Fel: +27 (0)11 392 4060/5748 Fax: +27 (0)86 659 0494 e-Mail: director@naacam.co.za st Floor, Kaymac House 53 Harris Avenue, Isandovale, Gauteng P.O. Box 9558, Edenglen, 1613 GPS Co-ordinates: S26°08'13" E28°11'23"

from the office...

The major event since the last issue was the long-awaited announcement by the Minister of Trade and Industry, Rob Davies, of the changes to the APDP following last year's review. The Minister's statement together with NAACAM's comment is on the next page.

During the course of 2014, there had been a number of engagements by dti with NAACAM and NAAMSA where possible changes were discussed, and this had created an expectation that there would be amendments aimed at moving the industry towards the agreed objectives of significantly higher volumes and deeper localisation.

Unfortunately none of this materialised and the announcement could be viewed as "a damp squib".

What we have instead is a concession to the vehicle assemblers to enable them to earn all APDP benefits at lower volumes and nothing for component manufacturers except a welcome freezing of the catalytic converter incentives in 2017 instead of a continuing reduction.

None of these changes will assist in any way in addressing the low levels of localisation in the country. With some OEMs earning credits surplus to their own requirements, these companies have little incentive to increase localisation - the Minister's announcement ignored these surplus credits.

It is clear that government did not want to make any major changes to the APDP which might jeopardise investments, which is understandable. However it is disappointing that some of the minor tweaks discussed last year, which would have sent signals to the industry that government was serious about volumes and localisation, were abandoned.

I am pleased to advise that at the NAACAM AGM held in the last week in November Dave Coffey was elected President while Ken Manners, the outgoing President, was elected Vice-President.



In his report for 2015 Ken highlighted the association's involvement in many undertakings on behalf of members. These included support for BBBEE activities - a survey of members' scorecards has shown progress in most areas between 2012 and 2015. For example, ownership average improved from 3,9 to 6,4 points despite the preponderance of multinational companies with 100% foreign ownership, while the overall average score improved from 37 to 41 points.

NAACAM and its members are able to steer the direction of ASCCI, the Automotive Supply Chain Competitiveness Initiative, through a majority on the Executive Committee, and together with OEMs have identified several component groupings for localisation initiatives. The first four are seat components, drive shafts, prop and side shafts and heat exchangers (radiators and air-conditioners). The project, which is funded by the dti, will identify cross cutting blockages in the industry and also develop business cases for the localization of a specific set of sub-components in order to deepen the local supply chain.

Additionally, NAACAM has represented members' interests at regular NAAMSA meetings, has lent support to BUSA's efforts on electricity price increases and carbon tax proposals, negotiated appropriate reductions in levies with the Motor Industry Ombudsman and is represented on many other bodies.

Ken concluded his report by stating that a major focus for NAACAM in 2016 would very active participation in the government's study to develop a post-2020 support framework for the automotive sector, and to this end he would chair a new NAACAM Task Team to formulate recommendations for a programme to replace the APDP.

I encourage members to read the interesting articles in this newsletter, in particular on page 6 where PwC addresses the situation where a supplier bears the cost of tooling, which cost is amortised in the piece price and subsequently the customer's volumes fall short of expectation.

Finally, all of us wish all of you a very happy Christmas and a restful holiday to prepare for the challenges of 2016!

Roger Pitot



AUTOMOTIVE DEVELOPMENT PRODUCTION PROGRAMME Minister's Statement and NAACAM's Comment

History

In September 2008 the dti announced the details of the APDP, which was to replace the then automotive sector-specific programme, the MIDP. The APDP was fully implemented by January 2013 with a view to steer the automotive industry towards producing about 1.2 million vehicles by 2020, with attendant expansion of the domestic supplier base.

Since the original APDP framework was developed in 2008 the global and domestic economy changed dramatically, raising a concern that there could be limitations in the program that may lead to failure to achieve set objectives for the industry.

In February 2014 the dti engaged the services of a specialist advisor to coordinate a review of the APDP with a mandate to make recommendations to secure optimal outcomes for the sector and economy, whilst retaining long-term certainty for investment.

Process

The appointed advisor, Mr Roger Pitot, worked with a team of officials from the dti and TIPS and interacted with industry stakeholders such as NAACAM, NAAMSA, NUMSA as well as officials from the National Treasury. The final proposals were arrived at after several interactions with industry stakeholders at various levels, culminating in a consideration by Cabinet.

Findings

The 2020 target of producing 1.2 million vehicles per year is unlikely to be achieved due to a variety of reasons such as the fact that the global economy is still recovering from the effects of the 2008/9 financial crisis. Secondly, it will also be extremely difficult to achieve significant expansion and deepening of the local supplier base under the prevailing conditions.

Key Proposals

In an effort to sustain and grow the industry, whilst steering it towards the APDP vision of high volume vehicle production, the following proposals will be implemented;

- a) A post-APDP support framework will be developed during the course of 2016 in order to provide a certain policy environment for automotive manufacturing in SA after 2020.
- b) The volume threshold for vehicle production will be reduced from 50 000 units to 10 000 units per annum in order to allow new entrants into the local industry.
- c) The Volume Assembly Allowance (VAA) will be offered on a sliding scale based on volume commencing at 10% for 10 000 units to 18% at 50 000 units from January 2016.
 d) A suitable capital incentive (AIS) level will be provided for new
- d) A suitable capital incentive (AIS) level will be provided for new entrants at the less than 50 000 pa threshold.
- e) The production incentive for catalytic converters will be frozen at the 2017 level of 65% rather than continue the phase down.
- f) The qualification for component suppliers to earn APDP benefits will be tightened in order to avoid these being earned on non-core automotive products and priority afforded to those products that add value in the value chain.
- g) Lastly, cabinet has mandated an approach to the National Treasury for higher investment support for tooling as a means of encouraging further component localization. Overall national budget constraints are noted in this context.

Strategic Direction: Government remains committed to further development of the automotive industry in line with the National Industrial Policy Framework (NIPF) and the Industrial Policy Action Plan (IPAP). Long-term development of the sector will be achieved through high vehicle production volumes and associated local value addition.

Other Policy Imperatives: As we develop a post-APDP automotive master plan we will also actively engage the industry in efforts that seek to promote meaningful transformation of the industry through the inclusion of previously excluded groups in the entire automotive value chain. The current situation is characterized by extremely low participation of Blacks in the automotive industry. This is prevalent through all parts of the sector's value chain, including distribution, retail and aftersales/service. The levels of support afforded to the industry in SA need to be reflected through an appropriately transformed sector.

Implementation Plan: As we set up the necessary regulatory amendments and administration system for the programme, we will ensure that it is in line with the need for a strong monitoring and evaluation system, but still not unduly burdensome to stakeholders.

NAACAM'S COMMENT

NAACAM welcomes Governments' continued support for the automotive sector.

Two years since the introduction of the APDP, vehicle assemblies in South Africa continue to grow albeit modestly, despite poor local and global economics. The review announcement by Minister Davies on Friday 6th November will ensure continued growth, legitimizing Governments' continued support.

Having digested the contents of the announcement, we are disappointed that this review did not yield more meaningful requirements for local manufacture of components and subassemblies. In spite of vehicle assemblies growth, real local content percentages have declined in this period, especially in the manufacturing sub sector, most notably at Tier Two level, where real employment, skills development and transformation opportunities lie.

The announcement of lower VAA thresholds may welcome new participants, but will do little to change this local content deterioration.

NAACAM is cognisant and appreciative of significant OEM investments based on the principles of the APDP, but with no changes to the current parameters for another five years, we are concerned that the component manufacturers will find it more challenging to compete on a sustainable basis.

NAACAM will work actively with all the Automotive Industry stakeholders to bring about the required changes to the programme post 2020 that will result in real localisation and job creation, whilst finding the appropriate stability and balance in the industry.

Ken Manners, President NAACAM

> We take pleasure in inviting you to advertise in the 2016 NAACAM Directory. Your advert would appear in print, on the CD and a banner on the NAACAM website (www.naacam.co.za – click on Directory) which will link to your company's website. Please contact Lynn for all information: lynn@balgair.co.za or Tel: +27 46 624 8379



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NAACAM COMMENT ON THE BMW INVESTMENT • • •

NAACAM is appreciative of BMW's announcement on their investment to produce the X3 locally. We know these decisions are not made easily, and this is positive news for the South African economy.

We note no details have been released indicating anticipated build volumes - we are certainly hopeful they will equal or exceed the 70,000 annual volume of the current 3-series.

Our members will be eager to engage with BMW to find meaningful localisation opportunities for this new project, especially at component (as opposed to sub-assembly) levels, where Tier Two & Three manufacturers can offer significant cost saving benefits to BMW and,

at the same time, grow employment and skills most markedly.

Employment creation and high level skills development are vital in this country and since the majority of the automotive industry employment is generated in the component suppliers, it is essential all OEMs strive for additional, meaningful local content.

Ken Manners, President: NAACAM

Contact: Ken Manners - 011 894 7771 / 082 900 8260 Roger Pitot, Advisor, NAACAM - 082 789 5368

Joint NAAMSA-SA Shows Messe Frankfurt Media Release on the 2016 SA Festival of Motoring

he SA Festival of Motoring - to be held at the refurbished world class Kyalami Grand Prix Circuit & International Convention Centre from 31st August, 2016 to 4th September, 2016 - will succeed the previously staged Johannesburg International Motor Show.

The choice of venue is ideally located between Pretoria and Johannesburg and offers outstanding exhibition, entertainment and conference facilities. The SA Festival of Motoring has been inspired by the highly successful Goodwood Festival of Speed in the United Kingdom and will feature and focus on automotive lifestyle, entertainment, motorsport demonstrations and vehicle drive opportunities. A broad array of ancillary events will form part of the festival, including driving demonstrations, parades of vintage cars, family events, music, celebrities and outstanding cuisine and ambience.

The event represents a joint venture partnership between South African Shows Messe Frankfurt and NAAMSA with broad support from automotive companies. Depending on the success of the 2016 festival, it could well become an annual event offering an enhanced experiential showcase for the local automotive industry.

An innovative technology lab will present future trends focusing on mobile technology, including hybrid and electric vehicles and the

impending reality of the connected car. Suppliers of aftermarket automotive accessories, as well as service providers for the automotive industry, will also be represented.

It is anticipated that Messrs WesBank will continue as the platinum sponsor for the SA Festival of Motoring.

The scheduled SA Festival of Motoring will meet the needs of motoring enthusiasts in South Africa where, based on research findings, 85% of the adult population regard it important to own their own motor car.

The President of NAAMSA, Dr Johan Van Zyl, commented that the SA Festival of Motoring "represents a new concept, provides new opportunities in an ideal location and will definitely attract motoring enthusiasts and the general public. The event will feature prominently on the agenda of the South African automotive industry and represents a must attend show."

Further enquiries may be directed to Mr Nico Vermeulen, NAAMSA, at naamsa@iafrica.com / Tel: (012) 8070152/0086 and/or Mr Francois Loubser, NAAMSA Show Coordinator, at jasloubser@mweb.co.za / Tel: 0825519844 and/or Ms Pula Dippenaar, South African Shows Messe Frankfurt, pula.dippenaar@southafrica.messefrankfurt.com / Tel: (011) 494 4217

Historical lesser-consensus publications which included industry or regulatory requirements

Prior to 2008 the SABS had a regulatory function as part of Its mandate which gave the organization the authority to develop and enforce compulsory standards, conduct the necessary surveillance of products in the market and impose sanctions where non-compliance of products were detected. To support the implementation of this mandate at the time, SABS had published documents that were aimed to guide industry in achieving regulatory and compulsory objectives. These guidance publications included Codes of Practice and lesser consensus publications in the form of Recommended Practices (ARPs), Coordinating Specifications (CKSs) and Technical Specifications (TS) amongst others.

With the promulgation of new Standards Act No 8 of 2008, the mandate of the SABS was changed, which excluded all regulatory functions, The reviewed legislative mandate provides for the following functions as a National Standards Body:

- Develop, promote and maintain South African National Standards;
 Promote quality in connection with commodities, products and
- services; andRender conformity assessment services and matters connected

therewith

It has become evident there are unintended consequences in retaining the Codes of Practice, ARPs, CKSs and TS publications. These

publications create an opportunity for end users to selectively comply with requirements stipulated in these documents for the purpose of fulfilling regulatory or compulsory objectives, whilst disregarding the comprehensive requirements of a relevant South African National Standard (SANS). This practice has created confusion regarding compliance of products in the marketplace, as compliance to these documents is misidentified as full compliance to SANS. Furthermore, test reports aligned to these documents are passed off in the market as test reports complying with SANS.

It is in this context that SABS is compelled to review and repeal all lesser consensus publications that subvert the requirements of South African National Standards (SANS). As a result we will embark on a process to address all discord between national standards and lesser consensus documents. This process will be in consultation with relevant technical committees as we strive to develop and maintain coherence and relevance of the collection of SANS.

I would like to once again thank you for your commitment and contributions towards the development of national standards and look forward to your continued support.

Dr S Bissoon Executive: Standards Enquiries : Matlale Peter Telephone: 012 428 6175



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Filpro sponsors one million rands' worth of tools to Gauteng township mechanics

he Filpro Township Mechanics Sponsorship Ceremony on 11 November 2015 shone the spotlight on investing in township entrepreneurs and boosting townships' economies. Filpro, in partnership with Tirisano Trust and Atlas Copco, a global manufacturer of industrial tools and equipment, sponsored one million Rands' worth of tools to fifty motor mechanics operating informal service centers in Gauteng.

Filpro (Pty) Ltd was established in 2011 by G.U.D. Holdings (Pty) Ltd and NGK Sparkplugs and is dedicated to the development of informal automotive service centres in previously disadvantaged communities. Since its inception, Filpro has invested a significant amount of time and money in ensuring that township motor mechanics are equipped with information and skills that will enable them to become competitive and sustainable businesses.

General Manager of Filpro, Mboneni Magada, is passionate about the programme and the inroads that they have made in transforming the informal workshops into businesses over the past four years. What began as a vision supported by a team of project coordinators became a reality that has seen the programme grow to over 1000 registered programme beneficiaries in Gauteng, Free State, KwaZulu Natal, Western Cape and Northern Cape.

A variety of soft skills training such as, Basic Business Management, Finance and Bookkeeping, Sales and Marketing, Business Planning and Profiling and Business Excellence were offered to all programme participants in Gauteng. This training has equipped the small business owners with skills on how to formally operate their businesses. In addition, the programme beneficiaries received product training on automotive filters, brake pads, lubricants and spark plugs. The product training sessions highlighted the importance of fitting quality automotive parts to their clients' vehicles as cheap substandard parts are prolific in the townships. The success of the initiative is also attributed to various partner organisations such as the AA, Department of Labour, SARS, banking institutions and local municipalities.



"We appreciate the support of Atlas Copco, through their social development funding organisation, Tirisano Trust. Their generous contribution to the programme and the direct benefit to the mechanics will have a huge effect on their businesses," says Mboneni. Atlas Copco also conducted training with the motor mechanics on the tools and equipment to ensure its correct application.

The sponsorship beneficiaries were chosen based on strict criteria, which included participation in all Filpro programmes, formal registration of their business, conducting business improvements to support the transformation of their informal workshop, to a semi-formal workshop etc.

"It's been a rewarding experience working with the motor mechanics, many of whom started this line of work out of necessity without any formal training and are now running a registered workshop. They have become entrepreneurs in their own right, a position they felt was unachievable previously," she enthused.

Currently, in Gauteng, Filpro has partnered with the Chemical Industries and Training Authority (CHIETA), as well as the AA Technical College, to ensure the mechanics acquire a qualification based on their experience. This partnership has seen 40 mechanics from the programme go through for pre-trade test assessments.

The success of the Filpro Township Mechanics Sponsorship Ceremony promises the beginning of many more exciting initiatives. "At Filpro we are about positive change to give people the tools they need to empower their lives and the communities that they operate in," Mboneni concludes.

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Below: Ian Law, G.U.D. Holdings; Didier Marly, Atlas Copco; William Ledwaba, Ledwaba Xclusive Auto; Mboneni Magada, Filpro; Patrick Modisane, Tirisano Trust





Below: Filpro and G.U.D. Holdings Executives with the sponsors

Rob Stone, G.U.D. Holdings; Didier Marly, Atlas Copco; Mboneni Magada, Filpro; Patrick Modisane, Tirisano Trust; Charl Ackerman, Atlas Copco and Ian Law, G.U.D. Holdings



The NAACAM Office will be closed from 15 December to 11 January 2016

SA Automation Company revs up performance with Sasfin Commercial Solutions Incentives

An Eastern Cape Group drives companies through incentives

n 1997, a group of professionals and entrepreneurs created Ikhwezi Investment Holdings, an investment company based in the Eastern Cape, looking for opportunities in South Africa. Their core aim is to build the group into a leading second-generation empowerment holding. With eight companies under their belt, they continuously aim to identify suitable business opportunities with appropriate partners to grow the South African economy.

Directed by their value framework, the company uplifts the previously-disadvantaged through partnerships, a focus on green field ventures and on growing the renewable energy sector.

Ikhwezi Investment Holdings wanted to further develop their companies and reward their stakeholders. In 2012, they started using Sasfin Commercial Solutions Incentives for their then-new company - TrelleborgVibracoustic-Ikhwezi (Pty) Ltd. Through Sasfin they applied for a government grant through the Enterprise Investment Programme (EIP). Since then they have successfully claimed three grants for three companies including the EIP and Strategic Industrial Projects (SIP). These incentives, according to the Financial Manager, Conrad Vigne, "helped us in the initial stages with job creation and to establish a solid platform for the entities by acquiring the necessary machinery required".

The company is currently busy with its fourth grant, the Automotive Investment Scheme (AIS), for Foxtec Ikhwezi - a NAACAM member - which has already received the SIP incentive. The automotive business, Foxtec Ikhwezi, is an integral part of the Group, connecting its products with national and international markets and is a prime example of a successfully-growing company in the automotive industry.

A significant 28,000 individuals are employed in automotive production and, in 2014, 89,75 million vehicle units were produced. South Africa's automotive industry is a critical performer in the economy, contributing at least 7.2% to the GDP and almost 30.2% to the manufacturing exports economy, according to the Automotive Export Manual 2015.

According to Stats SA, manufacturing production increased by 5.6% in July 2015, driven by a 39.6% year-on-year rise in the automotive industry. International markets opt for South Africa - mainly for the companies in the Eastern Cape and Gauteng - as they provide high-quality products at competitive prices. The trade agreements with the European Union and the Southern African Development Community free-trade area also make South Africa a destination of choice as international companies can access new markets. They choose South African companies for everything from component creation to assembly.

The automotive industry has a bright future with many opportunities. However, the challenge is in meeting the expectations of international clients and keeping pace with international manufacturers.

Ikhwezi Investment Holdings heard about Sasfin through word of mouth and due to the great service they receive from Sasfin, have stayed with them since. Conrad explains that Sasfin has been "very helpful, very professional and knowledgeable". The company used Sasfin for all business units as they have "knowledge of incentives available specific to manufacturing entities". The group would not have applied for the grants on their own as they believe "it is better to have expertise assistance".

Foxtec Ikhwezi supplies high-quality, non-ferrous products, assembly-ready Aluminium suspension link arms for the Mercedes Benz C-Class and E-Class, parts for the GLK-Class, SL-Class and parts for AMG models. These products are used world-wide through Mercedes Benz and are manufactured in the local production plants. Foxtec Ikhwezi's distinguishing factor is their light products that are high in quality, volume and safety, and enable them to compete with international manufacturers.

Foxtec Ikhwezi received a contract with Mercedes Benz. The grants received, assisted through Sasfin, allowed them to grow their workforce and expand their machinery, making the targets they were aiming for possible. Securing the contract with Mercedes (due to their machinery and skill expansion) allowed Foxtec to function securely. However,

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contracts of such magnitude can only be obtained, especially over

local providers and international competitors, when companies can meet production quantities, generate cutting-edge technology and employ and train a skilled labour force. The incentives assisted Foxtec Ikhwezi to achieve their key aim of "limitless productivity from challenged, empowered, excited teams of people".

Looking back at the Group's growth, Conrad would "definitely" recommend Sasfin as the Group helped them "grow and meet stakeholders' expectations". Foxtec Ikhwezi has experienced exceptional growth since it was established in 2006. It has given back to the community through job creation and skills development, has become an international provider to a world-recognised brand and plans to continue to expand.

"There are also plans for expansion for future programmes from other customers and for other products utilising a variety of nonferrous alloys including non-automotive product," Corrad explains. He says that they would not have applied for the grants on their own as they did not have sufficient knowledge and time. The partnership with Sasfin strategically helped them attain grants specific for each business unit, maximising potential and giving back to South Africa.

To contact a Sasfin Commercial Solutions (Incentives) specialist, contact Brenden Adriaanzen on 041 391 0600 or Brenden.Adriaanzen@sasfin.com

Global Supply Chain Solutions for the Automotive industry





Optional purchases

n our bi-monthly articles, we set out some of the aspects of the new revenue standard ("the Standard") that require consideration by automotive businesses, including practical implementation considerations. In particular, this article considers Master Supply Agreements and business practice.

Consider a scenario where a manufacturer contracts with an OEM to build a tool to manufacture parts specifically for use by an OEM. The manufacturer does not receive any payment in exchange for building the tool, however, in terms of a Master Supply Agreement between the manufacturer and the OEM, the OEM will pay R1,000 for each part that is produced by this tool. The price per part and expected order quantities are intended to compensate the manufacturer for the cost of producing the tool. However, there is no contractual requirement for the OEM to purchase a specified quantity of parts from the manufacturer.

