between:

- A. **Eco-Industrial Solutions (Pty) Limited**, a private profit company incorporated in South Africa under registration number 2011/010551/07 and the project developer of the Limpopo Eco-Industrial Park, with its principal place of business and selected *domicilium citandi et executandi* for purposes of this MOU at **9 Sussensvale, KR708, Modimolle 0510, Limpopo**, email address - dk@eco-industrialsolutions.org, herein represented by Ms Deshika Kathararoo in her capacity as the chief executive officer, her being duly authorized thereto ("EIS");
- B. **Limpopo Eco-Industrial Park (Pty) Limited**, a private profit company incorporated in South Africa under registration number 2011/011077/07 and the project company that will own and operate the LEIP, with its principal of business and selected *domicilium citandi et executandi* for purposes of this MOU at **9 Sussensvale, KR708, Modimolle 0510, Limpopo**, email address - dk@eco-industrialsolutions.org, herein represented by Ms Deshika Kathararoo in her capacity as the chief executive officer, her being duly authorized thereto ("LEIP");
- C. **The South African Nuclear Energy Corporation SOC Limited**, a State Owned Company incorporated in South Africa under registration number 2000/003735/06, with its principal of business and selected *domicilium citandi et executandi* for purposes of this MOU at Elias Motsoaledi Street, R104 Pelindaba Gate 3, Magisterial District, Madibeng Municipality, North West Province, 0001, email address Brian.Mphahlele@necsa.co.za herein represented by Mr. Brian Mphahlele in his capacity as Group Executive: Business Development and Innovation, he being duly authorized thereto ("NECSA");

each being a "Party" and together the "Parties".

1. Introduction

- 1.1 EIS intends, as project developer, to establish and develop a fully-integrated zero-solid-waste eco-industrial park proximate to Musina in the Limpopo Province of South Africa, entailing mixed-use heavy and light industrial commercial facilities, residential estates, extensive biodiversity offset areas, and eco-research and tourism facilities, which development will be part-owned, and also managed and operated, by LEIP ("LEIP Project"), all as more fully described in various publications, documents and feasibility studies relating to the LEIP Project.
- 1.2 The LEIP Project is one of the most significant private infrastructure projects proposed to be undertaken in South Africa, representing a capital expenditure of approximately US\$400 million for basic infrastructure, and is expected to enhance, optimize and transform the regional economy of the Limpopo Province, as well as promote and facilitate eco-friendly industrial development in South Africa.
- 1.3 EIS/LEIP are in the process of negotiating several public-private-partnerships with relevant State entities such as NECSA in relation to the establishment of the LEIP Project and the provision of services to the intended industrial, commercial and residential occupants of the LEIP Project and its surrounding communities.



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and development in the field of nuclear energy and radiation sciences and technology and to use this technology for national and regional socio-economic development through the commercial application of these technologies while committing to the health, safety and care of the environment.

- 1.5 NECSA has developed plasma-chemical waste to energy technology that utilizes a plasma gasification system (or plasma waste gasification) through which waste materials are converted into useable and versatile syngas which is then converted into various renewable energy sources, including electricity, methanol, methane, steam, heat and hydrocarbon fuels and other associated products ("PWG Technology").
- 1.6 As an integral component of the LEIP Project, EIS/LEIP is actively pursuing groundbreaking technology from entities such as NECSA to provide desirable solutions that will foster the realization of the LEIP Project as a zero waste eco-industrial park. The Parties envisage the use of PWG units as a solution for waste management within the LEIP Project site.
- 1.7 The Parties acknowledge that South African companies are operating in an economically strained environment and are therefore trying to reduce operational cost through the use of innovating technologies in the areas of waste disposal and energy savings by using renewable energy sources.
- 1.8 To that end, the Parties wish in principle, through a proactive collaboration between EIS/LEIP and NECSA's Plasma Technology Group, to investigate the feasibility of, *inter alia*, adapting NECSA's current PWG Technology system to provide customized mobile PWG units and if successfully, to co-operate in supporting and facilitating the commercialization of such PWG units and the use of customized PWG units within the LEIP Project, South Africa and elsewhere if applicable.
- 1.9 The Parties wish to record in this MOU the broad principles and fundamental terms that will govern and regulate their aforesaid co-operation, read with the written proposal submitted by EIS and LEIP to NECSA following the Parties' meeting on 10 October 2018 (the "EIS Proposal") (a copy of which is annexed to this MOU marked Annexure "A"), all of the provisions of which EIS Proposal form part of and are to be read as specifically incorporated herein by reference.
- 1.10 The principle objective of the cooperation between the Parties is to develop and successfully commercialise plasma waste gasification technology. EIS intends to provide necessary funding for the joint research and development of NECSA's plasma gasification technology, whereby EIS wishes to manufacture and market the plasma gasifiers under a suitable agreement with NECSA.

