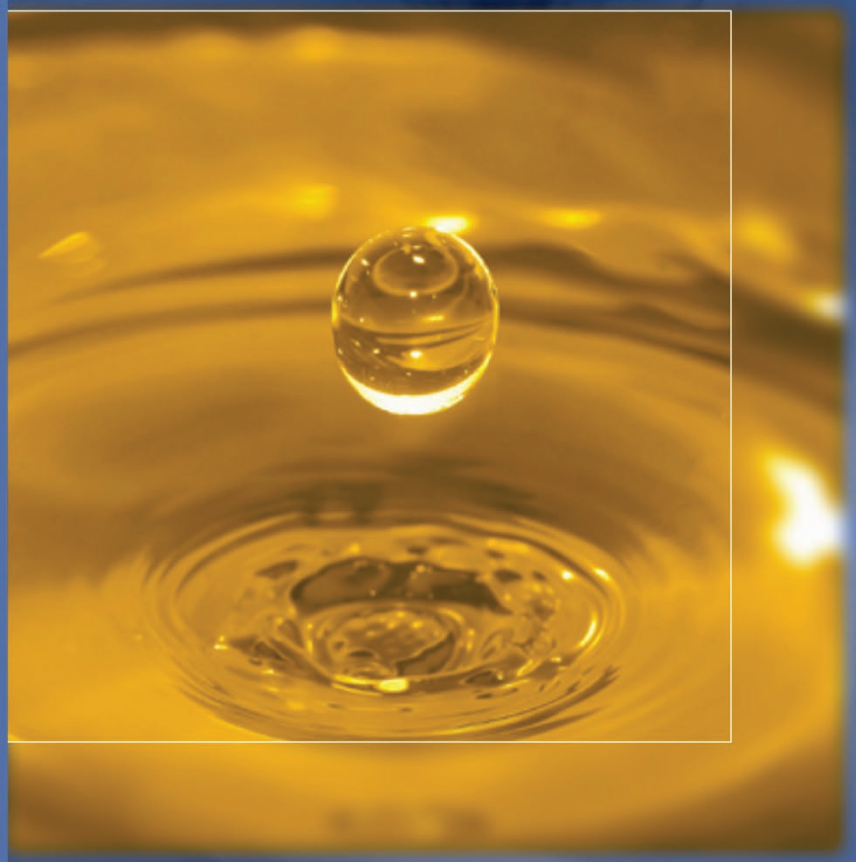
chapter 1
introduction



FINAL SCOPING REPORT

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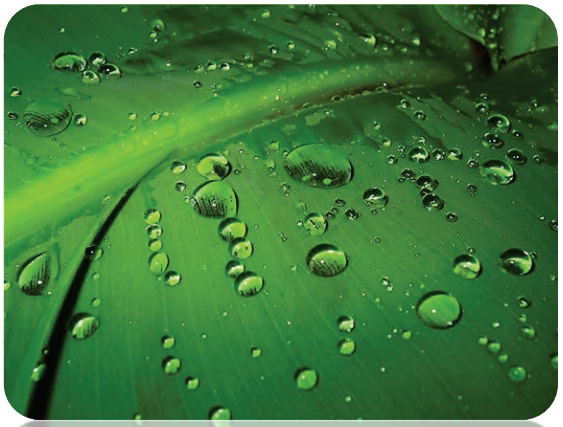

1. INTRODUCTION

1.1 PROJECT OVERVIEW

With the aim of supplying biofuels to the EU, the PhytoEnergy Group as represented in South Africa by PhytoEnergy of Southern Africa (Pty) Ltd and its sister companies, PhytoFarming (Pty) Ltd and PhytoAmandla (Pty) Ltd, proposes to establish a canola oil-pressing and trans-esterfication plant for the production of biodiesel in the Coega Industrial Development Zone (IDZ) near Port Elizabeth, South Africa. PhytoAmandla (Pty) Ltd will construct and operate the processing plant and will hence forth be considered the proponent.

The plant is planned to have an output capacity of 400 000 metric tons of biofuel per annum derived from approximately one million tons of canola produced annually on about 500 000 ha of existing commercial and communal cultivated agricultural farmland. Feedstock will primarily be sourced from the Free State and Eastern Cape, but also from the Northern Cape, Mpumalanga and KwaZulu-Natal provinces. Importing feedstock is considered a contingency plan should sufficient local feedstock not be available, especially during the start-up phase of the project.