How should the manufacturer account for the fact that its consideration in this arrangement is contingent on the OEMs decision to request parts? Has the manufacturer provided an option for additional goods or services to the OEM? Or is there merely variability in the amount which the manufacturer is entitled to in exchange for the production of the tool because the quantity of parts to be sold is uncertain?

A similar fact pattern was discussed by the Revenue Transition Resource Group ("TRG") at its November 2015 meeting and the group concluded that each individual part is a promise in the arrangement. Since the customer is not obligated to purchase any parts, the only

First National Battery rewarded for excellence at NAPA Awards



First National Battery, wholly owned subsidiary of JSE listed Metair Investments Limited, South Africa's leading manufacturer of lead acid batteries, has been awarded a National Automobile Parts Association (NAPA) Emerald Supplier of the Year Award.

The annual convention, hosted by partners Midas, NAPA, Parts Incorporated Africa and the African Automotive Aftermarket Solutions (AAAS), was held at the Wild Coast Sun Resort in early September.

The theme for this year's convention was 'Power Up' and saw 400 delegates from a range of automotive centres across the country gather to honour quality suppliers and manufacturers, while providing insights into current market conditions.

Midas, a local leader in vehicle parts and accessories, relies heavily on a network of reliable suppliers to deliver class-leading products and services - First National Battery is one such supplier.

The award was judged on excellence in quality of service and products, as well as stock availability and competitive pricing. Superiority in reporting structures and strength of sales force were also taken into consideration.

"First National Battery is delighted to receive this highly coveted title," says Automotive Marketing Director Andrew Webb. "We strive to exceed the expectations of all our distributors - both in quality and service - which makes winning this prestigious award a testament to our dedication."

"We'd like to thank the AAAS team and the Midas group - particularly the incredible franchisee network - for their continued support and recognition," concludes Webb.

legally enforceable right in the example is a customer option to make future purchases.



It is important to note that there is no one size fits all for these types of arrangements and in

many cases judgment will need to be applied to determine whether a customer's option to purchase additional goods or services is truly an option, variable consideration or a material right.

We think that the principles discussed by the TRG are relevant to many arrangements in the Automotive industry. Should you have similar transactions we encourage you to research the recent discussions held by the TRG or to contact PwC in this regard.

For more information please contact:



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INVITATION TO PARTICIPATE AT THE AUTOMECHANIKA MIDDLE EAST 2016 NATIONAL PAVILION IN DUBAI, UAE, FROM 08 - 10 MAY 2016

The Department of Trade and Industry (the dti) invites South African exporters in the Automotive Industry to showcase their automotive equipment and products at Automechanika Middle East, from 08 - 10 May 2016, in Dubai, UAE.

Automechanika Middle East 2016 will showcase a full range of products for the automotive sector, including Parts and components for automobile production and spare parts for the aftermarket; Systems and modules for automobile production; Automobile accessories and tuning for the aftermarket and Workshop and petrol station equipment and aftermarket services.

If your company is competitive in the South African market, has been in business for at least two years and is export ready, it stands to benefit from the dti's Export Marketing and Investment Assistance scheme.

For more information visit *www.automechanikagulf.com* National Pavilion application forms and guidelines can be downloaded via the dti website: *http://www.thedti.gov.za/trade_investment/ docs/emia/national_pavilions_manufacturing_app.pdf*

For any enquiries pertaining to applications please contact: Ms Batseba Morudi, **Tel**: 012 394-1195, **Email**: BMorudi@thedti.gov.za

For any enquiries pertaining to the sector and/or event please contact: Ms Mpho Sebatana, Tel : 012 394 3415, Email: MSebatana@thedti.gov.za

NB! The deadline for submission of complete National Pavilion application forms accompanied by all supporting documentation is 08 December 2015



NEW NAACAM MEMBERS

(since Directory publication: March 2015)

ALTECH UEC SA (Pty) Ltd

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email:	Rajesh.Ramkawal@uec.co.za
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Mobile:	+27 (0)83 679 0516
Website:	www.altech-multimedia.com
Physical Address:	46 Siphosethu Road, Mount Edgecombe,
•	Durban, 4031
Postal Address:	PO Box 54, Mount Edgecombe, Durban, 4300
Quality Rating:	ISO TS 16949/ISO 14001/ISO 9001
B-BBEE Rating:	Level 2
Exporter:	Yes
Employees:	236

Design and manufacture of electronic and plastic injection moulded systems for the commercial and automotive industry, encompassing satellite-TV encryption STB's, Flat panel TV, vehicle monitoring and home getaway systems.

JOHNSON CONTROLS INTERIORS HOLDING South Africa

(Pty) Ltd	
Contact:	Riaan Goosen, Managing Director
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Contact:	Greg Kriedemann, Plant Manager
email:	gregory.kriedemann@yfai.com
Tel:	+27 (0)43 709 4800
Fax:	+27 (0)43 731 2667
Website:	www.yfai.com
Physical Address:	East London IDZ, Lower Chester Road,
	Sunnyridge, East London, 5201
Employees:	304
B-BBEE Rating:	Level 6

Manufacturing of headliners, door panels and instrument panels. Assembly and JIS supply of cockpits, headliners and door panels.

MANN+HUMMEL Gmbh

Contact:	Alfred Weber, CEO
email:	alfred.weber@mann-hummel.com
Contact:	Cedric Dackam, Vice President Africa
email:	cedric.dackam@mann-hummel.com
Tel:	+49 714 1980
Website:	www.mann-hummel.com
Physical Address:	Hindenburgstr 45, 71638 Ludwigsburg, Germany
Quality Rating:	ISO 9001/TS 16949/ ISO 14001
Employees	15000

The Group's product portfolio includes air filter systems, intake manifold systems, liquid filter systems, cabin filters and sound-design components called symposer, as well as filter elements for motor vehicle maintenance. For general engineering, process engineering and industrial applications, the product range includes industrial filters, membrane filters for water filtration and filter systems.

SODECIA South Africa (Pty) Ltd

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Contact:	Miguel Jorge, Director
email:	miguel.jorge@sodecia.com
Tel:	+27 (0)12 762 3002
Website:	www.sodecia.com
Physical Address:	Automotive Incubation Center, Ford Motor Co.,
-	Gate 1 - Sodecia Site, Simon Vermooten Road,
	Silverton, Pretoria
Postal Address:	PostNet Suite # 148, Private Bag X37,
	Lynnwood Ridge, Pretoria, 0040
Employees:	11
B-BBEE Rating:	Level 6

Body in White, chassis, powertrain products e.g. cross car beams, security systems, body systems and welded assemblies.

November, 2015



WEIDPLAS Sout	th Africa (Pty) Ltd 🛛 🔪 🖌	
Contact:	David Krumbock, General Manager	
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Postal Address:	PO Box 307, Riebeek Kasteel, 7307	
Employees:	4	
Quality Rating:	ISO TS 16949	

Weidplas is a leading global producer of highly engineered and technically complex plastic components, including precision auto-motive components and modules, advanced lighting applications and mechatronic and decorative solutions based on advanced plastic manufacturing technology. Complete in-house engineering capabilities include part and tooling design, prototyping, mold making, material selection, parts production, quality control and testing to packaging and supply chain management and supply chain management.

SUBSTANTIAL POWER SAVINGS STILL OUT THERE

utomotive suppliers can still extract significant further energy efficiencies.

That is the view of the AIDC Eastern Cape which has been successful in reducing energy consumption at the plants of participants in its Cleaner Production Programme by over 10% on average.

While South Africa's power supply has stabilised, (Eskom has ruled out load shedding for the remainder of the year) utilities remain the largest input cost for many manufacturers.

"While low hanging fruits may have been clipped we believe substantial further savings are available as companies analyse and more deeply assess the production system," says AIDC EC Supplier Development Manager, Hoosain Mahomed.

"Replacing bulbs does not constitute an energy efficiency or cleaner production programme, but an in depth view of the manufacturing process, its machines and controllers, usually unearths substantial additional savings."

Any reduction in energy bill is highly significant given the ratio of power costs as a percentage of the total manufacturing input.

"Whether you pay R50 000 or R50m a year on power, investment into reducing that produces handsome returns - considering that these will hold for a lifetime of production, with the correct controls," Mahomed savs

The AIDC EC's Cleaner Production Programme is successful partly as a result of the appointment of at least one engineer, assigned to work with employees on the shop floor at participating companies about three full days a week.

While cost savings are paramount the secondary objective would be to formalise the energy saving initiatives, projects or systems that the company has implemented, through the implementation of an Energy Management System (EnMS) [Internal standards] or ISO 50001 [External standards]

Lean Manufacturing (WCM) and TPM are additional skill sets offered by AIDC EC To support Supplier Competitiveness - 6 Sigma for those suppliers at the top of its manufacturing methodologies.

For more information contact Hoosain Mahomed on 041 3932100 or 082 578 5263

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ENHANCED RECOGNITION FOR BLACK OWNED BUSINESS

he BBBEE Codes of Good practice was issued in October 2013 and one of the major changes that the Department of Trade and Industry made, was to ensure that compliance for small and medium sized Black owned businesses was simplified with no cost implications.

This means that if an enterprise's annual turnover is less than R50 million and has black ownership of more than 51% but less than 100%. it will be elevated to a "Level 2 contributor" with a BBBEE procurement recognition of 125%. If the enterprise is 100% Black owned, with an annual turnover of less than R50 million, it will qualify as a "Level 1 contributor" with a BBBEE procurement recognition of 135%.

The only requirement for these businesses is to obtain a sworn affidavit, signed by a commissioner of oath, or a certificate issued by CIPC, on an annual basis, confirming the following:

- Annual total revenue is less than R50 million
- The level of Black ownership of the entity
- **Empowering Supplier Status**

Any enterprise with an annual turnover of less than R10 million qualifies as an Exempt Micro Enterprise (EME) and automatically qualifies as a Level 4 contributor, having a BBBEE procurement recognition of 100%. This applies to all white owned or less than 50% black owned businesses. They are also only required to obtain a sworn affidavit. A copy of the affidavits can be found on www.sabtbee.co.za under "Downloads" tab.

It must be noted that any misrepresentation in terms of the sworn affidavit constitutes a criminal offence as set out in the BBBEE Act. Despite these requirements, an EME is allowed to be measured in terms of the Qualifying Small enterprise (QSE) scorecard, should they wish to maximise their points and move to a higher BBBEE level.

Despite the PPPFA (Procurement Act) stating that all entities who wish to undertake any economic activity with any Organ of State, need to supply a BBBEE certificate issued by an IRBA or SANAS accredited agency, National Treasury has issued a statement to all Provincial and National Supply Chain departments, which states:

"In a meeting between the National Treasury and representatives from the Auditor General, it was agreed that to address the incompatibility between the Preferential Procurement regulations and the amended BBBEE codes and as an interim measure while the Preferential Procurement regulations are being revised, a circular be issued that will provide clarity to Accounting officers and Accounting Authorities on the acceptance of sworn affidavits.

In light of the aforementioned, organs of state to which this circular applies, should accept sworn affidavits in the circumstances prescribed in the amended BBBEE codes".

For more information or assistance on BBBEE please contact SAB&T BEE Services, as we are an IRBA approved Registered Auditor, a full member of ABP (Association of BEE Professionals) as well as an associate member of NAACAM. SAB&T BEE Services can offer our clients solutions to their BBBEE needs, which include:

• BEE Verifications/Certificates • Gap Analysis (Old vs Revised Codes) • Strategy Planning • BEE Training • Consulting

We service all 9 provinces within South Africa and may be contacted on 0860 233 669 or via email: marketing@sabtbee.co.za

Plant closing dates for 2015 and resumption dates for 2016 for major Original Equipment Manufacturers as follows:				
COMPANY	2015 CLOSE	2016 RESUME		
BMW SA (Pty) Ltd	Fri 4th December	Mon 11th January		
Ford Motor Company of SA (Pty) Ltd	Fri 11th December	Mon 4th January		
General Motors SA (Pty) Ltd	Tue 15th December	Mon 11th January		
Mercedes-Benz SA Ltd	Fri 18th December	Mon 11th January		
Nissan SA (Pty) Ltd	Fri 11th December	Thu 7th January		
Toyota SA Motors (Pty) Ltd	Tue 15th December	Tue 5th January		
Volkswagen Group SA (Pty) Ltd	Fri 11th December	Mon 4th January		

Addition to the digital (website) version of the NAACAM newsletter

Additional articles include:

- Metair enters the UK battery market
- Statistical Information: Vehicle retail and export sales (including October 2015) SEZ 2015/16 Performance Analysis Bulletin IPAP sectors Latest developments regarding the Carbon Tax

Visit www.naacam.co.za to view or download

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PRESS RELEASE

METAIR ENTERS UK BATTERY MARKET THROUGH DISTRIBUTOR ACQUISITION

- Provides UK foothold and distribution opportunities in the region
- Strengthens relationship with key OEMs
- Supports international strategy
- Unlocks synergies with operations in Romania and Turkey

Tuesday, 24 November 2015 – Metair Investments Limited ("Metair"), a leading international manufacturer and distributor of automotive products to Original Equipment Manufacturers (OEM), Replacement and Aftermarket segments, today announced the acquisition of United Kingdom (UK) based Dynamic Batteries Services Limited ("Dynamic") for R31 million in cash. Dynamic is a distributor of lead acid and specialist batteries with an approximate. 4% market share in the UK.

Sjoerd Douwenga, Metair's Financial Director commented: "The acquisition of Dynamic gives us an entry into the UK market and fits our strategy to nurture the Original Equipment business, where barriers to entry are high, and assists us to expand Metair's Original Equipment Manufacturer customer base internationally."

The acquisition is aligned with Metair's globalisation strategy as it will facilitate the supply of Metair batteries into the UK market and will support distribution services to major Original Equipment (OE) customers. It will also provide Metair with a base to take advantage of distribution opportunities across the region.

"We are confident that Dynamic's current volumes of around 200,000 units per year can be increased to 500,000 over time, through closer relationships with Original Equipment customers and the introduction of additional products supplied through our Turkish and Romanian manufacturing operations," added Douwenga.

Dynamic specialises in direct sales and owns three distribution centres spread across England in Skelmersdale, Durham and Trowbridge. The acquisition will be earnings enhancing and enable Metair to improve capacity utilisation at its manufacturing operations in Turkey (Mutlu Akü) and Romania (Rombat).

"This strategic acquisition supports our strategy and vision to secure and grow our aftermarket product range in existing and new markets and to focus on the transfer of battery technologies to facilitate AGM and EFB growth. We will continue to do this by pursuing acquisitions of complementary businesses to leverage off our technologies, efficiencies and product ranges." Douwenga concluded.

Dynamic was established in the UK in 1993 by Altron Group Limited's subsidiary Powertech Battery Group (Pty) Ltd to distribute batteries in the UK and Europe.

ENDS

Enquiries:

Metair:	011 646 3011
Sjoerd Douwenga, Financial Director	
Instinctif Partners:	011 447 3030
Frederic Cornet	083 307 8286
Louise Fortuin	071 605 4294

Note to editors:

Metair Investments Limited (Metair) is a publicly owned company listed on the Johannesburg Securities Exchange. Headquartered in Johannesburg, it encompasses a portfolio of companies manufacturing and distributing products predominantly for the automotive industry.

Metair started life more than 30 years ago as a supplier to Toyota SA, then a sister company. Today, the group produces and supplies components to all of the major Original Equipment Manufacturers (OEMs) in South Africa, as well as Renault Dacia in Europe through its Romanian subsidiary, Rombat.

The group also manufactures and distributes spare parts for use in the motor vehicle aftermarket, and non-automotive products for various other sectors of industry.

In 2012 Metair acquired a majority interest in Rombat, a battery manufacturer in Romania. In 2013 it added a majority stake in Mutlu Akü, Turkey's largest battery manufacturer and distributor. Rombat and Mutlu Akü sell products to aftermarket customers in Romania, Turkey, Europe and the Middle East, as well as to OEMs in Romania, Turkey and Russia.

Segment	Activity	Key Markets
Original equipment (OE)	Manufactures and distributes components used in the assembly of new vehicles.	South Africa, Romania, Slovakia, Russia, Turkey
Aftermarket	Manufactures and distributes aftermarket automotive products, such as batteries, brake pads and spark plugs.	Africa, Europe, Turkey, Middle East, Russia
Non-automotive	Manufactures and distributes products mostly related to telecoms, utility, mining, retail and materials/products handling sectors.	Sub-Saharan Africa, Turkey
Property	The group's properties are owned and managed by the respective operating subsidiaries.	South Africa, Turkey, Romania

For more information on Metair and the Group's subsidiaries please visit the website at: <u>www.metair.co.za</u>





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SIX SIGMA PROGRAMME 2016 COURSES NOW CONFIRMED!

The Six Sigma programme follows the DMAIC (Define, Measure, Analyse, Improve, and Control) approach as part of the training and implementation support structure which will assist in the improvement of quality, cost, safety and delivery performance of the organisation and to align employee knowledge and skills with the business level strategy to run a Lean Six Sigma enterprise.

Six Sigma Training Course February 2016

Six Sigma Yellow Belt

Six Sigma Green Belt

Cost:	R 2 700,00	Cost:	R 12 670,00
Duration	:9 - 10 February 2016	Duration	:22 - 26 February 2016,
	2 days		5 days
Venue:	AIDC Office,	Venue:	AIDC Office,
	Brookes Hill Pavilion,		Brookes Hill Pavilion,
	Humewood		Humewood
Times:	08:00 - 16:30	Times:	08:00 - 16:30

AIDC's programmes boast over ten years of success amongst participating companies nationally and is subsidised through local government. The AIDC Six Sigma programme is accredited through the services SETA.

The costs include stationery, modules, and catering and VAT. For more info contact Thandile Samela Tel: 041 393 2100 Email: tsamela@aidcec.co.za 1st Floor, Broll House 73 2nd Avenue, Newton Park, Port Elizabeth www.aidcec.co.za

RETAIL PASSENGER CAR SALES 2012 - October 2015 (incl.)

COMMERCIAL VEHICLE SALES 2012 - October 2015 (incl.)

	2011	2012	2013	2014	to 10/2015	
Abarth	5	107	85	67	41	В
Alfa Romeo	812	944	447	297	128	C
Audi	14,531	16,743	19,336	18,375	12,860	С
BMW	23,560	24,744	24,793	24,521	18,850	C
Cadillac	2	0	0	0	0	С
Chana	348	58	0	0	0	D
Chery	0	0	1,996	1,259	623	D
Chevrolet	29,754	31,175	23,328	21,615	12,492	E
Chrysler	590	584	621	389	232	F
Citroen	1,941	1,945	1,583	802	713	F
Daihatsu	0	0	947	456	47	Ē
Datsun	0	0	0	1,573	4,815	
Dodge	2,086	1,765	1,304	832	739	
FAW	0	0	169	604	598	
Ferrari	0	0	125	82	79	G
Fiat	2,678	3,198	3,491	2,120	963	H
Ford	26,679	25,891	37,724	40,862	35,633	H
GWM	0	0	1,881	993	1,018	Ir
Honda	7,828	9,093	12,904	10,169	9,227	ls
Hummer	5	8	0	4	0	١١
Hyundai	0	0	45,104	40,863	30,744	J
Infiniti	0	127	194	371	479	J
Jaguar	520	909	1.086	954	618	K
Jeep	4,383	7,237	7,343	7,420	5,187	L
Kia	0	0	20,320	17,341	12,729	N
Land Rover	5,133	6,686	6,917	5,828	4,401	N
Landwind	0	0	0	0	9	N
Lexus	1,178	1,371	986	1,344	818	N
Mahindra	451	1,447	1,219	1,028	757	N
Maserati	72	65	51	26	47	N
Mazda	4,790	4,827	3,173	2,563	5,993	C
Mercedes	23,509	22,420	23,520	28,993	21,985	
Mini	2,509	2,794	2,878	2,126	1,757	
Mitsubishi	1,734	2,619	3,030	3,665	2,640	
Nissan	17,065	20,627	19,436	15,781	8,325	
Opel	4,365	2,704	2,603	3,598	5,264	R
Peugeot	2,813	3,393	3,596	2,166	1,061	R
Porsche	1,131	1,435	2,436	1,145	1,241	5
Proton	0	0	266	86	11	S
Renault	10,347	10,216	12,107	18,566	15,694	S
Smart	124	133	95	60	62	T
Ssangyong	0	80	215	105	89	T
Subaru	1,250	861	1,153	1,263	991	T
Suzuki	5,462	4,724	4,865	6,402	5,153	U
Tata	1,909	2,795	3,921	887	559	V
Toyota	52,424	65,645	66,805	66,653	55,485	V
Volkswagen	75,495	82,363	83.628	82,093	63,349	V
Volvo	3,240	2,984	2.876	2,863	2,258	V
Zotye	0	0	4	0	3	Т
Total	330,723	364,717	450,561	439,210	346,767	

	2011	2012	2013	2014	to 10/2015
Babcock (DAF)	132	0	0	0	0
Chana	363	95	0	0	0
Changan	57	96	0	0	114
Chevrolet	17,996	19,324	18,330	16,726	14,407
Citroen	86	193	210	98	61
DAF	0	86	115	247	134
Daihatsu	0	0	1,202	991	44
FAW	0	0	355	613	695
Fiat	598	593	852	605	342
Ford	14,764	16,545	20,925	30,026	29,660
Foton	0	0	686	763	98
Freightliner	1,312	1,272	1,417	1,243	941
Fuso	986	965	1,233	1,176	882
GWM	0	0	4,979	1,825	1,225
Hino	3,103	3,295	3,461	3,423	2,974
Hyundai	0	0	4,571	4,270	3,359
International	849	576	207	0	0
Isuzu	15,988	16,515	18,328	19,541	16,500
lveco	913	1,079	1,327	1,444	904
Jinbei	0	0	0	611	344
JMC	0	0	831	700	676
Kia	0	0	2,360	2,961	2,874
Land Rover	628	776	582	440	379
Mahindra	1,321	2,294	2,501	2,481	1,873
MAN	1,866	1,719	1,768	1,880	1,319
Mazda	3,772	1,961	2,528	2,376	1,178
Mercedes	5,275	5,479	5,673	5,486	4,258
Mitsubishi	1,558	958	1,456	978	528
Nissan	22,827	29,173	27,521	28,642	26,940
Opel	307	231	154	140	9
Peugeot	413	413	415	185	172
Powerland	0	0	0	0	16
Powerstar	181	484	522	474	410
Renault	145	644	518	518	149
Renault Trucks	298	0	0	0	0
Scania	1,293	1,332	1,626	2,031	1,993
Ssangyong	0	40	52	30	52
Suzuki	0	0	0	67	21
Tata Cars	0	0	0	0	1,182
Tata Trucks	2,573	3,118	4,043	3,053	1,009
Toyota	52,709	50,965	55,497	56,114	42,810
UD Trucks	3,234	2,992	3,079	3,365	2,217
VDL Bus/Coach	24	33	19	7	6
Volkswagen	9,887	9,710	9,067	7,524	6,141
Volvo Bus	0	0	0	0	55
Volvo Trucks	1,525	1,615	1,774	2,120	1,610
Total	166,983	174,571	200,184	205,174	170,561

Please note: Figures for Mercedes-Benz in all tables are estimates Source: NAAMSA/Lightstone Auto

PASSENGER CAR EXPORTS: 2012 - October 2015 (incl.)