2. Nature of MOU

This MOU records and relates solely to the Parties' commitment and undertaking to in utmost good faith:

- (a) negotiate the definitive terms and conditions on which the Parties will collaborate with each other in investigating the feasibility of adapting the PWG Technology for use in customized mobile PWG units and undertaking the necessary studies relating thereto contemplated in the EIS Proposal, with the view to initially deploying such PWG units within the LEIP Project;



- (b) negotiate suitable partnership between the Parties, as well as respective definitive terms and conditions governing such partnership, pertinent to EIS's value proposition (as captured in EIS Proposal) on the development and roll-out of the PWG technology in the Limpopo Province, and possibly beyond, as contemplated in the EIS Proposal; and
- (c) use their respective best endeavors to conclude all requisite legal arrangements relating to the matters set out in the EIS Proposal in an expeditious and proactive manner, on a basis consistent with the vision and objectives of the LEIP Project,

and does not otherwise constitute a binding legal agreement between them in respect of any other transaction relating to the use or commercialization of the PWG Technology

3. Parties' co-operation

- 3.1 NECSA confirms its firm interest in and intention of co-operating fully with EIS and LEIP in implementing the objectives of the EIS Proposal, and to that end undertakes proactively to assist them insofar as reasonably possible and practicable in achieving those objectives, subject always to its reasonable commercial discretion, and in particular (but not limited to) undertakes to:
 - 3.1.1 assist EIS and LEIP by proactively addressing and responding to all reasonable requests for information by EIS and LEIP;
 - 3.1.2 ensure that any decisions, consents, approvals or authorisations required from NECSA by EIS/LEIP relating to the implementation of the EIS Proposal are where applicable communicated or otherwise obtained without undue or unreasonable delay and/or onerous conditions;
 - 3.1.3 facilitate the conduct of any NECSA-related due diligence reviews in respect of matters relating to the EIS Proposal which may be required to be undertaken by any governmental authorities, prospective financiers and investors;
 - 3.1.4 to participate in discussions and engage with EIS/LEIP when outlining the scope of the mandates given to EIS/LEIP consultants particularly on matters falling within NECSA's regulatory authority such as the capacity of the PWG units, the number of PWG units to be deployed within the LEIP Project and any other territories as well as the general use of its PWG technology; and
 - 3.1.5 generally in an expeditious and proactive manner to do all such reasonable things, take all such reasonable steps and execute all such documents as may reasonably be necessary for and consistent with any decision adopted by NECSA to participate in the EIS Proposal as soon as practicably possible in all the circumstances.
- 3.2 Each of the Parties reciprocally undertake to, in connection with the EIS Proposal at its own cost as, and when reasonably so requested -
 - 3.2.1 to make senior personnel available to consult and/or meet with the other Parties and/or governmental authorities, prospective financiers or investors, and to do so punctually; and