Feedstock will be produced according to an agricultural model focused on responsible and sustainable feedstock production. The agricultural model will be implemented in co-operation with private contractors, the Eastern Cape Development Corporation as well as national and provincial Departments of Agriculture. The agricultural model has been developed to increase national food production by producing the canola feedstock as a rotational crop with food crops, with canola grown in winter and a food crop such as maize or sorghum grown in summer.

The design of the biofuel processing plant in the Coega IDZ is based on innovative German technology with the purpose of processing the feedstock in South Africa and exporting the primary product for sale into EU markets. As soon as a market arises in South Africa the biofuel can also be sold locally.

An onsite biogas facility will produce electricity and process heat to decrease the dependency of the plant on power from the national grid. It is the aim for the processing facility not to emit any carbon that was not sequestered during the growing of feedstock, thus rendering the growing and processing components of the project carbon neutral. The carbon neutral processing plant will internationally be the first of its kind.

Figure 2-1 in Chapter 2 indicates the proposed location of the project within Zone 5 of the Coega IDZ, as well as alternative pipeline routes to be considered during the Scoping and EIA process.

The project will include the following key components:

- The construction of two biodiesel plant trains with a 200 000 ton annual biodiesel output capacity each, totalling 400 000 tons per annum;
- The construction of onsite silos with an approximate canola storage capacity of 100 000 tons;
- The construction of an onsite pelletized meal storage facility with a capacity of approximately 30 000 tons;
- The construction of an onsite biogas plant to convert organic by-products to process heat and electricity. The electrical generation capacity of the biogas plant is estimated to exceed 10 MW, and will be used to decrease reliance and demand on the national electrical grid; and
- Alternative pipeline routes connecting the processing plant to the proposed Oiltanking Grindrod Calulo (OTGC) bulk liquid storage and handling facility in Zone 8 of the IDZ.

1.2 NEED AND DESIRABILITY OF THE PROJECT

Growing concerns over security of energy supply, climate change and environmental health are driving a shift from fossil to alternative fuels with the aim of ensuring long term sustainability. The promotion of biofuels, if feedstocks are produced in a sustainable and responsible manner, offers benefits both for security of energy supply and for mitigating climate change. Biofuels are largely compatible with today's vehicles and can be blended with fossil fuels. The promotion of biofuels is currently a political priority as part of the EU energy-climate policy, and is bound to be taken up by an increasing amount of non-EU countries in the future.

Directive 2009/30/EC of the European Parliament and of the Council of 23 April 2009[1] allows for the blending of ethanol into petrol up to 10% (v/v) and for a Fatty Acid Methyl Ester (FAME) content of 7 % (v/v) in diesel. In addition, directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009[2], on the promotion of the use of energy from renewable sources, introduced a binding European target of 10% share of renewable energy in transport by 2020. Biofuels make a substantial contribution to this target.

Because there is insufficient arable land within the EU, its target for biodiesel from vegetable oils can only be met by importing biofuel or vegetable oil. According to Fitsche *et al.* (2005)[3] biofuel imports from a developing country, such as South Africa, is only a reasonable option if: 1) security of food supply is assured as far as possible; and 2) total biofuel cultivation and production has a positive sustainability balance compared to alternate land uses, with due consideration given to economic, social and environmental aspects.

According to the National Department of Trade and Industry[4] the biofuel project proposed by the PhytoEnergy Group has the potential to bring an estimated capital investment of € 300 million to South Africa and create 25 000 local jobs. The project will also contribute to the European Union's goal of having 10% of energy used for transport in Europe to come from renewable sources by 2020. The project has the potential to alleviate poverty and promote agricultural best practices and education in the Eastern Cape Province while increasing national food production. The project will not only increase food production through the increase of the amount of food crops produced in South Africa, but also produce 600 000 tons of oilcake that can be used as livestock feed. More than a million tons of oilcake is currently being imported by South Africa every year.

The proposed project will be located within Zone 5 of the Coega IDZ approximately 15 km north-east of Port Elizabeth, which is situated in the economically disadvantaged Eastern Cape Province. The Coega IDZ is a premier location for new industrial investments in South Africa. It covers an area of approximately 11 000 hectares of which approximately 8690 hectares are available for development. The Coega IDZ constitutes a phased development which is focused around industry clusters and has been divided into a total of 14 different zones. Sectors which have been identified for the IDZ consist of Automotive, Agro Processing, Metallurgical, Educational and Training, Petro Chemical, General Manufacturing, Business Process Outsourcing and Energy. The proximity of the IDZ to the newly established deep water Port of Ngqura, as well as major transport routes and other predominant

[1] Directive 2009/33/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of clean and energy-efficient road transport vehicles. Available online at http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32009L0033:EN:NOT Accessed 13 January 2012

[2] Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC. Available online at http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32009L0028:EN:NOT Accessed 13 January 2012

[3] Fritsche, U.R., Hünecke, K. and Wiegmann, K. 2005. Criteria for assessing the environmental, economic, and social aspects of biofuels in developing countries. Institute for Applied Ecology, Darmstadt, Germany.