L.						
	2012	2013	2014	Into Africa	Out of Africa	to 10/ 2015
AMH	0	0	58	0	1	1
Alfa Romeo	0	5	0	0	0	0
BMW	33,297	54,197	60,234	0	55,914	55,914
Chevrolet	0	640	0	0	0	0
Chrysler	471	0	408	285	0	285
Dodge	0	6	0	0	0	0
Fiat	58	16	9	2	0	2
GMSA/Isuzu	581	0	559	264	0	264
GWMSA	0	0	0	8	0	8
Honda	348	457	355	364	0	364
Hyundai	0	8	0	0	0	0
Jeep	0	375	0	0	0	0
Mahindra	3	0	0	0	0	0
Maserati	1	0	0	0	0	0
Mercedes-Benz	49,825	36,229	32,767	368	77,830	78,198
Mitsubishi	0	74	123	103	0	103
Nissan	131	91	145	76	0	76
Porsche	3	4	8	10	0	10
Renault	0	0	4	0	0	0
Subaru	2	1	0	0	0	0
Suzuki	0	0	0	4	0	4
Toyota	14,396	9,328	7,267	2,368	2,120	4,488
Volkswagen	54,058	52,082	54,619	63	58,343	58,406
Volvo Cars	21	11	14	17	0	17
TOTAL	153,196	153,524	156,570	3,932	194,208	198,140

COMMERCIAL VEHICLE EXPORTS: 2012 - October 2015 (incl.)

	2012	2013	2014	Into Africa	Out of Africa	to 10/ 2015
AAD	0	0	0	5	0	5
AMH	0	0	9	2	0	2
Babcock	0	0	3	39	0	39
Chevrolet	0	120	0	0	0	0
DAF	0	7	0	0	0	0
FAW	0	5	22	91	0	91
Fiat	19	19	22	23	0	23
Ford	31,925	33,904	45,263	6,706	28,310	35,016
GMSA/Isuzu Trucks	1,622	0	1,509	2,659	7	2,666
GWM	0	0	0	41	0	41
Hyundai	0	1	0	0	0	0
International	0	6	0	0	0	0
Isuzu	0	1,432	0	0	0	0
lveco	72	129	245	81	0	81
JMC	0	0	0	2	0	2
Mahindra	16	0	0	0	0	0
MAN	229	329	426	200	0	200
Mazda	0	596	0	0	0	0
Mercedes-Benz	1	0	0	0	0	0
Mitsubishi	0	140	262	204	0	204
NC2 Trucks	2	0	0	0	0	0
Nissan	16,355	14,745	14,400	8,223	10	8,233
Powerstar	61	71	37	22	0	22
Renault	24	35	3	0	0	0
RenaultTrucks	15	0	9	0	0	0
Scania	230	281	318	141	0	141
Suzuki	0	0	0	1	0	1
Tata	28	44	28	4	0	4
Toyota	73,726	70,781	57,522	14,549	28,651	43,200
UDTrucks	83	162	182	0	0	0
VDL	1	0	1	0	0	0
Volkswagen	0	16	0	0	0	0
Volvo Group	58	31	39	134	0	134
Total	124,467	122,854	120,300	33,127	56,978	90,105

Please note: Figures for Mercedes-Benz in all tables are estimates Source: NAAMSA/Lightstone Auto





2015/16 SEZ Performance Analysis Bulletin

REPORT No. 2 July 2015

SPECIAL ECONOMIC ZONE (SEZ) KEY HIGHLIGHTS

There are eight proposed SEZs. Maluti-a-Phofung has been approved for designation as an Industrial Development Zone (IDZ) and Cabinet issued an operator permit to the Free State Development Corporation on 24 June 2015.

Maluti-a-Phofung will create an opportunity for the establishment of various downstream and upstream automotive, agriculture and food-processing (valueadded) initiatives.



SEZ REGULATIONS

SEZ regulations have been gazetted and are currently at an advanced stage of approval for implementation.

INDUSTRIAL DEVELOPMENT ZONE (IDZ) PERFORMANCE OVERVIEW

- 2002 2015, South designated IDZs, Between and Africa six namelv Coega, East-London (ELIDZ). Richards Bav (RBIDZ). OR Tambo (ORTIDZ), Saldanha Bay (SBIDZ) and Dube Trade Port (DTPIDZ).
- To date, the dti has transferred R7.2 billion to the designated IDZs for
- Fifty-nine investors, with an estimated private investment value of R5.2 billion, are on site in the operational zones.
- The total private investment value increased from R4.8 billion in 2013/14 to R5.2 billion in 2014/15.
- In 2014/15, 50 investors (including eight new expansions in Coega) with an investment value of more than R15.9 billion have signed agreements to locate in the designated zones and are expected to create more than 4 000 direct jobs.
- This means the zones attracted a total estimated investment value of more than R21.1 billion during the period 2005/06 to 2014/15.
- The IDZ policy review in 2009/10 translated into the quality of investors attracted into the zones being more in line with the objectives of the programme.
- These positive improvements can be attributed to the improved governance internal control mechanisms, including the pro-activeness of the IDZ/SEZ adjudication committee.
- To date, about 73 000 jobs have been created in the IDZs.
- About 8 500 (11,6%) were direct jobs and 64 500 (88,3%) construction and indirect jobs (indirect jobs are based on 2013/14 estimations).
- Ninety-one pipeline investors are at different stages of negotiation with the designated zones; 68% are at advanced-stage negotiation.
- The processing of the implementation of the SEZ legislation is at an advanced stage and cluster investors with an investment value of more than R100 billion have already made some commitments (non-binding) to locate in the proposed SEZs.

IDZ INVESTMENT ATTRACTION: GAINING MOMENTUM

Figure 1 shows the cumulative number of operational investors in Coega and ELIDZ in 2014/15. In 2005/06, only three investors located in Coega and one in ELIDZ. Between 2005/06 and 2009/10, the number of operational investors increased to 25, with 14 in Coega and 11 in ELIDZ. The number of attracted investors increased 100% in Coega, from 14 in 2009/10 to 28 in 2014/15. At the time of writing this report, three additional investors were finalising the operationalisation of their plants at Coega. This will increase the number to 31 in the next quarter and boost private sector investment to R6.5 billion. Similarly, in ELIDZ the number of operational investors increased by 154%, from 11 to 28 over the same period.

While the rate of investor attraction into our zones remains low when compared to the rate of investor attraction to zones in other developing countries such as China, South Korea and Malaysia, it is worth noting that since 2010/11, the rate of investor attraction in our designated zones has gained momentum.

Similarly, the investment value of investors located in the designated zones increased steadily from less than R500 million in 2005/06 to more than R4 billion in 2014/15. Coega has attracted investors with an investment value of more than R2.6 billion, while ELIDZ attracted investors with an investment value of more than R1.6 billion during the period under review (figure 2). However, current levels of private sector capital investment are far below public sector capital investment in the zones (figure 11).

Figure 3 shows the cumulative number of direct jobs created by firms located in Coega and ELIDZ between 2005/06 and 2014/15. In 2006/07 only 500 direct jobs were created in ELIDZ and less than 1 000 at Coega. In 2014/15, however, about 8 000 jobs were created; 2 554 at ELIDZ and 5 515 at Coega. There is a clear upward trend in employment creation in the zones.







SECURED INVESTORS

Figure 4 shows the number of secured investors that are not yet operational in the zones. As at April 2014/15, 32 investors have made commitments to locate in the zones, with an estimated investment value of more than R14.7 billion (figure 5).

Coega has attracted 22 investors with an investment value of more than R8.1 billion in various sectors ranging from energy, chemicals and steel to agriculture and food, pyrolysis and cement plants. This excludes eight new expansions.

Five investors with an estimated investment value of about R141 million have made commitments to locate in ELIDZ in sectors such as renewable energy, aquaculture, and logistics and automotive.

Six investors with an estimated investment value of R7.8 billion have made commitments to locate in RBIDZ in sectors ranging from refinery, aluminium and titanium to cement and pulp manufacturing. Nine investors with an estimated investment value of R540 million have been approved by the DTP board to locate in the IDZ-designated area.

Figure 6 shows investors in the pipeline for the four identified designated zones. Pipeline investors are those who are targeted and at different stages of negotiation, but have not yet made a commitment to locate in the zones. There are 91 investors in the pipeline for the identified designated zones. While not all have disclosed the value of their investment intentions, the estimated pipeline investment value was R68.8 billion in 2014/15.







ELIDZ

Figure 7 shows the sectoral breakdown of investors located in ELIDZ as at 2014/15. Seventeen automotive companies are onsite in ELIDZ. This represents more than 60% of the sectoral breakdown. The 430ha ELIDZ has also successfully developed other clusters beyond the automotive sector. The automotive cluster was initially the anchor cluster, but the zone has subsequently built on investment in the agroprocessing, renewable energy, aquaculture and ICT clusters.

Of the 28 investors located at ELIDZ, 32% are foreign direct investments (FDIs), 47% domestic direct investments (DDIs) and 21% joint ventures (JVs) between FDIs and DDIs (Figure 8).

COEGA

Figure 9 shows the sectoral breakdown of investors located in Coega as at 2014/15. There are currently 11 automotive companies based in the Coega IDZ. This represents more than 39% of the sectoral breakdown. The 11,500ha Coega IDZ is home to one of the most diverse auto clusters in the world. It includes original equipment manufacturers (OEM) General Motors and Volkswagen, as well as more than 150 suppliers, including Goodyear, Bridgestone, Corning, Visteon, Hella, Faurecia, LUK and Johnson Controls.Coega IDZ is focusing on the following investment sectors:

- Automotive
- Agro-processing
- Chemicals
- General manufacturing;
- Business process outsourcing
- Renewable energy

Of the 28 investors located at Coega, 50% are FDIs, 39% DDIs and 11% JVs between FDIs and DDIs (figure 10).







Domestic and foreign direct investments are both critical in building a competitive economy. On the one hand, domestic direct investments tend to create deeper linkages with the local economy, while on the other hand, foreign direct investments are able to finance projects with large capital requirements and bring crucial skills and technology transfers.

GROSS CAPITAL FORMATIONS

Private sector investment is needed to sustain overall economic growth, capacity building and employment creation. Current levels of private sector capital investment are far below public sector capital investment in the zones (figure 11).

However, Gross Capital Formations (GCFs) in the zones are steadily growing and making a meaningful contribution to the economy. The ELIDZ and Coega GCF as a percentage share of Eastern Cape Fixed Capital Formation (FCF) increased from 1,3% in 2005 to 28,3% in 2013. Similarly, the GCF as a percentage share of Gross Value Add (GVA) of the Eastern Cape has increased steadily from 0,2% in 2005 to 3,3% in 2013 (figure 12).

Total exports in the Eastern Cape zones remain a small proportion of the province's export value (0,4% in 2013). However, investors in the pipeline are more export-oriented, which is likely to increase exports from the zones in the near future. Increasing exports is key to tackling the growing trade deficit in the country.







EFFICIENCY AND EFFECTIVENESS OF THE IDZ PROGRAMME

- The effectiveness of the IDZ programme hinges on the number of investments attracted to the zones and the value of the jobs and exports that they contribute to the South African economy.
- Excluding the indirect jobs resulting from construction activities and multiplier effects, the average cost to Government of every direct job that has been created to date is R1.2 million (ranging from R1.93 million in RBIDZ to R1.2 million in ELIDZ and R1.12 million in Coega).

Government cost per direct job

Private investment per direct job

- The average cost per direct job from private sector investment is R370 000 (ranging from R2 million in RBIDZ to R580 000 in ELIDZ and R490 000 in Coega).
- At this stage, Government investment into the IDZs has not been matched by a corresponding inflow of private investment.
- However, this picture will ultimately change, given the quality of pipeline investors.

R 1.12

R 0.49

R 10 081

R 4 971

8500

65 001

73 501

R 1.19

R 0 37

INDICATOR	RBIDZ	ELIDZ	COEGA
		R'mi	llion
Total government investment	R 773	R 3 117	R 6 191
Private investment	R 800	R 1 477	R 2 694
Direct employment	400	2554	5546
Construction & indirect employment	3961	23975	37 065
Total employment	4361	26 529	42 611
Ratios			

R 1.93

R 2.00

R 1.22

R 0.58

Table 1: Government¹ vs private cost per job created in the zone

¹ Total government investment includes both investment made by **the dti** and provincial government to the designated zones as at March 2014/15

GEOGRAPHICAL LOCATION OF IDZs



LIST OF DESIGNATED IDZs AND SECTORAL FOCUS

Province	IDZ	Designation date	Focus
Eastern Cape	Coega	2001	Automotive; Agro-processing; Chemicals; General Manufacturing; Business Process Outsourcing; and Energy.
	East London	2002	Automotive, renewable energy, ICT, and Agro-processing sectors
KwaZulu-Natal	Richards Bay	2002	Aluminum, Titanium, dry dock(ship & repair), and furniture
	Dube Trade Port	2013	Value niche aquaculture and horticulture, automotive, electronics and fashion garments
Gauteng	OR Tambo	2002	Specialized jewelry manufacturing
Western Cape	Saldahna Bay	2014	Oil & Gas services complex

LIST OF PROPOSED SEZs AND SECTORAL FOCUS

Province	Region	Focus
Eastern Cape	Mthata	Agro-processing
Free State	Harrismith	Automotive logistics, agro- processing, pharmaceutical
Gauteng	JHB	ICT and electronics
KZN (designated)	DTP	Agro-processing and electronics
Limpopo	Tubaste	PGMs
	Musina	Logistics, petrochemicals and trade hub
Mpumalanga	Nkomazi	General logistics
Northern Cape	Upington	Solar corridor
North West	Bojanala	PGMs
Western Cape	Antlantis	Renewable energy

LIST OF PIPELINE INVESTORS FOR THE PROPOSED SEZS

Area	Project	Sector	Value
Musina - limpopo	Metallurgical Complex(11 projects)	Metallurgical (Mining)	R36billion
Middleburg(Mpumalanga) or Richards Bay(KZN)	Steel Plant	Steel	USD 5billion
Ekurhuleni - GP	Fuel Cells	Energy	USD100 million
Upngton - NC	Aircraft Maintenance Repair & Overhaul facility	Aircraft Maintenance & Repair	R800 million
Maluti – a – Phofung - FS	Construction of rail- based container, Auto Value Chain, Medical equipment, Manuf.of a new type jet aircraft, agro-processing, Gas electricity generation, logistics and Oil blending and related sectors	General Manufacturing	R8billion



MEDIA STATEMENT

Publication of the Draft Carbon Tax Bill for public comment

The National Treasury today publishes the Draft Carbon Tax Bill for public comment, following on the announcement made by the Minister of Finance in the 2015 Budget.

Cabinet approved the publication of the Bill and noted that the carbon tax forms an integral part of the system for implementing government policy on climate change as outlined in the 2011 National Climate Change Response Policy (NCCRP) and the National Development Plan. South Africa has committed to reduce greenhouse gas (GHG) emissions below business as usual by 34 per cent by 2020 and 42 per cent by 2025, as well as adaptation measures, as outlined in South Africa's Intended Nationally Determined Contributions (INDCs) recently submitted to the United Nations for the upcoming Conference of Parties (COP) 21 of the United Nations Framework Convention on Climate Change (UNFCCC) in Paris.

The carbon tax seeks to price carbon by obliging the polluter to internalise the external costs of emitting carbon, and contribute towards addressing the harm caused by such pollution. The Draft Carbon Tax Bill marks the next step in the consultation process conducted over the past 5 years, starting with the 2010 discussion paper on carbon tax, the 2013 Carbon Tax Policy Paper and the 2014 Carbon Offsets Paper. It takes into account comments received in writing, and from meetings and workshops, from a wide range of stakeholders including business, NGOs, academia, civil society and labour.

The publication of the Draft Carbon Tax Bill provides an opportunity for further comments on the design and technical details of the carbon tax policy and administration. It should be noted that the final tax rate, exemptions, and the actual date of implementation will be determined by the Minister of Finance through the annual Budget process.

The carbon tax will be implemented together with complementary measures like a reduction in the electricity levy and other measures to recycle revenue. Stakeholders are invited to provide comments on the environmental and socio-economic impact of the carbon tax (taking into account revenue recycling measures), as well as the design and legal wording of the Bill. A revised Bill incorporating comments received will thereafter be submitted to Cabinet for approval for tabling in Parliament.

Impact of the carbon tax on the economy

The impact of any tax on the economy can only be assessed when taking into account both the direct impact of the tax, as well as the way the resulting revenue is spent. Hence, to assess the impact of the tax, the revenue recycling measures must be taken into account.

The carbon tax will assist in reducing GHG emissions and ensure that South Africa is ready and better prepared to deal with future climate risks and challenges, and also be in a position to take advantage of new investment opportunities.

The carbon tax aims to change the behaviour of firms, incentivising them to shift towards cleaner technology when replacing/renewing machinery, technology or processes. To ensure that South Africa transitions to a low carbon, climate resilient economy in a cost effective and economically efficient manner, it is important that the objectives of inclusive economic growth, poverty alleviation, job creation and the lowering of our GHG emissions are appropriately balanced and the trade-offs effectively managed. Hence, given the developmental challenges that South Africa has to deal with and the internationally accepted common but differentiated responsibilities and respective capabilities principle (CBDR-RC) that requires more developed countries to make a greater effort to reduce global GHG emissions, South Africa's carbon tax will be gradually phased-in.

Various economic modelling to estimate the impact of a carbon tax were previously undertaken. One of the modelling¹ exercises initiated by the National Treasury indicates that a carbon tax with broad sector coverage implemented gradually and complemented by effective and efficient revenue recycling will contribute towards significant GHG emission reductions, and have only a marginal negative impact on economic growth over the short-term. Over medium to long term, the carbon tax will support the transition to a more sustainable low carbon economy and green jobs. Additional modelling is being undertaken by various stakeholders.

The tax has been designed to ensure that its overall impact (when taking into account revenue recycling measures) will, in the initial phase, be revenue neutral, and also neutral on the price of electricity. Hence, taking into account the current state of the mining and other distressed sectors, the combined effect of the rates/exemptions in the carbon tax and the reduction in electricity levy will be designed to ensure that such sectors are not adversely affected when the tax is implemented. The tax and revenue recycling measures are also designed to be revenue neutral from a macroeconomic perspective, but will not necessarily be neutral for (scope one) companies with significant emissions.

Carbon tax design

The revised carbon tax design as contained in the Draft Carbon Tax Bill includes the following features:

- A basic 60 per cent tax-free threshold during the first phase of the carbon tax, from implementation date up to 2020;
- An additional 10 per cent per cent tax-free allowance for process emissions;
- Additional tax-free allowance for trade exposed sectors of up to 10 per cent;

¹ Theresa Alton, et al, The Economic Implication of Introducing Carbon Taxes in South Africa, UNU-WIDER, 2012

- Recognition for early actions and /or efforts to reduce emissions that beat the industry average in the form of a tax-free allowance of up to 5 per cent;
- A carbon offsets tax-free allowance of 5 to 10 per cent;
- To recognize to role of carbon budgets, an additional 5 per cent tax free allowance for companies participating in phase 1 (up to 2020) of the carbon budgeting system;
- The combined effect of all of the above tax-free thresholds will be capped at 95 per cent; and
- An initial marginal carbon tax rate of R120 per ton CO₂-e will apply. However taking into account all of the above tax-free thresholds, the effective carbon tax rate will vary between R6 and R48 per ton CO₂-e.

These tax-free exemptions will range between 60 and 95 per cent of total emissions. This implies that the carbon tax will be imposed on only 5 to 40 per cent of actual emissions during this period.

The Department of Environmental Affairs (DEA) and the National Treasury have embarked on a process to ensure that the carbon tax is aligned with the proposed carbon budget system. During the first phase of the carbon tax (up to 2020), companies participating in the carbon budgeting process will qualify for an additional tax-free allowance of 5 per cent.