- 3.2.2 to collate, generate, prepare and/or make available all such title-related, technical and financial information, data, documents, records and materials within its competency, control and/or possession, insofar as reasonably required or necessary to assist, promote, support, facilitate or progress the implementation and completion of the matters provided for in the EIS Proposal (hereinafter, the "**LEIP PWG Project**").
- 3.3 EIS will provide the financing and marketing for the LEIP PWG Project and NECSA will facilitate and provide assistance where possible. EIS will employ the PWG technology in the LEIP Project Area and the Limpopo Province for residential and commercial use with the intention of fostering the growth of small businesses that will operate the PWG technologies.
- 3.4 Each Party furthermore undertakes in favour of the other Parties:
- 3.4.1 to negotiate the terms, conditions and provisions regarding the use and commercial exploitation of the PWG units and any legal agreements that may be required to give effect to the LEIP PWG Project on the basis contemplated in this MOU in good faith and a spirit of mutual co-operation and goodwill, and generally in a transparent, frank and reasonable manner having due regard to the terms and conditions usual for transactions of the nature contemplated and the Parties' respective corporate, legal and financial requirements;
- 3.4.2 to make itself available at all reasonable times and places for meetings, consultations and/or discussions with the other Parties, their respective authorised representatives and professional advisors and all relevant governmental authorities and stakeholders, including prospective tenants and investors; and
- 3.4.3 not to do anything (by omission or otherwise) which will or may impede, interfere with, jeopardise, prejudice or otherwise circumvent in any way the successful and expeditious establishment of the LEIP PWG Project and/or any of the Parties rights to determine the most appropriate manner and means of exploiting and developing its own intellectual property.
- 3.5 Exploration of collaboration:
- 3.5.1 For the purpose of implementing clause 3.1 to 3.4 above, the Parties shall set up field specific working groups, consisting of at least two representatives from each Party and any other party contracted by any of the Parties in relation to the scope of this MOU (hereinafter referred to as "Working Group") and hold meetings periodically.
- 3.5.2 The Parties shall discuss and identify Working Group objectives, schedules and targets.
- 3.6 Without limiting the generality of the foregoing, the Parties record that nothing contained in or contemplated by this MOU is intended to limit or restrict in any way the mandate given to NECSA in realizing the commercial exploitation of the PWG Technology in terms of the provisions of the Nuclear Energy Act, including any directives and/or procedures determined by the Minister of Energy and/or NECSA's board of directors.

4. Confidentiality

- 4.1 Without derogating from the generality of any other confidentiality agreement or undertaking between the Parties, each Party undertakes and agrees to maintain in strictest confidence all and any financial, technical, business, commercial and corporate information (irrespective of in what format, medium or form same may be held) of a proprietary or commercially-sensitive nature ("**Confidential Information**") pertaining to the other Parties, the LEIP Project, the PWG Technology and/or the LEIP PWG Project that may be disclosed to or obtained by it in connection with, pursuant to and/or during the process of pursuing the objects of this MOU, and to take all reasonable steps to ensure that its officers, employees and agents to whom Confidential Information is required to be disclosed or who have or obtain access thereto are aware that same is confidential and similarly maintain such information in strictest confidence.
- 4.2 The aforesaid confidentiality obligations shall not apply to Confidential Information which comes into the public domain through no fault or breach of confidentiality by any Party, or which is required to be disclosed by a Party by operation of law or in order to enforce any legal right or remedy against another Party; provided that, prior to any such disclosure, the precise nature, scope and content of the Confidential Information proposed to be so disclosed has been notified to the Party to whom the Confidential Information belongs and it has been granted a reasonable opportunity to take appropriate steps to limit or restrict such disclosure.
- 4.3 The provisions of this clause 4, save as otherwise expressly provided for in any definitive legal agreement/s entered into amongst the Parties and shall survive the termination of this MOU for whatever reason without limit in time.

5. Termination of MOU

- 5.1 Any Party may at any time on or after the Effective Date terminate this MOU, provided that it shall have in writing notified the other Party of its intention to do so not less than 60 (sixty) business days prior to the date of termination. Upon such termination taking effect, this MOU (save for clause 4) shall lapse and cease to be of any further force and effect, and no Party shall have any claim against any other Party for anything done hereunder or arising from this MOU.

6. Notices and communications

- 6.1 All notices, communications or correspondence, including service of process, intended to be given by a Party to another Party shall be in writing and given or served at the specified physical address or email address of such other Party appearing below its name on the first page of this MOU. A Party shall be entitled to change its address at any time on written notice to all the other Party, provided that such address shall be an accessible and contactable physical address.
- 6.2 Unless the contrary is proved, a notice delivered or transmitted by email on a business day during normal business will be deemed received on the day of delivery or transmission, as the case may be, or on the next succeeding business day if delivered outside normal business hours or on a day which is not a business day; and if posted by pre-paid registered mail; will be deemed to have been received on the 10th day after posting. Notwithstanding anything to the contrary contained herein, a written notice or communication actually received by a Party shall be an adequate written notice or communication to it notwithstanding that it was not sent to or delivered at its chosen *domicilium citandi et executandi*.