[4] Department of Trade and Industry COP 17 presentation. 15 December 2011. Available for download from: http://www.phytoenergy.org/

development centres such as Johannesburg and Cape Town, creates a platform for global exports by attracting foreign and local investment in manufacturing as well as export orientated and other industries.

Zone 5 (metallurgical cluster) of the Coega IDZ is considered to be the most suitable area for the establishment of the proposed Biofuel Processing Plant. Two alternative locations in the East London IDZ and in Berlin (between East London and King Williams Town) were also considered before 2009, but were found to be unfeasible due to logistical considerations.

1.3 PROJECT PROPONENT

PhytoEnergy is a global organization with expertise in renewable energy project development and management. The company has global partners with unique capabilities and technical knowledge. PhytoEnergy operates as a system integrator to facilitate the fusion of its partners' capabilities and know-how to deliver the most reliable and cost effective solutions, with state of the art technologies and a focus on community development and awareness. The core feature of the company is the Agrarian Model which allows an integrated food and energy crop production by making use of a winter-summer crop rotation systems.

The PhytoEnergy Group is represented in South Africa by PhytoEnergy of Southern Africa (Pty) Ltd and its sister companies, PhytoFarming (Pty) Ltd and PhytoAmandla (Pty) Ltd (**Figure 1-1**). PhytoAmandla (Pty) Ltd will be the operator of the processing plant and is thus the proponent.

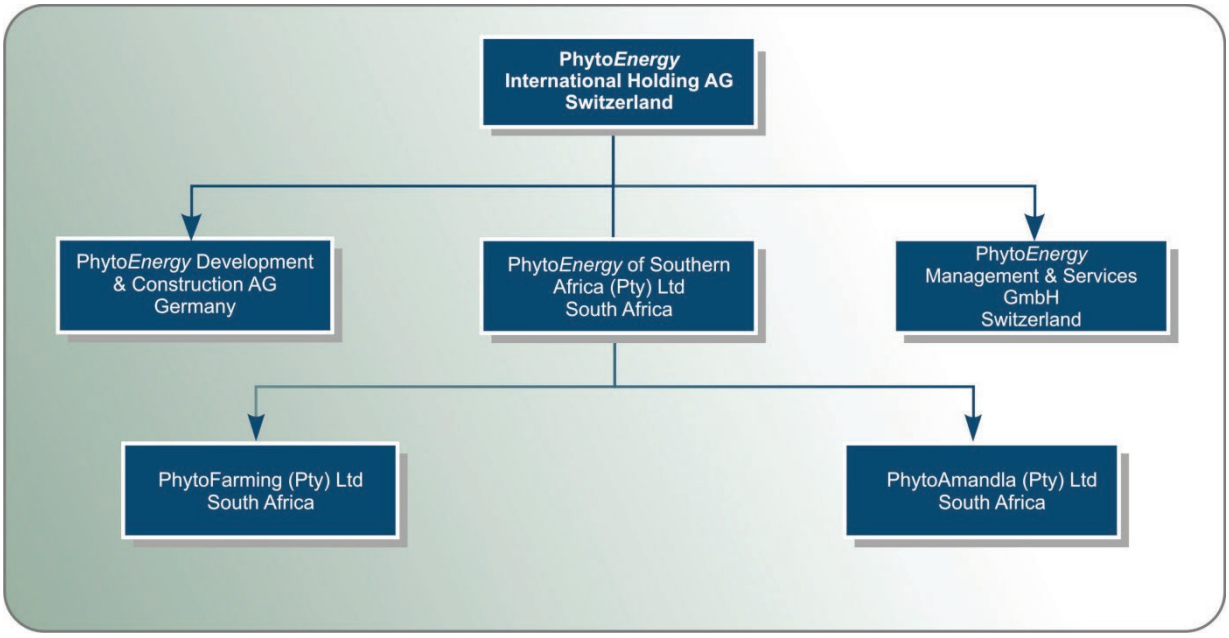

Figure 1-1 PhytoEnergy Group company structure.