The tax-free percentage thresholds will remain fixed during the first phase, until 2020. The percentage tax-free thresholds might be reduced thereafter or may be replaced with absolute emission thresholds. Both the tax-free percentage thresholds and their subsequent replacement with absolute emission thresholds will be aligned with the proposed carbon budgets.

The carbon tax in the case of GHG emissions from the use of petrol and diesel will be added to the current fuel tax regime. Fuels used by the international aviation and international maritime sectors will initially be excluded from the carbon tax as these are covered by international agreements. Greenhouse Gas resulting from the use of such fuels will be priced in terms of the international agreements that are currently being developed. However, domestic aviation will be subject to the domestic carbon-related fuel taxation.

The National Treasury is in the process of finalising Regulations to give effect to the carbon offset scheme and is engaging the Department of the Energy (DoE) and the DEA on the administration aspects of the offset scheme. Draft regulations will be published for public comment in early 2016. The Regulations with respect to the emissions intensity benchmark as required by the performance based tax-free allowance will be developed over the next six months based on inputs received from the respective industry associations. Such inputs should use as reference acceptable benchmark methodologies.

Revenue recycling and Administration

The effectiveness of the carbon tax to reduce GHG emissions and the socio-economic impact of the carbon tax will be determined by the carbon tax rate, tax-free allowances and the various revenue recycling measures. These revenue recycling measures will include: (i) funding for the energy efficiency tax incentive already being implemented; (ii) a reduction in the electricity levy, (iii) additional tax relief for roof top (embedded) solar photovoltaic (PV) energy as already provided for the in 2015 tax legislation; (iv) a credit for the premium charged for renewable energy (wind, hydro and solar, as per the Integrated Resource Plan);

(iv) additional support for free basic electricity to low income households; and (v) additional allocations for public transport. Measures to encourage the shift of some freight from road to rail will also be supported.

Investments in green technologies and the growth of some sectors will benefit from this intervention especially the renewable energy sector which will be able to compete on a more level playing field in comparison to fossil fuels. A carbon tax will also have health co-benefits by helping to reduce local air pollutants.

The carbon tax will be administered by the South African Revenue Service (SARS). SARS will liaise with the DEA and be able to access the National Atmospheric Emissions Information System (NAEIS) which will contain emissions information as reported by companies. Energy use data reported to the DoE will also be incorporated into the NAEIS which will strengthen the monitoring and verification system to support the implementation of the carbon tax.

Due date for comments

The Draft Tax Bill, is published for public comments and is available on the National Treasury website: <u>www.treasury.gov.za</u>

Written comments should be submitted to Dr. Memory Machingambi, email: <u>Memory.Machingambi@treasury.gov.za</u> by the close of business on **15 December 2015.**

Issued by National Treasury Date: 2 November 2015

REPUBLIC OF SOUTH AFRICA

DRAFT EXPLANATORY MEMORANDUM

FOR

THE CARBON TAX BILL, 2015

[2 November 2015]

DRAFT EXPLANATORY MEMORANDUM FOR THE CARBON TAX BILL, 2015

BACKGROUND

Climate Change Policy in South Africa

Reducing the impacts of climate change through facilitating a viable and fair transition to a low-carbon economy is essential to ensure an environmentally sustainable economic growth path for South Africa. The carbon tax will play a role in achieving the objectives set out in the National Climate Change Response Policy of 2011 (NCCRP) and contribute towards meeting South Africa's commitments to reduce greenhouse gas (GHG) emissions.

The NCCRP provides an overarching policy framework for facilitating a just transition to a low carbon, climate resilient economy. The policy provides for the use of incentives and disincentives, including regulatory, economic and fiscal measures to provide appropriate price signals to nudge the economy towards a more sustainable growth path. The appropriate measures must be developed in line with the "<u>Polluter Pays Principle</u>"; i.e. "Those responsible for harming the environment must pay the costs of remedying pollution and environmental degradation and supporting any consequent adaptive response that may be required" (NCCRP). The development of the carbon tax policy and framework for the use of carbon offsets has been developed along the polluter pays principle.

The draft Carbon Tax Bill includes the detailed and revised carbon tax design features as per the Carbon Tax Policy Paper of 2013 and the Carbon Offsets Paper of 2014 and takes into account public comments received following extensive stakeholder consultation since 2011. The draft Carbon Tax Bill provides for the introduction of the carbon tax in a phased manner. This gradual approach takes cognizance of the developmental challenges facing South Africa and international climate policy developments. This will also help encourage investments in and the uptake of more energy efficient and low carbon technologies.

Carbon pricing options

Environmental challenges, such as climate change, air and water pollution, occur when the assimilative capacity of a particular environmental resource is exceeded. Society is affected by the resulting excessive pollution, and the polluter often does not pay for the costs of such pollution. This is defined as negative externalities and is the result of market failures with the costs of pollution not reflected in the final prices of goods and services. In order to address such market failures, governments intervene by way of regulations and / or market-based instruments (such as taxes and / or emissions trading schemes) to influence the investment, production and consumption decision-making processes of producers and consumers.

There are two approaches to price carbon directly:

- A carbon tax; and
- An emission trading scheme or cap and trade.

Many jurisdictions have implemented carbon pricing using both approaches, but covering different sectors. In some instances regulations prescribe a limit on emissions and companies are required to adhere to that limit, if not they are subject to significant penalties. Establishing such regulatory limits can be quite challenging. The costs incurred to adhere to such limits (without regard to the individual circumstances) could be seen as an indirect form of carbon pricing. In terms of market dynamics this is not always the most cost efficient way to reduce GHG emissions.

A hybrid system is also possible under which the price mechanism is utilized to complement command-and-control measures such as the envisaged alignment with the carbon budgeting approach.

For South Africa, an emissions trading system (ETS) is currently unsuitable due to the dominance of GHG emissions by only a few companies, the result of the oligopolistic

market structure of the energy industry. Under such circumstances it is not likely to create a robust market, generate credible carbon prices and it might also result in a very volatile carbon price. In addition, an ETS is relatively complex and will require significant institutional capacity building. A carbon tax is much easier to administer and provide more price certainty. The inclusion of a carbon offset mechanism within the carbon tax design will provide additional flexibility for some companies to reduce their carbon tax liabilities whilst at the same time invest in GHG emission reduction projects. It might be possible, at a later stage (next 10 to 15 years), to link up with an international emissions trading scheme.

Carbon tax design in South Africa

The design of the carbon tax is informed by the administrative feasibility and practicality to cover most GHG emissions. It also takes into account the need for a long and smooth transition to a low carbon economy in a sustainable manner. The significantly high tax-free allowances and phased-in approach will ensure that South Africa's competitiveness is not being compromised. Measures are also taken to protect vulnerable households. The carbon tax will be revenue-neutral during the first five years and all revenue will be recycled by way of reducing the current electricity levy, credit rebate for the renewable energy premium, a tax incentive for energy efficiency savings, increased allocations for free basic electricity/ alternative energy and funding for public transport and initiatives to move some freight from road to rail.

1. Tax base

The tax is based on fossil fuel inputs (coal, oil & gas) and the use of approved emission factors. Alternative procedures will be necessary in the case of process and fugitive emissions resulting from the chemical reactions of certain manufacturing processes, and coal mining.

Emission factors and / or procedures are available to quantify carbon dioxide equivalent (CO_2 -eq) emissions with a relatively high level of accuracy for different processes and sectors. The emissions reporting will be in line with mandatory

reporting requirements for GHG emissions designed by the Department of Environmental Affairs (DEA), which will approve the appropriate emission factors and procedures, in line with information published by the Intergovernmental Panel on Climate Change (IPCC).

For stationary emissions, reporting thresholds will be determined by source category as stipulated in the National Environmental Air Quality Act of 2004. Only entities with a thermal capacity of around 10MW will be subject to the tax in the first phase. This threshold is in line with the proposed DEA GHG emissions reporting regulation requirements and the Department of Energy (DoE) energy management plan reporting.

For non-stationary emissions (e.g. liquid fuel - transport), the carbon tax will be included in the fuel tax regime.

2. Tax-free allowances

Based on extensive stakeholder engagements and in order to ensure a smooth transition to a low carbon economy, a number of transitional tax-free allowances are provided which include:

- A basic tax-free allowance of 60 per cent;
- An additional tax-free allowance of 10 per cent for process emissions;
- A variable tax-free allowance for trade-exposed sectors (maximum 10 per cent);
- A maximum tax-free allowance of 5 per cent for above average performance;
- A 5 per cent tax-free allowance for companies with a Carbon Budget;
- A carbon offsetting allowance of either 5 per cent or 10 per cent;
- The total tax-free allowance during the first phase (up to 2020) can be as high as 95 per cent.

Over time, post 2020, these tax-free allowances could be phased down to strengthen the carbon price signal. In addition the percentage based tax-free allowance could be replaced with an absolute tax-free threshold which could be in line with the proposed carbon budgets.

3. Tax rate and tax liability

The proposed headline carbon tax is R120 per ton of CO_2e for emissions above the tax-free thresholds. Given the above tax-free allowances this would imply an initial effective carbon tax rate range as low as R6 to R48 per ton CO_2e .

The carbon tax liability is calculated as the tax base (total quantity of GHG emissions from combustion, fugitive and industrial processes proportionately reduced by the tax-free allowances) <u>multiplied</u> by the rate of the carbon tax.

4. Carbon tax administration (institutional arrangements)

Implementation of the carbon tax requires an accurate system for monitoring, reporting and verifying emissions (MRV). The South African Revenue Service (SARS) will be the main implementing administrative authority on tax liability assessment. In order to audit the self-reported tax liability by entities, SARS will be assisted by the DEA.

The DEA will lead the MRV process, collecting the GHG emissions data which will form the tax base hence incorporating the carbon tax within the National Atmospheric Emissions Inventory System (NAEIS – part of the South African Air Quality Information System, SAAQIS). The DEA will work closely with the DoE, as a joint implementation partner in the carbon tax MRV work. DEA will directly collect the GHG process emissions information and the DoE, which is developing the Central Energy Database, will supply energy combustion data to the NAEIS. It is envisaged that this will be implemented through the National Atmospheric Emission Reporting Regulations of the DEA and the Energy Reporting Regulations of the DoE. The DoE currently hosts the Designated National Authority (DNA) who will be responsible for administering the carbon offsets.

SECTION-BY-SECTION EXPLANATION

Preamble

Part I: Definitions and general provisions relating to imposition of carbon tax

Definitions: Section 1

"allowance" means any amount allowed to be taken into account in terms of Part II, subject to section 13, for the purposes of determining the amount of carbon tax payable;

"carbon tax" means a tax on the carbon dioxide (CO₂) equivalent of greenhouse gas emissions imposed in terms of section 2;

"carbon dioxide (CO_2) equivalent" means the concentration of carbon dioxide that would cause the same amount of radiative forcing (the difference of sunlight absorbed by the Earth and energy radiated back to space) as a given mixture of carbon dioxide and other greenhouse gases;

"**carbon offsets**" means means a measurable avoidance, reduction or sequestration of carbon dioxide (CO₂) or other greenhouse gas emissions;

"combustion" means the exothermic reaction of a fuel with oxygen;

"Commissioner" means the Commissioner for the South African Revenue Service;

"emissions" means the release of greenhouse gases or their precursors and aerosols into the atmosphere over a specified area and period of time;

"emission factor" means the average emission rate of a given greenhouse gas for a given source, relative to the activity data of a source stream assuming complete oxidation for combustion and complete conversion for all other chemical reactions;

"fugitive emissions" means emissions that occur from the release of greenhouse gases during the extraction, processing and delivery of fossil fuels;

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"greenhouse gas" means gaseous constituents of the atmosphere, both natural and anthropogenic, that absorb and re-emit infrared radiation, and includes carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF_6);

"industrial process" means a manufacturing process that chemically or physically transforms materials;

"Minister" means the Minister of Finance;

"person" includes a partnership and a trust;

"process emissions" means greenhouse gas emissions other than combustion emissions occurring as a result of intentional or unintentional reactions between substances or their transformation, including the chemical or electrolytic reduction of metal ores, the thermal decomposition of substances, and the formation of substances for use as product or feedstock;

"product use" means greenhouse gases used in products and product applications;

"Republic" means the Republic of South Africa;

"taxpayer" means a person liable for the carbon tax in terms of section 3;

"tax period" means a period in respect of which tax is payable as prescribed under section 14.

Imposition of carbon tax: Section 2

This section specifies that the carbon tax will be paid into the National Revenue Fund.

Persons subject to tax: Section 3

This section specifies which entities are liable for the tax. Liability for the tax arises for every entity that emits GHG emissions by conducting an activity included in Annexure 1 to the Notice in respect of the declaration of greenhouse gases as priority air

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pollutants under section 29(1) read with section 57 (1) of the National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004), issued by the Minister of Water and Environmental Affairs.

Tax Base: Section 4

The sources of GHG emissions are diverse and include:

- Scope 1: Direct GHG emissions from sources that are owned or controlled by the entity (e.g. emissions from fuel combustion and industrial processes).
- Scope 2: Indirect GHG emissions resulting from the generation of electricity, heating and cooling, or steam generated off site but purchased by the entity.
- Scope 3: Indirect GHG emissions (not included in scope 2) from sources not owned or directly controlled by the entity but related to the entity's activities (i.e. emissions that occur in the value chain of the reporting company).

The carbon tax covers all direct GHG emissions from sources that are owned or controlled by the relevant entity (Scope 1) emissions. These emissions relate to energy use (i.e. fuel combustion and gasification) and non-energy industrial processes. It will apply to all stationary and non-stationary direct and process emission sources (see below). The carbon tax is based on fuel inputs with approved emission factors, or an approved transparent and verified monitoring procedure.

Complementary measures and incentives (such as the energy efficiency savings tax incentive) have been introduced to encourage businesses to reduce their Scope 2 emissions; i.e. indirect emissions resulting from a firm's use of purchased electricity, heat or steam.

The carbon tax applies to all the sectors and activities except the Agriculture Forestry and Other Land Use (AFOLU) and waste sectors, which will be exempt during the first implementation phase (up to 2020), due to measurement difficulties. The carbon tax covers GHG emissions according to the Intergovernmental Panel on Climate Change (IPCC) Tier 1 guidelines (carbon dioxide, methane, nitrous oxide, perfluorocarbons, hydrofluorocarbons and sulphur hexafluoride).

1. Carbon Tax Base Calculation

Entities that engage in activities that produce direct GHG emissions will be liable for the tax and will need to submit their tax returns based on their own assessment of emissions to SARS.

To calculate the company's tax liability, the volume of GHG emissions is determined based on the fossil fuel combusted or product processed and multiplied by a corresponding emission factor. Schedule 1 provides emission factors for energy combustion, process emissions and fugitive emissions as will be used for mandatory reporting requirements under the NAEIS system developed by the DEA.

The calculation of the tax base is closely linked to the DEA mandatory reporting requirements of emissions for all economic sectors in South Africa which is expected to become effective in the first half of 2016. The NAEIS will play a major role in the emissions verification process for carbon tax liability. The DEA will collect information on emissions at installation level, which will be aggregated to company level in order to verify that companies are complying with their tax liability. Figure 1 below depicts the way that the GHG emissions will be reported under NAEIS.



Figure 1: GHG emissions reporting under NAEIS

The scheme also represents the basis upon which emissions to be used as the tax base for individual taxpayers will be calculated. The activity data component will contain fuel use data inputted by entities. The data will be composed of different types of fossil fuels. The emission factors sub module contains factors to quantify CO₂-equivalent emissions with a relatively high level of accuracy for different processes and sectors. The DEA will approve the appropriate emission factors and procedures, in line with the 2006 IPCC Guidelines for National Greenhouse Gas Inventories. Over time, emission factors could change depending on whether South Africa specific emission factors or methodologies are developed, verified and certified by DEA in consultation with local entities. Equally should the approach of emission factors not be suitable for particular industry processes, direct measurement methodologies or modelling techniques such as higher tier measurement solutions can be developed in conjunction with DEA (e.g. mass balance approach in the synthetic fuels production). Companies will have to use the same methodology to report their emissions to both DEA and SARS.

Entities will be liable for their, (1) fossil fuel combustion emissions, (2) fugitive emissions (e.g. fugitive emissions from coal mining) and, (3) industrial processes and product use emissions. Calculation will be carried out along the formulas in the carbon tax bill, which reflect mandatory reporting requirements. The tax base comprises of emissions from fossil fuel combustion, emissions from industrial process and product use and fugitive emissions.

EXAMPLES OF CARBON TAX BASE CALCULATION

Fossil fuel combustion emissions

$E = A_1 x B_1 + A_2 x B_2 + A_3 x B_3 + \dots + A_n x B_n$

where A_n is the mass of fossil fuel type *n* and B_n is its respective emission factor.

Example 1

Company 1C produces electricity and heat from sub-bituminous coal mined underground. It uses 2000 tonnes of sub-bituminous coal with an emissions factor of 1.8541 tCO₂e per tonne of coal. Its emissions **E** from combusting the coal to produce
electricity will be calculated as follows:

A = 2000

B = 1.8541

E = A * B = 2000 * 1.8541 = 3 708.20 tonnes CO₂e

Example 2

Company 2C produces electricity and heat from sub-bituminous coal mined underground as well as diesel in open cycle gas turbines (OCGTs). The company combusts 2000 tonnes of sub-bituminous coal with an emissions factor of 1.8541 tCO₂e per tonne of coal, 500 000 litres of diesel (equivalent to 418.5 tonnes) with an emissions factor of 2.8326 tCO₂e per tonne of diesel. Its emissions **E** from combusting the coal and diesel to produce electricity will be calculated as follows:

$A_1 = 2000;$	$A_2 = 418.50$
, ,	-

 $B_1 = 1.8541$ $B_2 = 2.8326$

 $E = A_1 * B_1 + A_2 * B_2 = (2000 * 1.8541) + (418.50 * 2.8326) = 4.893.64$ tonnes CO₂e

Example 3

Company 3C produces electricity and heat from sub-bituminous coal mined underground, diesel used in open cycle gas turbines (OCGTs) and crude oil transported by pipeline. The company combusts 2 000 tonnes of sub-bituminous coal with an emissions factor of 1.8541 tCO₂e per tonne of coal; 500 000 litres of diesel (equivalent to 418.5 tonnes) with an emissions factor of 2.8326 tCO₂e per tonne of diesel; and 10 000 litres of crude oil (equivalent to 8.8 tonnes) with an emissions factor of 3.2214 per tonne. Its emissions **E** from combusting the coal, diesel and crude oil to produce electricity will be calculated as follows:

$A_1 = 2000;$	$A_2 = 418.50$	$A_3 = 8.8$
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 $B_1 = 1.8541$ $B_2 = 2.8326$ $B_3 = 3.2214$

 $E = A_1 * B_1 + A_2 * B_2 + A_3 * B_3 = (2000 * 1.8541) + (418.50 * 2.8326) + (8.8 * 3.2214) = 4 921.99 tonnes CO_2e$

Fugitive emissions

$$F = N_1 x Q_1 + N_2 x Q_2 + N_3 x Q B_3 + \dots + N_n x Q_n$$

where N_n is the mass or volume of fossil fuel n and Q_n is its respective emission factor

Example 4

Company 1F mines sub-bituminous coal from underground and produces fugitive emissions. In the past year, it extracted 2000 tonnes of sub-bituminous coal with an emissions factor of 0.118657 tCO₂e per tonne of coal extracted. Its fugitive emissions **F** from underground coal mining will be calculated as follows:

N = 2000

Q = 0.118657

F = N * Q = 2000 * 0.118657 = 237.314 tonnes CO₂e

Example 5

Company 2F mines sub-bituminous coal from underground and uses crude oil transported by pipeline in most of its machinery which results in fugitive emissions. In the past year, it extracted 2000 tonnes of sub-bituminous coal with an emissions factor of 0.118657 tCO₂e per tonne of coal extracted and used 10 000 litres of crude oil (equivalent to $10M^3$) with an emissions factor of 0.1247 tCO₂e per M³ of oil. Its fugitive emissions **F** from mining coal from underground and transportation of its crude oil will be calculated as follows:

 $N_1 = 2000$ $N_2 = 10$

 $Q_1 = 0.118657$ $Q_2 = 0.1247$

 $F = N_1 * Q_1 + N_2 * Q_2 = (2000 * 0.118657) + (10 * 0.1247) = 238.56$ tonnes CO₂e

Process emissions

 $P = G_1 \times H_1 + G_2 \times H_2 + G_3 \times H_3 + \dots + G_n \times H_n$

where G_n is the mass of fossil fuel n and H_n is its respective emission factor

Example 6

Company 1P uses dolomitic lime to produce lime which results in process emissions.