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7. General

- 7.1 This document constitutes the sole record of the agreement between the Parties in relation to the subject matter hereof and supersedes the terms and conditions of any previous agreements (oral or written) relating thereto, including any term sheets or similar containing the Parties "in principle" agreement. No Party shall be bound by any express, tacit or implied term, representation, warranty, promise or the like not recorded herein.
- 7.2 No amendment, variation, novation of any provision of, or agreed cancellation of this MOU, shall be binding upon the Parties unless reduced to writing and signed by or on behalf of the Parties.
- 7.3 No indulgence or extension of time which any Party may grant to the other Party shall constitute a waiver of or, whether by estoppel or otherwise, limit any of the existing or future rights of the grantor in terms hereof, save in the event and to the extent that the grantor has signed a written document expressly waiving or limiting such right.
- 7.4 The provisions of this MOU shall, to the extent applicable in law, be binding on a Party's successor-in-title, executor, heir, liquidator, curator or other legal representative/s.
- 7.5 All provisions of this agreement are, notwithstanding the manner in which they have been grouped together or linked grammatically, severable from each other. Any provision of this MOU which is or becomes unenforceable in any jurisdiction in which it applies or in which its enforcement is sought, whether due to voidness, invalidity, illegality, unlawfulness or for any other reason whatever, shall, only to the extent that it is so unenforceable, be treated as *pro non scripto* and the remaining provisions of this MOU shall remain of full force and effect. The Parties declare that it is their intention that this agreement would be executed without such unenforceable provision if they were aware of such unenforceability at the time of execution hereof.
- 7.6 No Party shall be entitled to cede, delegate or otherwise transfer all or any of its rights, interests or obligations under and in terms of this agreement to any other person without the express prior written consent of the other Parties.
- 7.7 This MOU shall be governed by and interpreted in accordance with the laws of South Africa.
- 7.8 The rule of construction that the contract shall be interpreted against the Party responsible for the drafting or preparation of the agreement shall not apply.
- 7.9 Each of the Parties will bear its own costs of and incidental to the negotiation preparation and signature of this MOU.
- 7.10 This clause 7 shall remain in full force and effect notwithstanding any termination of the MOU.



8. Signature

8.1 This MOU is signed by each of the Parties on the dates and at the places indicated below, it being recorded that the date of last signature hereof by a Party shall constitute the "Effective Date" and inserted as such on the first page of the MOU.

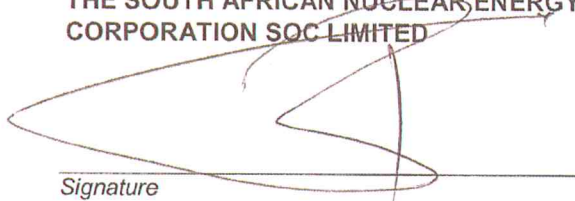
8.2 This MOU may be executed in counterparts, each of which shall be deemed an original, and all of which together shall constitute one and the same agreement as at the date of signature of the Party last signing one of the counterparts.

8.3 The persons signing this MOU in a representative capacity warrant their authority to do so.

SIGNED at Neesa on 26th November 2018

For and on behalf of

THE SOUTH AFRICAN NUCLEAR ENERGY CORPORATION SOC LIMITED



Signature

Mr. Brian Mphahlele

Name of Signatory

Group Executive: Business
Development and Innovation

Designation of Signatory

SIGNED at Modimolle on 26 November 2018

For and on behalf of

ECO-INDUSTRIAL SOLUTIONS PROPRIETARY LIMITED



Signature

DESHIKA KATHARARO

Name of Signatory


CEO

Designation of Signatory

SIGNED at Modimolle on 26 November 2018

For and on behalf of

LIMPOPO ECO INDUSTRIAL PARK COMPANY PROPRIETARY LIMITED



Signature

DESHIKA KATHARARO

Name of Signatory

CEO

Designation of Signatory



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ANNEXURE "A"

COPY OF EIS PROPOSAL TO NECSA

PLASMA WASTE GASIFICATION RESEARCH AND TECHNOLOGY DEVELOPMENT PROPOSAL

Eco-Industrial Solutions (Pty) Ltd: (EIS)