1.4 ENVIRONMENTAL ASSESSMENT PROCESS

In order to receive environmental authorisation from the South African government and to count towards the EU renewable energy targets for biofuels, the project has to comply with EU sustainability criteria as well as local environmental legislation. These criteria, legislation and guidelines aim at preventing impacts on food security and the conversion of areas of high biological or socio-economical value for the production of feedstock.

In terms of the National Environmental Management Act (NEMA) (Act 107 of 1998) and GN R 543, 544, 545 and 546 (as amended) promulgated on 18 June 2010 (referred to as the NEMA EIA Regulations, 2010), the project requires full Scoping and Environmental Impact Assessment (EIA). The decision making authority for the Environmental Authorisation is the National Department of Environmental Affairs (DEA). In terms of the National Environmental Management: Air Quality Act (NEM:AQA), Act 39 of 2004, the project requires an Atmospheric Emissions License (AEL) for activities listed in terms of Section 21 of NEM:AQA. The AEL will be issued by the Nelson Mandela Bay Municipality. The project also requires a Waste License in terms of the National Environmental Management Waste Act (NEM:WA), Act 59 of 2008, in terms of Activities listed in Category A. The Waste License will be issued by the Eastern Cape Department of Economic Development, Environmental Affairs and Tourism (DEDEAT). It has been agreed with the respective competent authorities that both the Waste License and Atmospheric Emissions License application procedures will be integrated into the Scoping and Environmental Assessment Process.

The CSIR has been appointed by PhytoAmandla to undertake the EIA required for the project and Public Process Consultants will manage the public participation component of the EIA. Public involvement forms an important component of this process, by assisting in the identification of issues and alternatives to be evaluated.

In an Environmental Screening Study conducted by the CSIR during 2012[5] it was concluded that the EIA conducted according to South African legislation should consider only the processing plant and its associated infrastructure within the boundaries of the Coega IDZ. This recommendation was based on the following findings:

- The project activities outside of the Coega IDZ include primarily the growing, transport and storage of canola feedstock, using existing cultivated farmland. Based on the project information provided to the CSIR, at that time, the envisaged activities were not anticipated to trigger the need for Environmental Authorisation in terms of South African legislation; and
- If needed, the plant can operate independent of South African feedstock production by making use of imported feedstock.

It must be noted that the need for Environmental Authorisation of activities outside the Coega IDZ depends on the site selection for growing and storage facilities. For example, the agricultural land to be used must not have been left fallow for more than 10 years and storage facilities must be constructed on land zoned for industrial use and these facilities must not trigger an AEL.

[5] CSIR, 2012. Environmental Screening Study for the proposed Biofuel Project proposed by PhytoEnergy in Southern Africa: Screening Report. CSIR Report Number: CSIR/CAS/EMS/ER/2012/0002/B. Stellenbosch.

1.5 EIA TEAM

During the EIA, specialist investigations will be undertaken to address the issues of concern identified through the Scoping Process. This includes the assessment of alternatives, identification of impacts and the determination of the significance of impacts. Specialists will, where appropriate, formulate mitigatory measures to maximise positive benefits or avoid/minimise potential negative impacts. The EIA team includes the following specialists that have been identified, at this stage, to form part of the environmental assessment phase of the project:

Table 1-1 EIA team

EIA MANAGEMENT		
Paul Lochner	CSIR	**Project Leader (EAPSA Certified)**
Cornelius van der Westhuizen	CSIR	**Project Manager**
SPECIALIST TEAM		
Dr Mark Zunckel	Umoya-Nilu Consulting	**Air Quality Assessment**
Prof Eileen Campbell	Nelson Mandela Metropolitan University	**Botany & Salt Marsh Biology Assessment**
Brett Williams	Safetech	**Noise Assessment**
Ronelle Claassen	Poltech EC	**Waste Management Study**
PUBLIC PARTICIPATION PROCESS		
Sandy Wren	Public Process Consultants	**Public Participation Process**

1.6 DETAILS AND EXPERTISE OF THE EAP

The EIA Project Team is being led by Paul Lochner, who has 19 years experience as an environmental assessment practitioner (EAP) in environmental assessment and management studies, primarily in the leadership and integration functions. He is a certified Environmental Assessment Practitioner for South Africa (EAPSA). Paul is supported by a CSIR Project Manager, Cornelius van der Westhuizen. Cornelius completed an MSc Environmental Management at the Christian Albrecht Universität zu Kiel, Germany (refer to Appendix A for EAP CVs).