In the past year, it produced 5 000 tonnes of lime from dolomitic lime with a process emissions factor of 0.77 tCO₂e per tonne of lime produced. Its process emissions **P** from processing dolomitic lime into lime will be calculated as follows:

G=5000

H = 0.77

 $P = G * H = 50000 * 0.77 = 3850 \text{ tonnes } CO_2e$

Example 7

Company 2P is an aluminium smelting plant that operates both a Soderberg plant and centre work pre-bake cell technology with bar brake (CWPB) smelters to produce aluminium which results in process emissions. The Soderberg smelter produced 10 000 and the CWPB 20 000 tonnes of aluminium with respective process emission factors of 1.700 and 2.7560 tCO₂e per tonne of aluminium produced. Its process emissions **P** from using the Soderberg and CWPB smelting technologies to produce aluminium will be calculated as follows:

 $G_1 = 10000$ $G_2 = 20000$

 $H_1 = 1.700$ $H_2 = 2.756$

 $P = G_1 * H_1 + G_2 * H_2 = (10000 * 1.700) + (20000 * 2.756) = 72 120$ tonnes CO₂e

Example 8

Company 3P produces carbide using a silicon carbide production furnace or process unit which is not vented through the same stack as the combustion unit and also uses petroleum coke resulting in process emissions. 9 000 tonnes of silicon carbide and 1 000 tonnes of petroleum coke were consumed with respective process emission factors of 2.5346 and 1.7000 tCO₂e per tonne of raw material used. Its process emissions **P** from using the silicon carbide and petroleum coke will be calculated as follows:

 $G_1 = 9000$ $G_2 = 1000$

 $H_1 = 2.5346$ $H_2 = 1.700$

 $P = G_1 * H_1 + G_2 * H_2 = (9000 * 2.5346) + (1000 * 1.700) = 24511.4 \text{ tonnes } CO_2e$

Example 9 – carbon balance approach

Company CFP is an iron and steel manufacturer. Within its operation, it has a coke oven, blast furnace as well as an Oxygen Furnace for steel production. Company CFP uses a carbon balance approach to quantify greenhouse gas emissions from all activities occurring within its iron and steel facility. A simplified version of its carbon balance is provided below for illustration purposes. Note that inputs and outputs from the carbon balance are expressed in kilotonnes of carbon dioxide for ease of comparison between inputs and outputs. The results of the comparison should demonstrate that total carbon contained in all inputs is equal to the sum of carbon outputs (i.e. carbon in product, by-products and all greenhouse gas emission streams). The results from the carbon balance submitted by company CFP shows that it generated 547 ktonCO₂ from fugitive emissions, 7514 kton CO₂ from combustion emissions and 1073 kton CO₂ from process emissions.



The total emissions for CFP from its steel making processes will be calculated as follows:

F = 547 C = 7514 P = 1073

E = *F* + *C* + *P* = (547 + 7514 + 1073) * 1000 = 9 134 000 tonnes CO₂e

The total carbon contained in all inputs (ore + limestone + coking coal) is equal to the sum of carbon outputs (fugitive emissions + combustion emissions + process emissions + steel + coke stock).

Rate of the carbon tax: Section 5

The headline carbon tax will be introduced at a rate of R120 per ton of CO₂-equivalent. The actual rate will be confirmed by the Minister of Finance through the annual budgetary process.

Calculation of amount of carbon tax payable: Section 6

The carbon tax liability is determined by multiplying the tax base adjusted for the allowable tax-free thresholds with the carbon tax rate. The base is set and defined in section 4 and the rate is set in section 5. To moderate the impact of the tax, take account of international competitiveness and enable a smooth transition to a low carbon economy, tax-free thresholds will be allowed during the first phase. The tax-free allowances will range between 60 per cent and 95 per cent, effectively reducing the effective carbon tax rate to a range of between R6 and R48 per tCO₂-eq. A deduction for emissions emanating from the use of liquid fuels (petrol and diesel) in stationary processes is provided to avoid double taxation since the carbon tax on liquid fuels (petrol and diesel) will be imposed at source, as an addition to the current fuel taxes.

The amount of tax payable will be calculated as follows:

T (tax payable) =

{**E** (Energy combustion emissions) – **D** (diesel and petrol emissions) – **S** (emissions sequestered by company as verified by DEA)] x 1- **C** (where **C** is the sum of the allowable tax-free thresholds related to combustion) x **R** (tax rate)} +

{**P** (process emissions) x 1- **J** (where **J** is the sum of the allowable tax-free thresholds related to process emissions) x R (tax rate)} +

{**F** (fugitive emissions) x 1-**K** (where **K** is the sum of the allowable tax-free thresholds related to fugitive emissions) x R (tax rate)}.

EXAMPLES OF TAX PAYABLE CALCULATION

The formula used to calculate carbon tax liability elaborated on in section 6 (1) of the draft bill is as follows:

$X = \{(E - D - S) \times (1 - C) \times R\} + \{P \times (1 - J) \times R\} + \{F \times (1 - K) \times R\}$

Example 10

Company 1 produces electricity and heat from sub-bituminous coal mined from a surface coal mine. It uses 2000 tonnes of sub-bituminous coal with an emissions factor of $1.8541 \text{ tCO}_2\text{e}$ per tonne of coal.

Company 1 is not trade-exposed but has outperformed its peers, has complied with information requirements for its carbon budgets and has decided to make use of its full carbon offset allowance. There was no use of liquid fuels or any sequestration activities by Company 1.

Thus Company 1 is eligible for the basic 60 per cent tax-free allowance for (energy) combustion emissions; receives the 5 per cent allowance according to the performance allowance (Z-factor calculation) for outperforming its peers and 5 per cent allowance for complying with carbon budgets information requirements; and is eligible for up to 10 per cent offset allowance which it uses up to the maximum. The sum of Company 1's allowances is **80 per cent** (60+10+5 +5) for fossil fuel combustion emissions. The carbon tax liability for Company 1 will be calculated as follows:

E = A * B = 2000 * 1.8541 = 3 708.20 tonnes CO_2e F = D = S = P = 0C = 60% + 5% + 5% + 10% = 80%

 $X = \{(E - D - S) * (1 - C) * R\} + \{P * (1 - J)\} * R\} + \{F^{*}(1-K)^{*}R\} = \{(3708.20 - 0 - 0) * (1 - 0.8) * R120\} + 0 + 0 = R88 996.80$

Example 11

Company 2 produces electricity and heat from sub-bituminous coal mined from a surface coal mine as well as diesel in open cycle gas turbines (OCGTs). It uses 2000 tonnes of sub-bituminous coal with an emissions factor of 1.8541 tCO₂e per tonne of coal, 500 000 litres of diesel (equivalent to 418.5 tonnes) with an emissions factor of 2.8326 tCO₂e per tonne of diesel.

Company 2 is not trade-exposed but has outperformed its peers, has complied with information requirements for its carbon budgets and has decided to purchase its full carbon offset allowance. There were no sequestration activities by Company 2.

Company 2 is eligible for the basic 60 per cent tax-free allowance for energy combustion emissions; receives the 5 per cent allowance according to the Z-factor calculation for outperforming its peers and 5 per cent allowance for complying with carbon budgets information requirements; and is eligible for up to 10 per cent offset allowance which it uses up to the maximum. Since liquid fuels are taxed at the point of sale, their emissions are subtracted from the total combustion emissions to avoid double taxation. The sum of Company 2's allowances is **80 per cent** (60+10+5+5) for fossil fuel combustion emissions. The carbon tax liability for Company 2 will be calculated as follows:

 $E = A_1 * B_1 + A_2 * B_2 = (2000 * 1.8541) + (418.50 * 2.8326) = 4 893.64$ tonnes CO₂e D = 418.50 * 2.8326 = 1 185.44 tonnes CO₂e F = S = P = 0C = 60% + 5% + 5% + 10% = 80%

$$X = \{(E - D - S) * (1 - C) * R\} + \{P * (1 - J)\} * R\} + \{F^{*}(1 - K)^{*}R\} =$$

{(4 893.64 - 1 185.44 - 0)* (1 - 0.8) * R120} + 0 +0 = R88 996.80

The carbon tax paid for diesel will be included in the fuel price and will not require any further submissions by the company.

Example 12

Company 3 produces carbide using a silicon carbide production furnace or process unit which is not vented through the same stack as the combustion unit and also uses petroleum coke resulting in both combustion and process emissions. It combusts 2000 tonnes of sub-bituminous coal for energy with an energy emissions factor of 1.8541 tCO₂e per tonne of coal, 500 000 litres of diesel (equivalent to 418.5 tonnes) with an energy emissions factor of 2.8326 tCO₂e per tonne of diesel. 9 000 tonnes of silicon carbide and 1 000 tonnes of petroleum coke were used with respective process emission factors of 2.5346 and 1.7000 tCO₂e per tonne of raw material used.

Company 3 is trade-exposed, has process emissions but does not have any fugitive emissions. It has outperformed its peers, has complied with information requirements for its carbon budgets and has decided to purchase its full carbon offset allowance. There were no sequestration activities by Company 3.

Company 3 is eligible for the basic 60 per cent tax-free allowance for combustion emissions, the basic 70 per cent tax-free allowance for process emissions, 10 per cent for trade exposure, receives the 5 per cent allowance according to the Z-factor calculation for outperforming its peers and 5 per cent allowance for complying with carbon budgets information requirements and finally is eligible for up to 5 per cent of offsets allowance which it uses up to the maximum. Thus, the sum of Company 3's process allowances is **95 per cent** (70+10+5 + 5 +5) and fossil fuel combustion allowances is **85 per cent** (60+10+5+5+5) and its total tax liability will be calculated as follows:

 $P = G_1 * H_1 + G_2 * H_2 = (9000 * 2.5346) + (1000 * 1.700) = 24511.4 \text{ tonnes } CO_2e$ $E = A_1 * B_1 + A_2 * B_2 = (2000 * 1.8541) + (418.50 * 2.8326) = 4893.64 \text{ tonnes } CO_2e$ $D = 418.50 * 2.8326 = 1185.44 \text{ tonnes } CO_2e$ C = 60% + 10% + 5% + 5% + 5% = 85%J = 70% + 10% + 5% + 5% + 5% = 95%

 $X = \{(E - D - S) * (1 - C) * R\} + \{P * (1 - J)\} * R\} + \{F^{*}(1-K)^{*}R\} =$

 ${(4\ 893.64 - 1\ 185.44 - 0)^{*}(1 - 0.85)^{*}R120} + {24\ 511.4^{*}(1 - 0.95)^{*}R120} + 0 =$

R213 816.06

Example 13

Company 4 is an iron and steel manufacturer. Within its operation, it has a coke oven, blast furnace as well as an Oxygen Furnace for steel production. Company 4 uses a carbon balance approach to quantify greenhouse gas emissions from all activities occurring within its iron and steel facility. The total carbon contained in all inputs should equal the sum of carbon outputs (i.e. carbon in product, by-products and all greenhouse gas emission streams). The results from the carbon balance submitted by Company 4 shows that it generated 547 ktonCO₂ from fugitive emissions, 7514 kton CO_2 from combustion emissions and 1073 kton CO_2 from process emissions.

Company 4 is trade-exposed, has process and fugitive emissions. It has outperformed its peers, has complied with information requirements for its carbon budgets and has decided to purchase its full carbon offset allowance. There were no sequestration activities by Company 4.

Company 4 is eligible for the basic 60 per cent tax-free allowance for fossil fuel combustion emissions; the basic 70 per cent tax-free allowance for process emissions; 10 per cent for fugitive emissions; 10 per cent for trade exposure; receives the 5 per cent allowance according to the Z-factor calculation for outperforming its peers and 5 per cent allowance for complying with carbon budgets information requirements and finally is eligible for up to 5 per cent of offsets allowance which it uses up to the maximum. Thus, the sum of Company 4's allowances is **85 per cent** (60+10+5+5+5) for fossil fuel combustion emissions, **95 per cent** (70+10+5+5+5) for process emissions, and **95 per cent** (60+10+10+5+5+5) for fugitive emissions and its total tax liability will be calculated as follows:

 $E = A * 1000 = (7514 * 1000) = 7514000 \text{ tonnes } CO_2e$ $P = G * 1000 = (1073 * 1000) = 1073000 \text{ tonnes } CO_2e$ $F = N * 1000 = (547 * 1000) = 547000 \text{ tonnes } CO_2e$ D = S = 0C = 60% + 10% + 5% + 5% + 5% = 85% J = 70% + 10% + 5% + 5% + 5% = 95% K = 60% + 10% + 10% + 5% + 5% + 5% = 95% $X = \{(E - D - S) * (1 - C) * R\} + \{P * (1 - J) * R\} + \{F^{*}(1 - K)^{*}R\} =$ $X = \{(7 514 \ 000 - 0 - 0) * (1 - 0.85) * R120\} + \{1 \ 073 \ 000 * (1 - 0.95) * R120\} + \{547 \ 000 * (1 - 0.95) * R120\} = R \ 144 \ 972 \ 000.$

Amount of tax payable in respect of electricity generation

Section 6 (2) deals with the calculation of the tax liability by entities that generate electricity taking into account the generation of electricity from renewable energy source as guided by the Integrated Resource Plan (IRP). This section outlines a formula that will be used to calculate the tax liability of electricity generation and at the same time providing a credit for the actual (calculated) implicit carbon price in any given year that is based on the actual renewable energy "premium" (e.g. wind, solar and small-scale hydro) in the electricity prices.

This credit will reduce the impact of the carbon tax on electricity prices and will avoid the so-called "double taxation". The credit will be calculated annually and an estimate of this premium will be consulted on and agreed with Eskom, NERSA and the DoE.

The amount of tax payable by taxpayers for the generation of electricity from fossil fuels should be calculated as above and should then be adjusted as follows:

 TE_{final} (final tax payable by electricity generator) = TE (tax payable by electricity generator) – REP (renewable energy premium)

Part II. Allowances

Tax-free allowances are provided to entities during the first phase of the carbon tax regime to provide for a smooth transition to a low carbon economy and to take into account international competitiveness and carbon leakage concerns. The basic tax-free threshold will be 60 per cent for the fuel combustion emissions and 70 per cent for process emissions. Upward adjustment of the basic tax-free threshold by up to 5 per

cent will be based on the GHG intensity benchmark associated with over performance within the sector and up to 5 per cent allowance for complying with information reporting requirements for the carbon budgeting process. Furthermore, additional exemptions for specific sectors of up to 10 per cent for companies which are energy-intensive / trade exposed and 10 per cent for some companies with fugitive emissions will be provided.

In addition, an up to 10 per cent carbon offset allowance is available to emitters as per the 2013 Carbon Tax Policy paper's commitment. Details regarding the development of a carbon offset program were further elaborated on in the 2014 Carbon Offsets paper. Besides providing a flexibility option, offsets are also used to encourage locallybased emissions reduction in sectors not directly covered by the tax.

These percentage tax-free thresholds may be reduced in the second phase of the tax (2020 onwards) and / or may be replaced by absolute emission thresholds to align with the proposed carbon budgeting system.

The allocation of tax-free thresholds under the carbon tax will be calculated as per sectoral classification in Schedule 2. The classification reflects the IPCC classification and is aligned with mandatory reporting requirements under the DEA GHG inventory.

Basic tax-free allowance for fossil fuel combustion emissions: Section 7

All entities that generate emissions from energy combustion will be allocated a basic, percentage-based, tax-free threshold on actual energy combustion emissions of 60 per cent, below which the tax will not be payable.

Basic tax-free allowance for industrial process emissions: Section 8

One of the challenges in applying a comprehensive, broad-based carbon tax is to consider opportunities that are available for mitigation. Emissions from chemical processes that occur in fixed stoichiometric ratios (e.g. coal gasification, crude oil cracking and the production of cement, iron, steel, glass, ceramic and certain chemicals, such as calcium carbide and titanium dioxide) have limited potential for mitigation over the short term. A higher tax-free basic percentage-based threshold is therefore provided for these emissions compared to energy combustion emissions. A basic percentage-based threshold on actual industrial process and product use emissions of 70 per cent is applied, below which the tax will not be payable.

Allowance in respect of fugitive emissions: Section 9

This section deals with allocation of a tax-free allowance to entities that generate fugitive emissions. An additional tax-free allowance of 10 per cent will be provided to sectors with fugitive emissions. This allowance is provided due to the limited potential for mitigation of fugitive emissions over the short term.

Trade exposure allowance: Section 10

This section deals with the allocation of a tax-free allowance to entities that are exposed to trade and international competitiveness. Potential adverse impacts on industry competitiveness are addressed by providing an additional maximum 10 per cent tax-free trade exposure allowance for energy intensive and trade intensive sectors (EITI).

Trade-intensive industries can be defined as those industries in which exports are more than 40 per cent of their domestic sales; other references use 60 per cent as the threshold (see the discussion in Jooste et al., 2009).

This tax-free allowance will be structured as graduated relief. Firms will use their exports as a percentage of sales as an indication of their trade intensity.

The additional percentage relief (tax-free threshold) will be: $Y2 = 0.4 \times (E)$

where E = the value of exports expressed as a percentage of sales (it must be greater than 5 per cent), up to a maximum of 10 per cent, as indicated in Table 2.

Exports (E)		
0.4		
% relief (Y2)	% of sales	
0	Below 5	
2	5	
4	10	
6	15	
7.2	18	
8	20	
10	25	
10	30	
10	35	
$Y2 = 0.4 \times E$		
E must be >5%		
Maximum for Y2 = 10%		

Table 2: Trade-exposed, tax-free threshold relief

Performance Allowance (Z-factor): Section 11

This section deals with allocation of a tax-free allowance to entities that have proactively implemented GHG mitigation measures.

An additional tax-free allowance of 5 per cent, based on the Z-factor formula, is available to reward all companies that have taken voluntary actions to reduce their GHG emissions. This will be accommodated by adjusting the basic tax-free threshold of 60 or 70 per cent by a factor (Z), calculated with reference to the agreed GHG emissions intensity benchmark (including both Scope 1 and Scope 2 emissions) for the sector or sub-sector. Essentially, firms below the emissions intensity benchmark will be rewarded.

Calculation of the Z-factor and application of GHG emissions intensity benchmarks for different industrial sectors or sub-sectors will be specified in regulation. The development of this regulation will be done based on inputs received from the different industry associations or companies.

Carbon budget system allowance: Section 12

In recognition of the carbon budgets process being developed by DEA, an additional 5 per cent allowance, to companies participating in phase 1 of the carbon budget system, will be provided.

Offset allowance: Section 13

This section deals with tax-free allowances for entities that would like to purchase carbon offsets to reduce their tax liability. Carbon offsets are proposed to provide entities with additional flexibility to reduce their GHG emissions. Carbon offsets can be used by firms to reduce their carbon tax liability by 5 or 10 per cent of their total emissions.

Work is currently underway to finalise Regulations on the specifics of the proposed carbon offset mechanism.

Part III. Limitation of allowances

Limitation of allowances: Section 14

This section provides a limitation to the overall maximum tax-free allowances and allowances with respect to carbon offsets that an entity liable for the carbon tax may receive.

The overall maximum tax-free allowance (threshold) is limited to 95 per cent.

Part IV. Administration, tax period and payment of tax

Administration: Section 15

This section describes the administration procedures regarding the tax. The carbon tax will be collected by SARS and will be administered through the Customs and Excise Act, 1964.

Tax period: Section 16

This section describes the time period to which the tax applies.

Payment of tax: Section 17

This section specifies modalities regarding the payment of the tax.

Part V: Impermissible arrangements

Impermissible tax avoidance arrangements: Section 18

This section addresses avoidance of the carbon tax liability.

Part VI: Miscellaneous

Reporting: Section 19

This section specifies the type and frequency of reporting that the Commissioner must do to the Minister of Finance.

Regulations: Section 20

This section specifies complementary regulations to be introduced.

Amendment of laws: Section 21

This section specifies the extent of amendments to the Customs and Excise Act required in order for SARS to administer the carbon tax.

Short title and commencement: Section 22

This section specifies the commencement date of the tax.

SCHEDULE 1

Schedule 1 provides emission factors for energy combustion, process emissions and fugitive emissions as will be used for mandatory reporting requirements under the NAEIS system being developed by the DEA.

Table 1: Energy Combustion Emission factors

Calculating emission factors for energy combustion emissions

Energy combustion emissions are classified according to whether they emanate from a stationary or mobile source category and their emission factors also differ across these categories. For all combustion activities, the carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O) GHG emissions are converted to a carbon dioxide equivalent (CO_2e) standard. The CO_2e is a measure used to compare the emissions from various GHGs based upon their global warming potential (GWP). The GWP is a relative measure of how much heat a GHG traps in the atmosphere i.e. it compares the amount of heat trapped by a certain mass of the gas in question to the amount of heat trapped by a similar mass of carbon dioxide. For example, according to the IPCC Third Assessment Report (TAR) the GWP over 100 years is 23 for methane, 296 for nitrous oxide and 1 for carbon dioxide. These GWP values are applied in this case because indications from DEA are that these are the values which have been agreed on with the industry. Thus each source category's various GHGs are standardized to a CO_2e as follows:

$CO_2e \text{ emissions / terra joule} = CO_2 * 1 + CH_4 * 23 + N_2O * 296$

The sum of the total carbon dioxide equivalent emissions/ terrajoule for each fuel type in the source category is then multiplied by the calorific value of the fuel type source category to derive the GHG carbon dioxide equivalent emission factor. This emission factor is then multiplied by the mass of fuel type within the source category to derive the amount of CO_2e emissions subject to the carbon tax.

Table 2: Fugitive Emission Factors

Calculating emission factors for fugitive emissions

Fugitive emissions for each source category activity are reported either as a mass per volume or volume per mass. For those reported as a mass per volume, the conversion to a CO₂e is straightforward as the reported mass per volume of each GHG is multiplied by its GWP (as highlighted above) to derive the CO₂e per volume which are then summed per activity to derive the total GHG CO₂e emission factor per volume of emissions. For source category activities reported as a volume per mass which is the underground coal mining, the volume per mass has to be converted to a mass by using a density factor. In South Africa, this applies to underground coal mining for which the industry developed its own South African specific emission factor. The density factor for methane for underground coal mining is 0.67 * 10⁻⁶ and this converts the methane into a mass which is then multiplied by the GWP to get a CO₂e emissions factor which is then used to calculate the carbon tax payable. For South Africa, there is no guidance on the density factor for CO₂ emissions so they are not included in calculating the underground coal mining fugitive emissions. Also, for surface coal mining, the DEA and industry have agreed that fugitive emissions are negligible hence they are treated as zero.