Registration Number: 2011/010551/07
(hereinafter "EIS")

and

Limpopo Eco-Industrial Park (Pty) Ltd

Registration Number: 2011/011077/07
(hereinafter "LEIP Co")

and

The South African Nuclear Energy Corporation SOC Limited (Necsa)

Registration Number: 2000/003735/06
(hereinafter "NECSA")

The **South African Nuclear Energy Corporation SOC Ltd**, a public institution of higher education with administrative offices at Elias Motsoaledi Street Extension (Church Street West), R104 Pelindaba, Madibeng, North West Province ("NECSA"), and **Eco-Industrial Solutions (Pty) Ltd: ("EIS")**, and **Limpopo Eco-Industrial Park (Pty) Ltd ("LEIP")** having a place of business at 9 Sussensvale, Modimolle, Limpopo (together hereinafter "Company") agree as follows:

1. Background to the proposal

1.1 EIS approached NECSA during 2017 with the intention to sponsor and participate in plasma waste gasification technology development research under the direction of NECSA for integration of the plasma waste gasification technology in the LEIP, to render the LEIP, Africa's first zero-solid waste eco-industrial park.

1.2 NECSA has expressed an interest in collaborating and is willing to grant certain rights to EIS upon the terms and conditions set forth in the MOU.

2. Proposal for EIS and NECSA collaboration

Based on the outcome of the meeting held on the 10th October 2018, it is exciting that NECSA and EIS desire to collaborate to achieve the following:

2.1 EIS and NECSA wish to achieve appropriate commercialisation of the research results and jointly achieve the realisation of the first commercial plasma waste gasification plant, located within the LEIP.

2.2 EIS will provide the financing for the technology development, according to an agreed budget.

2.3 EIS will appoint NECSA as an Owner's Engineer for the first commercial gasifier that will be procured from a foreign supplier for us within the LEIP.

2.4 In exchange for EIS's contribution, EIS wishes for NECSA to Grant an Exclusive License to EIS for the Limpopo Province and all countries outside South Africa, for a minimum period of 15 (fifteen) years, and renewable for another period of 15 (fifteen) years by mutual consent thereafter.



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- 2.5 EIS will conduct market access and sales, with support by Necsa, as may be agreed between the Parties.
- 2.6 EIS will appoint NECSA as the Operations and Maintenance partner for all plasma gasifier units that are successfully sold and/or employed by EIS. Separate O&M agreements will be concluded for each plasma gasifier customer.
- 2.7 EIS will form local SMME partnerships with all plasma gasifier units sold by EIS, to create job opportunities for qualified young entrepreneurs and labourers.
- 2.8 NECSA will provide a detailed technology development road map and associated timelines with an accompanying scope and cost schedule.
- 2.9 The partnership agreement will be defined initially in the form of a MOU. The approval process envisaged is outlined diagrammatically below.



3. Definitions

- 3.1 "Exclusive License" shall mean the license is limited to a specific scope or field, such as context, market, territory, or time, all of which is addressed in the MOU. 'Exclusive' does not mean a 'one and only' license granted, but only that the licensor agrees not to grant other licenses that have the same rights within the scope or field covered by the exclusive license.
- 3.2 "Project" is set forth in this proposal, and is entitled, "PLASMA WASTE GASIFICATION RESEARCH AND TECHNOLOGY DEVELOPMENT PROJECT".
- 3.3 "Project Period" shall be from the date of the Parties signing a definitive agreement until the plasma gasification technology is commercialised.
- 3.4 "Company Personnel" shall mean any and all technical or other personnel designated or used by Company to perform, render, or supervise any services, research, or assistance related to the Project, and who have obligations to assign their rights in proprietary matters to Company.
- 3.5 "NECSA Personnel" shall mean any and all technical or other personnel who are designated or used by NECSA to perform research, render assistance, or supervise any services related to the Project, and who have obligations to assign their rights in proprietary matters to NECSA. NECSA Personnel shall also include NECSA employees or students who are also consultants of Company.
- 3.6 "Company Liaison" shall be Dr Pieter du Toit, the LEIP Project Director designated by EIS to be the primary contact with NECSA Project Manager.
- 3.7 "Research Results" shall mean information, materials, and work products developed by NECSA during the Project, including without limitation inventions, discoveries, products, devices, models, prototypes, computer software, documentation, and technical data.

End.