1.7 OBJECTIVES OF THIS SCOPING REPORT

The Scoping Phase of the EIA refers to the process of determining spatial and temporal boundaries for the EIA. In broad terms, this involves three important activities:

- Confirming the process to be followed and opportunities for stakeholder engagement;
- Clarifying the project scope and alternatives to be covered; and
- Identifying the key issues to be addressed in the impact assessment phase and the approach to be followed in addressing these issues.

This is done through consulting with:

- The authorities involved in the decision-making for the EIA application;
- Civil society to ensure that local issues are well understood; and
- The EIA specialist team to ensure that technical issues are identified.

The objective for the Scoping Report is to present stakeholders, including organs of state, with an overview of the proposed activity and associated issues that require assessment in the EIA Phase. Its availability in the public domain allows for additional issues that may require assessment to be identified.

Issues raised during the scoping process have been captured in the Issues Trail, Chapter 5, of this Final Scoping Report. This Final Scoping Report is now available for public comment for a prescribed period of 21 days (excluding public holidays), **ending on 24 August 2012**, after which it will be considered by the competent authority (i.e. DEA)

Regulation 28 of the NEMA EIA Regulations GN.543 prescribes the content of Scoping Reports and specifies the supporting information that must accompany submission of the Scoping Report. Regulations 54 to 57 in R.543 relate to the public participation process and, specifically, the registration of interested and affected parties and submissions from them. Table 1-2 shows where these requirements are addressed in this Final Scoping Report.

Table 1-2 Summary of where requirements of Section 28 of the 2010 NEMA EIA Regulations (GN R 543) are provided in this Scoping Report.

SECTION	REQUIREMENT FOR SCOPING REPORT	WHERE THIS IS PROVIDED IN THIS FINAL SCOPING REPORT
28 (1)(a)	Details of the EAP who prepared the report.	**Chapter 1 & Appendix A**
28 (1)(b)	Description of the proposed activity and reasonable alternatives	**Chapters 2**
28 (1)(c)	Description of feasible and reasonable alternatives	**Chapter 2**
28 (1)(d)	Description of the property and the location of the activity on the property	**Chapter 3**
28 (1)(e)	Description of the affected environment	**Chapter 3**
28 (1)(f)	Identification of legislation and guidelines considered for the preparation of Scoping Report	**Chapter 4**
28 (1)(g)	Description of environmental issues and potential impacts, including cumulative impacts	**Chapter 6**
28 (1)(h)(i)	Steps taken to notify potential interested and affected parties (I&APs) of the application	**Chapter 4**
28 (1)(h)(ii)	Proof of notice boards, advertisements and notices to I&APs	**Appendix E, F & G**
28 (1)(h)(iii)	List of all persons or organizations identified and registered as I&APs in terms of regulation 55	**Appendix D**
28 (1)(h)(iv)	Summary of issues raised by I&APs, date received and response by EAP	**Chapter 5**
28 (1)(i)	Description of the need and desirability of the proposed activity	**Chapter 1**
28 (1)(j)	Description of identified potential alternatives to the proposed activity, including advantages and disadvantages that the proposed activity or alternatives may have on the environment and the	**Chapter 2**

	community that may be affected by the activity	
28 (1)(k)	Copies of representations, objections and comments received in connection with the application or Scoping Report from I&APs	**Appendix H**
28 (1)(l)	Copies of the minutes of meetings held by the EAP with I&APs and other role players	**Appendix I**
28(1)(m)	Any responses by the EAP to those representations, objections, comments and views	**Chapter 5**
28 (1)(n)(i)	Description of tasks undertaken as part of the EIA, including specialists reports and the manner in which tasks will be undertaken	**Chapter 6**
28 (1)(n)(ii)	Indication of stages at which competent authority will be consulted	**Chapters 4 & 6**
28 (1)(n)(iii)	Description of proposed method for assessing environmental issues and alternatives, including "no project" alternative	**Chapter 4 & 6**
28 (1)(i)(iv)	Particulars of public participation process during EIA	**Chapter 6**
28 (1)(o)	Specific information required by competent authority	**N/A**
28 (2)	Guidelines applicable to the kind of activity which is the subject of the application	**Chapter 4**
28 (3)	Detailed, written proof of investigation as required by section 24(4)(b)(i) of the Act and motivation if no reasonable or feasible alternatives	**Chapter 2**