Table 3: Industrial Process and Product Use Emission Factors

Calculating emission factors for process emissions

Process emissions for each source category activity are reported in mass hence their conversion into a CO₂e is by multiplying the respective GHG by its GWP from the TAR as follows:

 $CO_2e \text{ emissions} = CO_2 * 1 + CH_4 * 23 + N_2O * 296 + C_2F_6 * 11 900 + CF_4 * 5 700 + SF_6 * 22 200$

With regards to hydroflourocarbons (HFCs) process emissions, these are currently not being measured by the DEA because they depend on how leakages are managed and these vary per installation and there is a wide range of them (currently no reporting threshold for HFCs). Hence for phase 1 of the carbon tax, these emissions will not be included in the process emissions calculation until such a time as when DEA can measure and monitor them.

SCHEDULE 2

The carbon tax will be calculated as per sectoral classification in Schedule 2. The classification reflects the IPCC classification and is aligned with mandatory reporting requirements under the DEA GHG inventory.

It may be difficult to administer the application of the carbon tax to the land-use, landuse change & forestry and waste sectors due to the inaccuracies, absence of appropriate measurement and verification procedures for GHG emissions. The landuse, land-use change & forestry and waste sectors will therefore be excluded during the first phase, largely due to administrative difficulties in measuring and verifying emissions from these sectors. The intention is to include them in the carbon tax regime after the first phase implementation period. However, if the land-use, land-use change & forestry and waste sectors produce emissions from fossil fuel combustion, such as from coal or liquid fuels, these emissions will be liable for carbon tax.

SCHEDULE 3

See notes on Clause 15 in the draft bill.

REPUBLIC OF SOUTH AFRICA

DRAFT CARBON TAX BILL

(As introduced in the National Assembly (proposed section 77)) (The English text is the official text of the Bill)

(MINISTER OF FINANCE)

[B – 2017]

BILL

To provide for the imposition of a tax on the carbon dioxide (CO_2) equivalent of greenhouse gas emissions; and to provide for matters connected therewith.

PREAMBLE

SINCE the causality of the increasing of anthropogenic greenhouse gas emissions in the atmosphere and the global climate change has been scientifically confirmed;

AND SINCE it has consequently become necessary to manage the inevitable climate change impact through interventions that build and sustain South Africa's social, economic and environmental resilience and emergency response capacity;

AND SINCE it has also become necessary to make a contribution to the global effort to stabilise greenhouse gas concentrations in the atmosphere at a level that avoids dangerous anthropogenic interference with the climate system within a timeframe that enables economic, social and environmental development to proceed in a sustainable manner;

AND SINCE the costs of remedying pollution, environmental degradation and consequent adverse health effects and of preventing, controlling or minimising

further pollution, environmental damage or adverse health effects must be paid for by those responsible for harming the environment (the polluter pays principle);

AND SINCE government is desirous to utilise a package of measures in an effort to address the challenges posed by climate change;

AND SINCE this package of measures will be achieved by the deployment of a range of economic instruments to support the system of desired emissions reduction outcomes, including the appropriate pricing of carbon and economic incentives, as well as the use of emissions offsets;

AND SINCE government believes that imposing a tax on greenhouse gas emissions and concomitant measures such as providing tax incentives for rewarding the efficient use of energy will provide appropriate price signals to help nudge the economy towards a more sustainable growth path.

BE IT THEREFORE ENACTED by the Parliament of the Republic of South Africa, as follows:—

ARRANGEMENT OF SECTIONS

Sections

PART I

Definitions and general provisions relating to imposition of carbon tax

- 1. Definitions
- 2. Imposition of carbon tax
- 3. Persons subject to tax
- 4. Tax base
- 5. Rate of tax
- 6. Calculation of amount of tax payable

Part II

Allowances

- 7. Allowance for fossil fuel combustion
- 8. Allowance for industrial process emissions
- 9. Allowance in respect of fugitive emissions
- 10. Trade exposure allowance
- 11. Performance allowance
- 12. Carbon budget allowance
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Part III

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14. Limitation of sum of allowances

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- 15. Administration
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18. Impermissible tax avoidance arrangements

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- 19. Reporting
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- 21. Amendment of laws
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SCHEDULE 1

SCHEDULE 2

SCHEDULE 3

Part I

Definitions and general provisions relating to imposition of carbon tax

Definitions

1. In this Act, unless the context otherwise indicates—

"allowance" means any amount allowed to be taken into account in terms of Part II, subject to section 14, for the purposes of determining the amount of carbon tax payable;

"carbon budget" means a limit on total Greenhouse Gas emissions from a specific company, within a specific period of time;

"carbon tax" means a tax on the carbon dioxide (CO₂) equivalent of greenhouse gas emissions imposed in terms of section 2;

"carbon dioxide (CO_2) equivalent" means the concentration of carbon dioxide that would cause the same amount of radiative forcing (the difference of sunlight absorbed by the Earth and energy radiated back to space) as a given mixture of carbon dioxide and other greenhouse gases;

"combustion" means the exothermic reaction of a fuel with oxygen;

"**Commissioner**" means the Commissioner for the South African Revenue Service;

"emissions" means the release of greenhouse gases or their precursors and aerosols into the atmosphere over a specified area and period of time;

"emission factor" means the average emission rate of a given greenhouse gas for a given source, relative to the activity data of a source stream assuming complete oxidation for combustion and complete conversion for all other chemical reactions;

"emissions intensity" means an indicator of the result of the measurement of the quantity of greenhouse gas emissions in relation to an activity;

"emissions intensity benchmark" means the result of the measurement in respect of an activity that creates greenhouse gas emissions—

- (a) expressed as a predetermined value of the quantity of specified greenhouse gas emissions;
- (b) in relation to an activity that is differentiated from other activities by means of a product, a type of fuel or a technology; and

(c) compared against the quantity of greenhouse gas emissions,

in relation to an identical activity undertaken by another person;

"fugitive emissions" means emissions that occur from the release of greenhouse gases during the extraction, processing and delivery of fossil fuels;

"greenhouse gas" means gaseous constituents of the atmosphere, both natural and anthropogenic, that absorb and re-emit infrared radiation, and includes carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF₆);

"industrial process" means a manufacturing process that chemically or physically transforms materials;

"Minister" means the Minister of Finance;

"person" includes a partnership and a trust;

"process emissions" means greenhouse gas emissions other than combustion emissions occurring as a result of intentional or unintentional reactions between substances or their transformation, including the chemical or electrolytic reduction of metal ores, the thermal decomposition of substances, and the formation of substances for use as product or feedstock; "product use" means greenhouse gases used in products and product applications;

"Republic" means the Republic of South Africa;

"taxpayer" means a person liable for the carbon tax in terms of section 3; "tax period" means a period in respect of which tax is payable as prescribed under section 16.

Imposition of carbon tax

2. There must be levied and collected for the benefit of the National Revenue Fund, a tax to be known as the carbon tax.

Persons subject to tax

- 3. A person is—
- (a) a taxpayer for the purposes of this Act; and
- (b) liable to pay an amount of carbon tax calculated as contemplated in section 6 in respect of a tax period as specified in section 16,

if that person conducts an activity as set out in Annexure 1 to the Notice issued by the Minister responsible for environmental affairs in respect of the declaration of greenhouse gases as priority air pollutants under section 29(1) read with section 57(1) of the National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004).

Tax base

4. (1) The carbon tax must be levied in respect of the sum of the greenhouse gas emissions of a taxpayer in respect of a tax period expressed as the carbon dioxide equivalent of those greenhouse gas emissions resulting from—

(a) fossil fuels combustion in respect of that tax period that is a number constituted by the sum of the respective numbers determined for each type of fossil fuel in respect of which a greenhouse gas is emitted in respect of that tax period which respective numbers must be determined in accordance with the formula:

$$\mathbf{E} = (\mathbf{A} \times \mathbf{B})$$

in which formula-

- (i) **"E"** represents the number to be determined;
- (ii) "A" represents the mass of any one type of the fossil fuel expressed in tonne that is the source of the greenhouse gas emission, other than any fuel utilised for the purposes of international aviation and maritime transport;

- (iii) "B" represents the greenhouse gas emission factor in carbon dioxide equivalent per tonne that must be determined by matching the type of fossil fuel of which the mass is determined in terms of symbol "A", listed in the column "fuel type" of Table 1 of Schedule 1 with the number in the corresponding line of the column "GHG emission factor (CO₂e) per tonne";
- (b) fugitive emissions in respect of commodity, fuel or technology that is a number constituted by the sum of the respective numbers determined for each type of commodity, fuel or technology in respect of which the greenhouse gas is emitted in respect of a tax period which respective numbers must be determined in accordance with the formula:

$$F = (N \times Q)$$

in which formula-

- (i) "F" represents the number to be determined;
- (ii) "N" represents the mass expressed in tonne in the case of solid fuels or the volume of each type of fuel expressed in cubic metres in the case of fuels other than solid fuels, in respect of the greenhouse gas emission; and
- (iii) "Q" represents the greenhouse gas emission factor in carbon dioxide equivalent expressed in tonne or cubic metres that must be determined by matching the type of fuel in respect of the greenhouse gas emissions listed in the column "source category activity" in Table 2 of Schedule 1 with the number in the corresponding line of the column "GHG emission factor "; and

(c) industrial process and product use in respect of a tax period that is a number constituted by the sum of the respective numbers determined for each type of commodity, fuel or technology in respect of which the greenhouse gas is emitted in respect of that tax period which respective numbers must be determined in accordance with the formula:

$\mathsf{P} = (\mathsf{G} \mathsf{x} \mathsf{H})$

in which formula-

- (i) **"P"** represents the amount to be determined;
- (ii) "G" represents the mass of each raw material used or product produced expressed in tonne in respect of which the greenhouse gas is emitted in respect of that tax period; and
- (iii) "H" represents the greenhouse gas emission factor in carbon dioxide emissions equivalent per tonne for each raw material used or product produced that must be determined by matching the raw material used or product produced listed in the column "source category activity/ raw material/ product" in Table 3 of Schedule 1 with the number in the corresponding line of the column "GHG emission factor (CO₂e) per tonne" of that table.

(2) If there are no emission factors available for the purposes of the calculation of greenhouse gas emissions as contemplated in subsection (1), a reporting methodology as approved by the Department of Environmental Affairs must be applied for the purposes of determining those emission factors.

Rate of tax

5. The rate of the carbon tax must be an amount of R120 per tonne carbon dioxide equivalent of the greenhouse gas emissions of a taxpayer.

Calculation of amount of tax payable

6. (1) Subject to subsection (2), the amount of tax payable by a taxpayer in respect of a tax period must be calculated in accordance with the formula:

$X = \{(E - D - S) \times (1 - C) \times R\} + \{P \times (1 - J) \times R\} + \{F \times (1 - K) \times R\}$

in which formula-

- (a) **"X"** represents the amount to be determined;
- (b) "E" represents the number in respect of the total fossil fuel combustion related greenhouse gas emissions of the taxpayer in respect of that tax period expressed as a carbon dioxide equivalent determined in terms of section 4(1)(a);
- (c) "D" represents the number in respect of the petrol and diesel related greenhouse gas emissions of that taxpayer in respect of that tax period expressed as a carbon dioxide equivalent, determined in terms of section 4(1)(a);
- (d) **"S**" represents the number in respect of greenhouse gas emissions, expressed in terms of carbon dioxide equivalent that were sequestrated in

respect of that tax period as verified and certified by the Department of Environmental Affairs;

- (e) "C" represents the sum of percentages of allowances determined in terms of sections 7, 10, 11, 12, and 13 in respect of that tax period subject to section 14;
- (f) "**R**" represents the rate of tax prescribed under section 5;
- (g) "P" represents the number in respect of the total industrial process and product use related greenhouse gas emissions of the taxpayer in respect of that tax period expressed as a carbon dioxide equivalent determined in terms of section 4(1)(c);
- (h) "J" represents the sum of the percentages of the allowances determined in terms of sections 8, 10, 11, 12 and 13 in respect of that tax period, subject to section 14;
- *"F"* represents the number in respect of the total fugitive greenhouse gas emissions of the taxpayer in respect of that tax period expressed as a carbon dioxide equivalent determined in terms of section 4(1)*(b)*; and
- (*j*) **"K**" represents the sum of the percentages of the allowances determined in terms of sections 7, 9, 10, 11, 12 and 13 in respect of that tax period, subject to section 14:

Provided that where the number in respect of the determination of the expression "(E - D - S)" in the formula is less than zero, that number must be deemed to be zero.

(2) The amount of tax payable by a taxpayer in respect of the generation of electricity from fossil fuels in respect of a tax period must be calculated in accordance with the formula:

X = A - B

in which formula-

- (a) "X" represents the amount to be determined;
- (b) "A" represents the amount of tax payable in respect of a tax period determined in terms of subsection (1); and
- (c) "B" represents the renewable energy premium in respect of a tax period constituted by an amount expressed in Rand of the revenue received or accrued in respect of the electricity tariff or price allowed as a recovery of cost by the Independent Power Producers as determined in terms of the Multi Year Price Determination Methodology published by the National Energy Regulator of South Africa established by section 3 of the National Energy Regulator Act, 2004 (Act No. 40 of 2004).

(3) For the purposes of this section "**sequestrate**" means the process of increasing the carbon content of a carbon reservoir other than the atmosphere.

PART II

Allowances

Allowance for fossil fuel combustion

7. A taxpayer that conducts an activity that is listed in Schedule 2 in the column "Sector" may receive an allowance of 60 per cent of the total percentage of greenhouse gas emissions in respect of a tax period in respect of that activity.

Allowance for industrial process emissions.

8. (1) A taxpayer that conducts an activity in respect of industrial process emissions that is listed in Schedule 2 in the column "Sector" may receive an allowance in respect of those emissions, determined in terms of subsection (2).

(2) The percentage of the allowance referred to in subsection (1) must be calculated by matching the line in which the activity is contained in the column "Sector" with the corresponding line in the column "Basic tax-free allowance for process emissions %" in Schedule 2 of the total percentage of greenhouse gas emissions in respect of a tax period in respect of that activity.

Allowance in respect of fugitive emissions

9. (1) A taxpayer that conducts an activity that is listed in Schedule 2 in the column "Sector" may receive an allowance in respect of fugitive emissions in a percentage determined in terms of subsection (2).

(2) The allowance referred to in subsection (1) must be determined by matching the line in which the activity is contained in the column "Sector" with the corresponding line in the column "Fugitive emissions allowance %" in Schedule 2 in respect of the total percentage of greenhouse gas emissions in respect of the tax period in respect of that activity.

Trade exposure allowance

10. A taxpayer that is liable for the carbon tax in respect of greenhouse gas emissions in respect of the export of goods out of the Republic may receive an allowance in respect of a tax period in respect of those greenhouse gas emissions which is the lower of—

(a) an amount that must be determined in accordance with the formula:

$X = A \times B$

in which formula-

- (i) **"X"** represents the amount to be determined;
- (ii) **"A"** represents the number 0.4;
- (iii) **"B"—**
 - (aa) represents a number that bears to the number 100 the same ratio as the revenue received from goods that are exported bears to the total revenue received from all similar goods that are sold by that taxpayer; and
 - (bb) must be deemed to be nil if the number determined in terms of subparagraph (aa) is lower than the number five;or
- (b) 10 per cent of the total greenhouse gas emissions.

Performance allowance

11. (1) A taxpayer that has implemented additional measures to reduce the greenhouse gas emissions of that taxpayer in respect of a tax period may receive an allowance in respect of that tax period not exceeding five per cent of the total greenhouse gas emissions of that taxpayer during that tax period determined in accordance with the formula:

$$Z = (A / B - C) \times D$$

in which formula-

(a) "Z" represents the percentage to be determined;

(b) "A" represents—

- the sector or sub-sector greenhouse gas emissions intensity benchmark as prescribed by the Minister; or
- (ii) where no value is prescribed as required by subparagraph (i), the number zero;
- (c) "B" represents the measured and verified greenhouse gas emissions intensity of a taxpayer in respect of a tax period;
- (d) "C" represents the number one; and
- (e) "**D**" represents the number 100.

(2) For the purposes of this section "additional measures" include voluntary action taken to reduce greenhouse gas emissions in respect of a tax period.

Carbon budget allowance
12. A taxpayer that conducts an activity that is listed in Schedule 2 in the column "Sector", and participates in the carbon budget system during or before the tax period, may receive an additional allowance of 5 per cent of the total percentage of greenhouse gas emissions in respect of a tax period.

Offset allowance

13. (1) Subject to subsection (2), a taxpayer may reduce the amount in respect of the carbon tax for which the taxpayer is liable in respect of a tax period by utilising carbon offsets as prescribed by the Minister.

(2) The reduction of the liability for the carbon tax allowed in terms of subsection (1) may not exceed so much of the percentage of the total greenhouse gas emissions of a taxpayer in respect of a tax period as is determined by matching the line in the column "Sector" with the percentage in the corresponding line of the column "Offsets allowance %" in Schedule 2.

PART III

Limitation of allowances

Limitation of sum of allowances

14. A taxpayer may only receive the sum of the allowances contemplated in Part II in respect of a tax period to the extent that the sum of those allowances does not exceed 95 per cent of the total greenhouse gas emissions of that taxpayer

in respect of that tax period as determined in terms of the column "Maximum total allowances %" in Schedule 2.

PART IV

Administration, tax period and payment of tax

Administration

15. (1) The Commissioner must administer the provisions of this Act as if the carbon tax were an environmental levy as contemplated in section 54A of the Customs and Excise Act, 1964 (Act No. 91 of 1964), that must be collected and paid in terms of the provisions of that Act.

(2) For the purposes of subsection (1), administrative actions, requirements and procedures for purposes of submission and verification of accounts, collection and payment of the carbon tax as an environmental levy or the performance of any duty, power or obligation or the exercise of any right in terms of this Act are, to the extent not regulated in this Act, regulated by the Customs and Excise Act, 1964.

Tax period

- **16.** (1) A taxpayer must pay the carbon tax for every tax period.
 - (2) A tax period in relation to a taxpayer is—
- (a) the period commencing on 1 January 2017 and ending on 31 December 2017; and

(b) subsequent to the period contemplated in paragraph (a), the period
 commencing on 1 January of each year and ending on 31 December of that
 year.

Payment of tax

17. (1) A taxpayer must submit six-monthly environmental levy accounts and payments as prescribed by rule in terms of the Customs and Excise Act, 1964, for every tax period commencing on 1 January and ending on 30 June and the period commencing on 1 July and ending on 31 December of that year.

(2) A taxpayer must effect any required adjustments to environmental levy accounts and payments for a tax period in the subsequent environmental levy account and payment of the period commencing on 1 January and ending on 30 June in the following tax period.

Part V

Impermissible arrangements

Impermissible tax avoidance arrangements

- **18.** (1) If the Commissioner is satisfied that an arrangement—
- (a) has been entered into or carried out in a manner that has the effect of providing a tax benefit to a person; and
- (b) having regard to the substance of the arrangement—

- (i) was entered into or carried out by any means or in a manner which would not normally be employed for purposes other than the obtaining of a tax benefit;
- (ii) has created rights or obligations which would not normally be created between persons dealing at arm's length; and
- (iii) was entered into or carried out solely or mainly for the purpose of obtaining a tax benefit,

the Commissioner may determine the liability for tax imposed under this Act and the amount thereof as if the arrangement had not been entered into or carried out, or in such manner as in the circumstances of the case the Commissioner deems appropriate for the prevention or diminution of that tax benefit.

(2) For the purposes of this section—

"dealing at arm's length" means a transaction in the open market in which two or more independent persons acting in good faith, without regard to the liability for tax, would freely and without conflict of interest agree to transact in the ordinary course of business;

"arrangement" includes any transaction, operation, scheme or understanding, whether enforceable or not, including all steps and transactions by which it is carried into effect; and

"tax benefit" includes-

- (a) any reduction in the liability of any person to pay any tax or other amount imposed by this Act;
- (b) any increase in the entitlement of any person to an allowance allowed in terms of this Act; and

(c) any other avoidance or postponement of liability for the payment of any tax or other amount imposed by this Act.

PART VI

Miscellaneous

Reporting

- **19.** The Commissioner must annually submit to the Minister a report, in the form and manner that the Minister may prescribe, within six months from the end of every tax period, advising the Minister of—
- (a) the greenhouse gas emissions reported; and
- (b) the amount of carbon tax collected,

in respect of that tax period.

Regulations

20. The Minister must make regulations in respect of—

- (a) the sector or sub-sector greenhouse gas emissions intensity benchmark for the purposes of symbol "A" in section 11(1); and
- (b) carbon offsets contemplated in section 13.

Amendment of laws

21. The Customs and Excise Act, 1964, is hereby amended to the extent set out in Schedule 3.

Short title and commencement

22. This Act is called the Carbon Tax Act, 2017, and comes into operation on 1 January 2017.

SCHEDULE 1

Table 1

Energy Combustion Emission Factors

STATIONARY SOURCE CATEGORY

	GHG EMISSION FACTOR (CO ₂ e) PER
FUEL TYPE	TONNE
ANTHRACITE	2.6371
AVIATION GASOLINE	2.4095
BIODIESEL	1.9183
BIOGASOLINE	1.9183
BITUMEN	3.2541
BLAST FURNACE GAS	0.6423
BROWN COAL BRIQUETTES	2.0279
CHARCOAL	3.3593
COAL TAR	2.2727
COKE OVEN COKE AND LIGNITE COKE	3.0306
COKE OVEN GAS	1.7203
COKING COAL	2.0915
CRUDE OIL	3.2214
DIESEL	2.8326
ETHANE	2.8607
GAS COKE	1.8520
GAS WORKS GAS	1.7203
INDUSTRIAL WASTES	
JET GASOLINE	2.4095
JET KEROSENE	2.4609
LANDFILL GAS	2.7545
LIGNITE	1.2075
LIQUEFIED PETROLEUM GASES	1.6862
LUBRICANTS	2.9566
MUNICIPAL WASTES (BIOMASS	
FRACTION)	1.1817
MUNICIPAL WASTES (NON BIOMASS	
FRACTION)	0.9357
NAPHTHA	3.2906
NATURAL GAS	2.3023
NATURAL GAS LIQUIDS	2.6423
OIL SHALE AND TAR SANDS	0.9565
ORIMULSION	2.1243
OTHER BIOGAS	2.7545
OTHER BITUMINOUS COAL	1.8253
OTHER KEROSENE	2.6694
OTHER LIQUID BIOFUELS	2.1878

	GHG EMISSION FACTOR (CO ₂ e) PER
FUEL TYPE	TONNE
OTHER PETROLEUM PRODUCTS	2.9566
OTHER PRIMARY SOLID BIOMASS	1.1817
OXYGEN STEEL FURNACE GAS	1.2853
PARAFFIN WAXES	2.9566
PATENT FUEL	2.0279
PEAT	1.0391
PETROL	2.3785
PETROLEUM COKE	3.1768
REFINERY FEEDSTOCK	3.1625
REFINERY GAS	2.8538
RESIDUAL FUEL OIL	3.2301
SHALE OIL	2.8021
SLUDGE GAS	2.7545
SUB-BITUMINOUS COAL	1.8541
SULPHITE LYES (BLACK LIQUOR)	1.1323
WASTE OILS	3.0220
WHITE SPIRIT AND SBP	2.9566
WOOD/WOOD WASTE	1.7764

NON-STATIONARY / MOBILE SOURCE CATEGORY

	GHG EMISSION FACTOR (CO ₂ e) PER
FUEL TYPE	TONNE
AVIATION GASOLINE	2.3977
COMPRESSED NATURAL GAS	N/A
DIESEL	2.8706
DIESEL –OFFROAD	3.1497
DIESEL-RAIL	3.1494
JET KEROSENE	2.4732
KEROSENE	2.6694
LIQUEFIED NATURAL GASES	N/A
LIQUEFIED PETROLEUM GASES	1.7244
LUBRICANTS	2.9566
NATURAL GAS	2.4233
OTHER KEROSENE	2.6694
OTHER PETROLEUM PRODUCTS	2.9566
PARAFFIN WAXES	2.9566
PETROL-LOW MILEAGE LDV	2.4305
PETROL-OXIDATION CATALYST	2.4707
PETROL-UNCONTROLLED	2.4284
REFINERY GAS	2.8538
RESIDUAL FUEL OIL – WATER	3.2512
SUB-BITUMINOUS COAL – RAIL	1.8545

FUEL TYPE	GHG EMISSION FACTOR (CO ₂ e) PER TONNE
WHITE SPIRIT & SBP	2.9566

Table 2Fugitive Emission Factors

SOURCE CATEGORY ACTIVITY	GHG EMISSION FACTOR
	(CO ₂ e) PER TONNE
SOLID FUELS (M ³ /TONNE)	
UNDERGROUND COAL MINING	0.1187
UNDERGROUND POST-MINING (HANDLING &	0.0277
TRANSPORT)	0.0217
SURFACE COAL MINING	0.0000
SURFACE POST-MINING (STORAGE AND	0.0000
PRODUCTION)	CO ₂ e (TONNE /M ³)
FLARING AND VENTING	
WELL DRILLING	0.8590
WELL TESTING	10.1931
WELL SERVICING	2.5319
GAS PRODUCTION (Gg/ 10 ⁶ M ³ TOTAL OIL	
PRODUCTION)	0.75.40
	8.7540
FUGITIVES	10
	52.9820
	1.2237
GAS PROCESSING (Gg/ 10°M° RAW GAS FEED)	44,4000
	11.1900
SWEET GAS PLANTS-FUGITIVES	10
	24.0100
SWEET GAS PLANTS-FLARING	1.8350
SOUR GAS PLANTS-FUGITIVES	2.2389
SOUR GAS PLANTS-FLARING	3.6712
SOUR GAS PLANTS -RAW CO2 VENTING	63.0000
DEEP CUT EXTRACTION-FUGITIVES	0.2546
DEEP CUT EXTRACTION-FLARING	0.1152
	3.4620
DEFAULT-FUGITIVES	10
	24.0100
	3.0558
DEFAULT- RAW CO2 VENTING	40.0000
MARKETABLE GAS)	
	1.5189
TRANSMISSION – FUGITIVES	То
	11.0409

TRANSMISSION - VENTING 1.0151 To 7.3631 STORAGE 0.5751 GAS DISTRIBUTION (Gg/ 10 ⁶ M ³ OF UTILITY 5.05751 GALES) 25.3510 ALL 25.3510 NATURAL GAS LIQUIDS TRANSPORT (Gg/ 10 ⁶ M ³ CONDENSATE AND PENTANES PLUS) 0.0301 CONDENSATE 2.5372 LIQUEFIED PETROLEUM GAS (Gg/ 10 ⁶ M ³ 0.4307 LIQUEFIED NATURAL GAS (Gg/ 10 ⁶ M ³ CONVENTIONAL OIL PRODUCTION (Gg/ 10 ³ M ³ HEAVY OIL 0.0346 CONVENTIONAL OIL-FUGITIVES (OFFSHORE) 0.0136 0.00346 CONVENTIONAL OIL-FUGITIVES (OFFSHORE) 0.0136 0.014764 OIL PRODUCTION (Gg/ 10 ³ M ³ HEAVY OIL 16.6550 0.0136 CONVENTIONAL OIL-FURITING 18.24000 14.7644 PRODUCTION (Gg/ 10 ³ M ³ HEAVY OIL/COLD BITUMEN - FLARING 25.3562 OIL PRODUCTION (Gg/ 10 ³ M ³ THERMAL BITUMEN PRODUCTION - FLARING 27.4390 THERMAL OIL PRODUCTION - FLARING 27.4390 OIL PRODUCTION (Gg/ 10 ³ M ³ SYNTHETIC CRUDE PRODUCTION FLOARING 27.4390 OIL PRODUCTION (Gg/ 10 ³ M ³ SYNT	SOURCE CATEGORY ACTIVITY	GHG EMISSION FACTOR
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THERMAL OIL PRODUCTION - FUGITIVES4.1690THERMAL OIL PRODUCTION - VENTING80.7200THERMAL OIL PRODUCTION - FLARING27.4390OIL PRODUCTION (Gg/ 10 ³ M ³ SYNTHETIC27.4390CRUDE PRODUCTION FROM OILSANDS)52.9000SYNTHETIC CRUDE (FROM OILSANDS)52.9000SYNTHETIC CRUDE (OIL SHALE)0OIL PRODUCTION (Gg/ 10 ³ M ³ TOTAL OIL201.9000PRODUCTION)50.8800DEFAULT TOTAL - FUGITIVES50.8800DEFAULT TOTAL - FLARING201.9000DEFAULT TOTAL - FLARING34.6428OIL UPGRADING (Gg/ 10 ³ M ³ OIL UPGRADED)34.6428OIL TRANSPORT (Gg/ 10 ³ M ³ OIL TRANSPORTED0.1247	OIL PRODUCTION (Gg/ 10 ³ M ³ THERMAL BITUMEN PRODUCTION)	
THERMAL OIL PRODUCTION - VENTING80.7200THERMAL OIL PRODUCTION - FLARING27.4390OIL PRODUCTION (Gg/ 10 ³ M ³ SYNTHETIC27.4390CRUDE PRODUCTION FROM OILSANDS)SYNTHETIC CRUDE (FROM OILSANDS)SYNTHETIC CRUDE (FROM OILSANDS)52.9000SYNTHETIC CRUDE (OIL SHALE)0OIL PRODUCTION (Gg/ 10 ³ M ³ TOTAL OIL9PRODUCTION)50.8800DEFAULT TOTAL - FUGITIVES50.8800DEFAULT TOTAL - VENTING201.9000DEFAULT TOTAL - FLARING34.6428OIL UPGRADING (Gg/ 10 ³ M ³ OIL UPGRADED)4LLOIL TRANSPORT (Gg/ 10 ³ M ³ OIL TRANSPORTED0.1247	THERMAL OIL PRODUCTION - FUGITIVES	4.1690
THERMAL OIL PRODUCTION – FLARING27.4390OIL PRODUCTION (Gg/ 10 ³ M ³ SYNTHETIC CRUDE PRODUCTION FROM OILSANDS)2000SYNTHETIC CRUDE (FROM OILSANDS)52.9000SYNTHETIC CRUDE (OIL SHALE)0000OIL PRODUCTION (Gg/ 10 ³ M ³ TOTAL OIL PRODUCTION)00000DEFAULT TOTAL – FUGITIVES50.8800DEFAULT TOTAL – VENTING201.9000DEFAULT TOTAL – FLARING34.6428OIL UPGRADING (Gg/ 10 ³ M ³ OIL UPGRADED)34.6428OIL TRANSPORT (Gg/ 10 ³ M ³ OIL TRANSPORTED BY PIPELINE)0.1247	THERMAL OIL PRODUCTION – VENTING	80.7200
OIL PRODUCTION (Gg/ 10 ³ M ³ SYNTHETIC CRUDE PRODUCTION FROM OILSANDS)SYNTHETIC CRUDE (FROM OILSANDS)52.9000SYNTHETIC CRUDE (OIL SHALE)01L PRODUCTION (Gg/ 10 ³ M ³ TOTAL OIL PRODUCTION)DEFAULT TOTAL – FUGITIVES50.8800DEFAULT TOTAL – VENTING201.9000DEFAULT TOTAL – FLARING34.6428OIL UPGRADING (Gg/ 10 ³ M ³ OIL UPGRADED)ALLOIL TRANSPORT (Gg/ 10 ³ M ³ OIL TRANSPORTED BY PIPELINE)0.1247	THERMAL OIL PRODUCTION – FLARING	27.4390
CRUDE PRODUCTION FROM OILSANDS)SYNTHETIC CRUDE (FROM OILSANDS)52.9000SYNTHETIC CRUDE (OIL SHALE)OIL PRODUCTION (Gg/ 10³M³ TOTAL OIL PRODUCTION)DEFAULT TOTAL – FUGITIVES50.8800DEFAULT TOTAL – VENTING201.9000DEFAULT TOTAL – FLARING34.6428OIL UPGRADING (Gg/ 10³M³ OIL UPGRADED)ALLOIL TRANSPORT (Gg/ 10³M³ OIL TRANSPORTED BY PIPELINE)PIPELINES0.1247	OIL PRODUCTION (Gg/ 10 ³ M ³ SYNTHETIC	
SYNTHETIC CRUDE (FROM OILSANDS)52.9000SYNTHETIC CRUDE (OIL SHALE)OIL PRODUCTION (Gg/ 10³M³ TOTAL OIL PRODUCTION)DEFAULT TOTAL – FUGITIVES50.8800DEFAULT TOTAL – VENTING201.9000DEFAULT TOTAL – FLARING34.6428OIL UPGRADING (Gg/ 10³M³ OIL UPGRADED)ALLOIL TRANSPORT (Gg/ 10³M³ OIL TRANSPORTED BY PIPELINE)PIPELINES0.1247	CRUDE PRODUCTION FROM OILSANDS)	
SYNTHETIC CRUDE (OIL SHALE)OIL PRODUCTION (Gg/ 10³M³ TOTAL OIL PRODUCTION)DEFAULT TOTAL – FUGITIVESDEFAULT TOTAL – VENTINGDEFAULT TOTAL – VENTINGDEFAULT TOTAL – FLARINGOIL UPGRADING (Gg/ 10³M³ OIL UPGRADED)ALLOIL TRANSPORT (Gg/ 10³M³ OIL TRANSPORTED BY PIPELINE)PIPELINES0.1247	SYNTHETIC CRUDE (FROM OILSANDS)	52.9000
OIL PRODUCTION (Gg/ 10°M° TOTAL OIL PRODUCTION)DEFAULT TOTAL – FUGITIVESDEFAULT TOTAL – VENTINGDEFAULT TOTAL – VENTINGDEFAULT TOTAL – FLARINGOIL UPGRADING (Gg/ 10°M° OIL UPGRADED)ALLOIL TRANSPORT (Gg/ 10°M° OIL TRANSPORTED BY PIPELINE)PIPELINES0.1247	SYNTHETIC CRUDE (OIL SHALE)	
DEFAULT TOTAL - FUGITIVES50.8800DEFAULT TOTAL - VENTING201.9000DEFAULT TOTAL - FLARING34.6428OIL UPGRADING (Gg/ 10³M³ OIL UPGRADED)	OIL PRODUCTION (Gg/ 10 ³ M ³ TOTAL OIL PRODUCTION)	
DEFAULT TOTAL - VENTING201.9000DEFAULT TOTAL - FLARING34.6428OIL UPGRADING (Gg/ 10³M³ OIL UPGRADED)34.6428ALLImage: Comparison of the second	DEFAULT TOTAL – FUGITIVES	50.8800
DEFAULT TOTAL – FLARING34.6428OIL UPGRADING (Gg/ 10³M³ OIL UPGRADED)4ALL0OIL TRANSPORT (Gg/ 10³M³ OIL TRANSPORTED9BY PIPELINE)0.1247	DEFAULT TOTAL – VENTING	201.9000
OIL UPGRADING (Gg/ 10³M³ OIL UPGRADED)ALLOIL TRANSPORT (Gg/ 10³M³ OIL TRANSPORTEDBY PIPELINE)PIPELINES0.1247	DEFAULT TOTAL – FLARING	34.6428
ALL OIL TRANSPORT (Gg/ 10 ³ M ³ OIL TRANSPORTED BY PIPELINE) 0.1247	OIL UPGRADING (Gg/ 10 ³ M ³ OIL UPGRADED)	
OIL TRANSPORT (Gg/ 103M3 OIL TRANSPORTEDBY PIPELINE)PIPELINES0.1247	ALL	
PIPELINES 0.1247	OIL TRANSPORT (Gg/ 10 ³ M ³ OIL TRANSPORTED BY PIPELINE)	
	PIPELINES	0.1247

SOURCE CATEGORY ACTIVITY	GHG EMISSION FACTOR
OIL TRANSPORT (Gg/ 10 ³ M ³ OIL	
TRANSPORTED BY TANKER TRUCK)	
TANKER TRUCKS AND RAIL CARS - VENTING	0.5773
OIL TRANSPORT (Gg/ 10 ³ M ³ OIL	
TRANSPORTED BY TANKER SHIPS)	
LOADING OFF-SHORE PRODUCTION ON	NI/A
TANKER SHIPS – VENTING	11/7
OIL REFINING (Gg/ 10 ³ M ³ OIL REFINED)	
	0.0598
ALL	То
	0.9430

Table 3

Industrial Process and Product Use (IPPU) Emission Factors

SOURCE CATEGORY ACTIVITY / RAW MATERIAL / PRODUCT	GHG EMISSION FACTOR (CO ₂ e) PER TONNE
CEMENT PRODUCTION (PER TONNE OF CLINKER)	
CEMENT	0.5200
LIME PRODUCTION (PER TONNE OF LIME)	
QUICKLIME/HIGH CALCIUM LIME	0.7500
DOLOMITIC LIME	0.7700
HYDRATED LIME	0.5900
GLASS PRODUCTION (PER TONNE GLASS)	
GLASS PRODUCTION	0.2000
CERAMICS (PER TONNE CARBONATE)	
CALCITE/ARAGONITE (CACO3)	0.4397
MAGNESITE (MGCO3)	0.5220
DOLOMITE (CaMg(CO3)2))	0.4773
SIDERITE (FeCO3)	0.3799
	0.4082
	То
ANKERITE (Ca(Fe,Mg,Mn)(CO3)2)))	0.4757
RHODOCHROSITE (MnCO3)	0.3829
SODIUM CARBONATE/SODA ASH (NA2CO3)	0.4149
OTHER USES OF SODA ASH (PER TONNE CARBONATE)	
CALCITE/ARAGONITE (CACO3)	0.4397
MAGNESITE (MGCO3)	0.5220
DOLOMITE (CaMg(CO3)2))	0.4773
SIDERITE (FeCO3)	0.3799
	0.4082
	То
ANKERITE (Ca(Fe,Mg,Mn)(CO3)2)))	0.4757
RHODOCHROSITE (MnCO3)	0.3829
SODIUM CARBONATE/SODA ASH (NA2CO3)	0.4149
NON METALLURGICAL MAGNESIA PRODUCTION (PER TONNE CARBONATE)	
CALCITE/ARAGONITE (CACO3)	0.4397
MAGNESITE (MGCO3)	0.5220
DOLOMITE (CaMg(CO3)2))	0.4773
SIDERITE (FeCO3)	0.3799
	0.4082
ANKERITE (Ca(Fe,Mg,Mn)(CO3)2)))	То

0.4757 RHODOCHROSITE (MnCO3) 0.3829 SODIUM CARBONATE/SODA ASH (NA2CO3) 0.4149 OTHER (PER TONNE CARBONATE) 0.4397 MAGNESITE (MGCO3) 0.4397 MAGNESITE (GAGGC3) 0.4397 MAGNESITE (GAGGC3) 0.4397 DOLOMITE (CAMGCO3)2) 0.4773 SIDERITE (FaCO3) 0.3799 ANKERITE (Ca(Fe,Mg,Mn)(CO3)2))) 0.4757 RHODOCHROSITE (MnCO3) 0.3429 SODIUM CARBONATE/SODA ASH (NA2CO3) 0.4149 AMMONIA PROPUCTION (PER TONNE NH3) 0.4757 MODERN PLANTS-CONVENTIONAL REFORMING (NATURAL GAS) 1.6640 EXCESS AIR REFORMING (NATURAL GAS) 1.6640 PARTIAL OXIDATION 2.7720 AVERAGE VALUE INATURAL GAS (MIXTURE OF MODERN &OLD) 2.1040 AVERAGE VALUE INATURAL GAS (MIXTURE OF MODERN &OLD) 0.7400 AVERAGE VALUE INATURAL GAS (MIXTURE OF MODERN &OLD) 0.16940 PLANTS WITH NSCR (ALL PROCESSES) 0.5920 PLANTS WITH PROCESS (INTEGRATED OR TAILGAS NO2 0.7400 ATRICA CALD PRODUCTION (PER TONNE ADIPIC ACID) 0.7400 ATMOSPHERIC PRESSURE PLANTS (SOURCE CATEGORY ACTIVITY / RAW MATERIAL / PRODUCT	GHG EMISSION FACTOR (CO ₂ e) PER TONNE
RHODOCHROSITE (MnCO3) 0.3829 SODIUM CARBONATE/SODA ASH (NA2CO3) 0.4149 OTHER (PER TONNE CARBONATE) 0.4149 CALCITE/ARAGONITE (CACO3) 0.4397 MAGNESITE (MGCO3) 0.4397 MAGNESITE (MGCO3) 0.4397 SIDERITE (FeCO3) 0.3798 MAGNESITE (MGCO3) 0.4775 RHODOCHROSITE (MnCO3) 0.4329 SODIUM CARBONATE/SODA ASH (NA2CO3) 0.4149 AMMONIA PRODUCTION (PER TONNE NH3) 0.4149 AMMONIA PRODUCTION (PER TONNE NH3) 0.4149 AMMONIA PRODUCTION (PER TONNE NH3) 1.6840 EXCESS AIR REFORMING (NATURAL GAS) 1.6840 AUTOTHERMAL REFORMING (NATURAL GAS) 1.6840 AVERAGE VALUE (PARTIAL OXIDATION) 2.7720 AVERAGE VALUE (PARTIAL OXIDATION) 3.2730 MITRI CACID PRODUCTION (PER TONNE NITRIC ACID) 0.5920 PLANTS WITH NSCR (ALL PROCESSES) 0.5920 PLANTS WITH NSCR (ALL PROCESSES) 0.5920 PLANTS WITH PROCESS (INTEGRATED OR TAILGAS NO2 0.7400 DESTRUCTION) 0.7400 ATIMOSPHERIC PRESSURE PLANTS (MIGH PRESSURE PLA		0.4757
SODIUM CARBONATE/SODA ASH (NA2CO3) 0.4149 OTHER (PER TONNE CARBONATE)	RHODOCHROSITE (MnCO3)	0.3829
OTHER (PER TONNE CARBONATE) CALCITE/ARAGONITE (CACO3) 0.4397 MAGNESITE (MGCO3) 0.5220 DOLOMITE (CAMg(CO3)2)) 0.4773 SIDERITE (FeCO3) 0.3799 ANKERITE (Ca(Fe,Mg,Mn)(CO3)2))) 0.4757 ANKERITE (Ca(Fe,Mg,Mn)(CO3)2))) 0.4757 RHDDOCHROSITE (MnCO3) 0.3829 SODIUM CARBONATE/SODA ASH (NA2CO3) 0.4349 AMMONIA PRODUCTION (PER TONNE MH3)	SODIUM CARBONATE/SODA ASH (NA2CO3)	0.4149
CALCITE/ARAGONITE (CACO3) 0.4397 MAGNESITE (MGCO3) 0.5220 DOLOMITE (CaMg(CO3)2)) 0.4773 SIDERITE (FeCO3) 0.3799 ANKERITE (Ca(Fe,Mg,Mn)(CO3)2))) 0.4062 To 0.4082 ANKERITE (Ca(Fe,Mg,Mn)(CO3)2))) 0.4757 RHODOCHROSITE (MnCO3) 0.3829 SODIUM CARBONATE/SODA ASH (NA2CO3) 0.4149 AMMONIA PRODUCTION (PER TONNE NH3) 0 MODERN PLANTS-CONVENTIONAL REFORMING (NATURAL 1.6940 EXCESS AIR REFORMING (NATURAL GAS) 1.6940 PARTIAL OXIDATION 2.7720 AVERAGE VALUE (PARTIAL OXIDATION) 2.7120 AVERAGE VALUE (PARTIAL OXIDATION) 3.2730 NITRIC ACID PRODUCTION (PER TONNE NITRIC ACID) 0.7400 PLANTS WITH PROCESS (INTEGRATED OR TAILGAS NO2 0.5920 PLANTS WITH PROCESS (INTEGRATED OR TAILGAS NO2 0.7400 ATMOSPHERIC PRESSURE PLANTS (LOW PRESSURE PLANTS) 1.4800 MEDIUM PRESSURE COMBUSTION PLANTS (MEDIUM 2.0720 HIGH PRESSURE PLANTS (LOW PRESSURE PLANTS) 1.4800 MEDIUM PRESSURE PLANTS (LOW PRESSURE PLANTS) 1.4800 MEDIUM PRESSURE PLANTS (LOW PRESSURE PLANTS) <	OTHER (PER TONNE CARBONATE)	
MAGNESITE (MGC03) 0.5220 DOLOMITE (CaMg(CO3)2)) 0.4773 SIDERITE (FeC03) 0.3799 ANKERITE (Ca(Fe,Mg,Mn)(CO3)2))) 0.4082 To	CALCITE/ARAGONITE (CACO3)	0.4397
DOLOMITE (CaMg(CO3)2)) 0.4773 SIDERITE (FeCO3) 0.3799 ANKERITE (Ca(Fe,Mg,Mn)(CO3)2))) 70 ANKERITE (Ca(Fe,Mg,Mn)(CO3)2))) 0.4757 RHODOCHROSITE (MnCO3) 0.3829 SODIUM CARBONATE/SODA ASH (NA2CO3) 0.4149 AMMONIA PRODUCTION (PER TONNE NH3) 0.4149 AMMONIA PRODUCTION (PER TONNE NH3) 1.6600 AUTOTHERMAL REFORMING (NATURAL GAS) 1.6940 PARTIAL OXIDATION (NATURAL GAS) 1.6940 PARTIAL OXIDATION 2.7720 AVERAGE VALUE NATURAL GAS (MIXTURE OF MODERN &OLD) 2.1040 AVERAGE VALUE NATURAL GAS (MIXTURE OF MODERN &OLD) 2.1040 AVERAGE VALUE (PARTIAL OXIDATION) 3.2730 NITRIC ACID PRODUCTION (PER TONNE NITRIC ACID) 0.7400 PLANTS WITH NSCR (ALL PROCESSES) 0.5920 PLANTS WITH PROCESS (INTEGRATED OR TAILGAS NO2 0.7400 ATMOSPHERIC PRESSURE PLANTS (LOW PRESSURE PLANTS) 1.4800 MEDIUM PRESSURE COMBUSTION PLANTS (MEDIUM PRESSURE) 2.6640 ADIPIC ACID PRODUCTION (PER TONNE ADIPIC ACID 2.720 HIGH PRESSURE PLANTS (LIGH PRESSURE) 2.6640 ADIPIC ACID PRODUCTION (PER TONNE ADIPIC ACID 2.6640 ADIPIC ACID PRODUCTION (PER TONNE ADIPIC ACID 2.6640 CAPROLACTAM, GLYOXAL AND GLYOXYLIC ACID 88.8000 CAPROLACTAM, GLYOXAL AND GLYOXYLIC ACID 7.6640 GLYOXAL PRODUCTION (PER TONNE ADIPIC ACID 2.6640 GLYOXYLIC ACID PRODUCTION (PER TONNE RAW MATERIAL USED) SILICON CARBIDE PRODUCTION (PER TONNE RAW MATERIAL USED) SILICON CARBIDE PRODUCTION (PER TONNE CARBIDE PRODUCED) 2.5346 PETROLEUM COKE USE 1.7000 CARBIDE PRODUCTION (PER TONNE CARBIDE PRODUCED) 2.8868 PETROLEUM COKE USE 1.7000 SILICON CARBIDE PRODUCTION (PER TONNE CARBIDE PRODUCED) 2.88680 CARBIDE PRODUCTION (PER TONNE CARBIDE PRODUCED) 2.88680 CARBIDE PRODUCTION (PER TONNE CARBIDE PRODUCED) 2.88680 PETROL FUNCOME USE 1.9000 SILICON CARBIDE PRODUCTION (PER TONNE CARBIDE PRODUCED) 2.88680 PETROL FUNCOME USE 1.90000 SILICON CARBIDE PRODUCTION (PER TONNE CARBIDE P	MAGNESITE (MGCO3)	0.5220
SIDERITE (FeC03) 0.3799 In In In In ANKERITE (Ca(Fe,Mg,Mn)(CO3)2))) 0.4757 RHODOCHROSITE (MnCO3) 0.3829 SODIUM CARBONATE/SODA ASH (NA2CO3) 0.4149 AMMONIA PRODUCTION (PER TONNE MH3) MODERN PLANTS-CONVENTIONAL REFORMING (NATURAL GAS) 1.6940 EXCESS AIR REFORMING (NATURAL GAS) 1.6940 AUTOTHERMAL REFORMING (NATURAL GAS) 1.6940 PARTIAL OXIDATION 2.7720 AVERAGE VALUE NATURAL GAS (MIXTURE OF MODERN &OLD) 2.1040 AVERAGE VALUE NATURAL GAS (MIXTURE OF MODERN &OLD) 2.1040 AVERAGE VALUE (PARTIAL OXIDATION) 3.2730 MITRIC ACID PRODUCTION (PER TONNE MITRIC ACID) PLANTS WITH NSCR (ALL PROCESS (INTEGRATED OR TAILGAS NO2 DESTRUCTION) 0.5920 PLANTS WITH PROCESS (INTEGRATED OR TAILGAS NO2 0.7400 DESTRUCTION (PER TONNE ADIPIC ACID 0.7200 ATMOSURE PLANTS (LOW PRESSURE PLANTS) 1.4800	DOLOMITE (CaMg(CO3)2))	0.4773
ANKERITE (Ca(Fe,Mg,Mn)(CO3)2))) 10.4082 To 0.4757 RHODOCHROSITE (MnCO3) 0.4757 SODIUM CARBONATE/SODA ASH (NA2CO3) 0.4829 MODERN PLANTS-CONVENTIONAL REFORMING (NATURAL GAS) 1.6940 EXCESS AIR REFORMING (NATURAL GAS) 1.6940 PARTIAL OXIDATION (PER TONNE MH3) 1.6940 VERAGE VALUE NATURAL GAS 1.6940 AVERAGE VALUE NATURAL GAS (MIXTURE OF MODERN &OLD) 2.7720 AVERAGE VALUE (PARTIAL OXIDATION) 2.2730 NITRIC ACID PRODUCTION (PER TONNE NITRIC ACID) 2.1040 PLANTS WITH NSCR (ALL PROCESSES) 0.5920 PLANTS WITH NSCR (ALL PROCESSES) 0.5920 PLANTS WITH NSCR (ALL PROCESSES) 0.4800 MEDIUM PRESSURE COMBUSTION PLANTS (MEDIUM PRESSURE) 0.7400 ATMOSPHERIC PRESSURE PLANTS (LOW PRESSURE PLANTS) 1.4800 MEDIUM PRESSURE COMBUSTION PLANTS (MEDIUM PRESSURE) 2.0720 HIGH PRESSURE COMBUSTION PLANTS (MEDIUM PRESSURE) 2.0720 HIGH PRESSURE PLANTS (HIGH PRESSURE) 2.6640 CAPROLACTAM PRODUCTION (PER TONNE ADIPIC ACID PRODUCTION (PER TONNE ADIPIC ACID PRODUCTION (PER TONNE RAW MATERIAL USED) 2.6640	SIDERITE (FeCO3)	0.3799
To ANKERITE (Ca(Fe,Mg,Mn)(CO3)2))) 0.4757 RHODOCHROSITE (MnCO3) 0.3829 SODIUM CARBONATE/SODA ASH (NA2CO3) 0.4149 AMMONIA PRODUCTION (PER TONNE NH3) 1.6940 EXCESS AIR REFORMING (NATURAL GAS) 1.6940 AUTOTHERMAL REFORMING (NATURAL GAS) 1.6940 AUTOTHERMAL REFORMING (NATURAL GAS) 1.6940 PARTIAL OXIDATION 2.7720 AVERAGE VALUE NATURAL GAS (MIXTURE OF MODERN &OLD) 2.1040 AVERAGE VALUE (PARTIAL OXIDATION) 3.2730 MITRIC ACID PRODUCTION (PER TONNE NITRIC ACID) 1.6940 PLANTS WITH NSCR (ALL PROCESSES) 0.5920 PLANTS WITH PROCESS (INTEGRATED OR TAILGAS NO2 0.7400 DESTRUCTION) 0.7400 ATMOSPHERIC PRESSURE PLANTS (LOW PRESSURE PLANTS) 1.4800 MEDIUM PRESSURE COMBUSTION PLANTS (MEDIUM 2.0720 PIGHT ACID PRODUCTION (PER TONNE ALPIPIC ACID 2.0720 NITRIC ACID PRODUCTION (PER TONNE ALPIPIC ACID 2.6640 GLYOXAL AND GLYOXYLIC ACID 2.6640 GLYOXAL PRODUCTION (ADIPIC ACID) 88.8000 CAPROLACTAM PRODUCTION (RASCHIG) 2.6640		0.4082
ANKERITE (Ca(Fe,Mg,Mn)(CO3)2))) 0.4757 RHODOCHROSITE (MnCO3) 0.3829 SODIUM CARBONATE/SODA ASH (NA2CO3) 0.4149 AMMONIA PRODUCTION (PER TONNE NH3) MODERN PLANTS-CONVENTIONAL REFORMING (NATURAL GAS) 1.6940 EXCESS AIR REFORMING (NATURAL GAS) 1.6940 PARTIAL OXIDATION 2.7720 AVERAGE VALUE NATURAL GAS (MIXTURE OF MODERN &0LD) 2.1040 AVERAGE VALUE NATURAL GAS (MIXTURE OF MODERN &0LD) 2.1040 AVERAGE VALUE (PARTIAL OXIDATION) 3.2730 MITRIC ACID PRODUCTION (PER TONNE NITRIC ACID) PLANTS WITH NSCR (ALL PROCESSES) 0.5920 PLANTS WITH NSCR (ALL PROCESSES) 0.5920 DESTRUCTION) 0.7400 ATMOSPHERIC PRESSURE PLANTS (LOW PRESSURE PLANTS) 1.4800 MEDIUM PRESSURE COMBUSTION PLANTS (MEDIUM PRESSURE) 2.0720 HIGH PRESSURE PLANTS (LOW PRESSURE PLANTS) 1.4800 ADIPIC ACID PRODUCTION (PER TONNE ADIPIC ACID MITRIC ACID PRODUCTION (PER TONNE ADIPIC ACID CAPROLACTAM GLYOXAL AND GLYOXYLIC ACID PRODUCTION (PER TONNE PRODUCED) CAPROLACTAM PRODUCTION (RASCHIG) 2.6640 GLYOXAL PRODUCTION (PER TONNE RAW MATERIAL USED) SILICON CARBIDE PRODUCTION (PER TONNE RAW MATERIAL USED) CARBIDE PRODUCTION (PER TONNE RAW MATERIAL USED) SILICON CARBIDE PRODUCTION (CARBIDE PRODUCED) CARBIDE PRODUCTION (PER TONNE CARBIDE PRODUCED) CARBIDE PRODUCTION (PER TONNE CARBIDE PRODUCED) SILICON CARBIDE PRODUCTION (CARBIDE PRODUCED) CARBIDE PRODUCTION (PER TONNE CARBIDE PRODUCED) SILICON CARBIDE PRODUCTION (CARBIDE PRODUCED)		То
RHODOCHROSITE (MnCO3) 0.3829 SODIUM CARBONATE/SODA ASH (NA2CO3) 0.4149 AMMONIA PRODUCTION (PER TONNE RH3)	ANKERITE (Ca(Fe,Mg,Mn)(CO3)2)))	0.4757
SODIUM CARBONATE/SODA ASH (NA2CO3) 0.4149 AMMONIA PRODUCTION (PER TONNE NH3)	RHODOCHROSITE (MnCO3)	0.3829
AMMONIA PRODUCTION (PER TONNE NH3) MODERN PLANTS-CONVENTIONAL REFORMING (NATURAL GAS) 1.6940 EXCESS AIR REFORMING (NATURAL GAS) 1.6660 AUTOTHERMAL REFORMING (NATURAL GAS) 1.6940 PARTIAL OXIDATION 2.7720 AVERAGE VALUE NATURAL GAS (MIXTURE OF MODERN &OLD) 2.1040 AVERAGE VALUE (PARTIAL OXIDATION) 3.2730 NITRIC ACID PRODUCTION (PER TONNE NITRIC ACID) PLANTS WITH NSCR (ALL PROCESSES) 0.5920 PLANTS WITH PROCESS (INTEGRATED OR TAILGAS NO2 DESTRUCTION) 0.7400 ATMOSPHERIC PRESSURE PLANTS (LOW PRESSURE PLANTS) 1.4800 MEDIUM PRESSURE COMBUSTION PLANTS (MEDIUM PRESSURE) 2.6640 ADIPIC ACID PRODUCTION (PER TONNE ADIPIC ACID UNCONTROLLED) 2.6640 ADIPIC ACID OXIDATION (ADIPIC ACID) 2.6640 CAPROLACTAM, GLYOXAL AND GLYOXYLIC ACID PRODUCTION (PER TONNE ADIPIC ACID CAPROLACTAM, GLYOXAL AND GLYOXYLIC ACID PRODUCTION (PER TONNE RAW MATERIAL USED) 2.6640 GLYOXAL PRODUCTION (RASCHIG) 2.6640 CAPROLACTAM, BRODUCTION (RASCHIG) 2.6640 CAPROLACTAM, BRODUCTION (RASCHIG) 2.6640 CAPROLACTAM PRODUCTION (RASCHIG) 2.6640 CAPROLACTAM DELYOXYLIC ACID 2.5346 PETROLEUM COKE USE 1.7000 CARBIDE PRODUCTION (PER TONNE RAW MATERIAL USED) SILICON CARBIDE PRODUCTION (CARBIDE PRODUCED) 2.8868 PETROLEUM COKE USE 1.7000	SODIUM CARBONATE/SODA ASH (NA2CO3)	0.4149
MODERN PLANTS-CONVENTIONAL REFORMING (NATURAL 1.6940 EXCESS AIR REFORMING (NATURAL GAS) 1.6940 AUTOTHERMAL REFORMING (NATURAL GAS) 1.6940 PARTIAL OXIDATION 2.7720 AVERAGE VALUE NATURAL GAS (MIXTURE OF MODERN &0LD) 2.1040 AVERAGE VALUE (PARTIAL OXIDATION) 3.2730 MITRIC ACID PRODUCTION (PER TONNE NITRIC ACID) 1.9940 PLANTS WITH NSCR (ALL PROCESSES) 0.5920 PLANTS WITH NSCR (ALL PROCESSES) 0.5920 PLANTS WITH PROCESS (INTEGRATED OR TAILGAS NO2 0.7400 DESTRUCTION) 0.7400 ATMOSPHERIC PRESSURE PLANTS (LOW PRESSURE PLANTS) 1.4800 MEDIUM PRESSURE) 2.0720 HIGH PRESSURE PLANTS (HIGH PRESSURE) 2.0720 HIGH PRESSURE PLANTS (HIGH PRESSURE) 2.6640 OKOCONTROLLED) 88.8000 CAPROLACTAM,GL YOXAL AND GL YOXYLIC ACID 0.0296 GLYOXAL PRODUCTION (PER TONNE ADIPIC ACID 0.0296 GLYOXAL PRODUCTION (RASCHIG) 2.6640 GLYOXAL PRODUCTION (PER TONNE RAW MATERIAL USED) 0.0296 GLYOXAL PRODUCTION (PER TONNE RAW MATERIAL USED) 0.0296 SILICON CARBIDE PRODUCTION 2.5346	AMMONIA PRODUCTION (PER TONNE NH3)	
EXCESS AIR REFORMING (NATURAL GAS) 1.6660 AUTOTHERMAL REFORMING (NATURAL GAS) 1.6940 PARTIAL OXIDATION 2.7720 AVERAGE VALUE NATURAL GAS (MIXTURE OF MODERN &OLD) 2.1040 AVERAGE VALUE (PARTIAL OXIDATION) 3.2730 <i>NITRIC ACID PRODUCTION (PER TONNE NITRIC ACID)</i> 1 PLANTS WITH NSCR (ALL PROCESSES) 0.5920 PLANTS WITH PROCESS (INTEGRATED OR TAILGAS NO2 0.7400 DESTRUCTION) 0.7400 ATMOSPHERIC PRESSURE PLANTS (LOW PRESSURE PLANTS) 1.4800 MEDIUM PRESSURE COMBUSTION PLANTS (MEDIUM PRESSURE) PRESSURE) 2.0720 HIGH PRESSURE PLANTS (HIGH PRESSURE) 2.6640 ADIPIC ACID PRODUCTION (PER TONNE ADIPIC ACID 88.8000 CAPROLACTAM GLYOXAL AND GLYOXYLIC ACID 88.8000 PRODUCTION (PER TONNE ADIPIC ACID 0.0296 GLYOXYLIC ACID PRODUCTION (RASCHIG) 2.6640 GLYOXYLIC ACID PRODUCTION (RASCHIG) 0.0296 GLYOXYLIC ACID PRODUCTION (RASCHIG) 0.0296 GLYOXYLIC ACID PRODUCTION (PER TONNE RAW MATERIAL USED) 0.0296 SILICON CARBIDE PRODUCTION (PER TONNE CARBIDE PRODUCED) 2.5346 PETROLEUM COKE USE 1.7000	MODERN PLANTS-CONVENTIONAL REFORMING (NATURAL GAS)	1.6940
AUTOTHERMAL REFORMING (NATURAL GAS) 1.6940 PARTIAL OXIDATION 2.7720 AVERAGE VALUE NATURAL GAS (MIXTURE OF MODERN &OLD) 2.1040 AVERAGE VALUE (PARTIAL OXIDATION) 3.2730 NITRIC ACID PRODUCTION (PER TONNE NITRIC ACID) PLANTS WITH NSCR (ALL PROCESSES) 0.5920 PLANTS WITH PROCESS (INTEGRATED OR TAILGAS NO2 DESTRUCTION) 0.7400 ATMOSPHERIC PRESSURE PLANTS (LOW PRESSURE PLANTS) 1.4800 MEDIUM PRESSURE COMBUSTION PLANTS (MEDIUM PRESSURE) 2.0720 HIGH PRESSURE PLANTS (HIGH PRESSURE) 2.6640 ADIPIC ACID PRODUCTION (PER TONNE ADIPIC ACID UNCONTROLLED) NITRIC ACID OXIDATION (ADIPIC ACID) 88.8000 CAPROLACTAM, GLYOXAL AND GLYOXYLIC ACID PRODUCTION (PER TONNE ADIPIC ACID CAPROLACTAM, PRODUCTION (RASCHIG) 2.6640 GLYOXAL PRODUCTION (RASCHIG) 2.6640 GLYOXAL PRODUCTION (PER TONNE RAW MATERIAL USED) SILICON CARBIDE PRODUCTION (PER TONNE RAW MATERIAL USED) SILICON CARBIDE PRODUCTION (CARBIDE PRODUCED) CARBIDE PRODUCTION (PER TONNE CARBIDE PRODUCED) CARBIDE PRODUCTION (CARBIDE PRODUCED) CARBIDE PRODUCTION (CARBIDE PRODUCED) SILICON CARBIDE PRODUCTION (CARBIDE PRODUCED) CARBIDE PRODUCTION (CARBIDE PRODUCED) CARBIDE PRODUCTION (CARBIDE PRODUCED) CARB	EXCESS AIR REFORMING (NATURAL GAS)	1.6660
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NITRIC ACID PRODUCTION (PER TONNE NITRIC ACID) PLANTS WITH NSCR (ALL PROCESSES) 0.5920 PLANTS WITH PROCESS (INTEGRATED OR TAILGAS NO2 0.7400 DESTRUCTION) 0.7400 ATMOSPHERIC PRESSURE PLANTS (LOW PRESSURE PLANTS) 1.4800 MEDIUM PRESSURE COMBUSTION PLANTS (MEDIUM PRESSURE) 2.0720 HIGH PRESSURE PLANTS (HIGH PRESSURE) 2.6640 ADIPIC ACID PRODUCTION (PER TONNE ADIPIC ACID UNCONTROLLED) 88.8000 NITRIC ACID OXIDATION (ADIPIC ACID) 88.8000 CAPROLACTAM,GLYOXAL AND GLYOXYLIC ACID PRODUCTION (PER TONNE PRODUCED) 88.8000 CAPROLACTAM, PRODUCTION (RASCHIG) 2.6640 GLYOXAL PRODUCTION (RASCHIG) 0.0296 GLYOXYLIC ACID PRODUCTION (RASCHIG) 0.0296 GLYOXYLIC ACID PRODUCTION (PER TONNE RAW MATERIAL USED) 0.0296 SILICON CARBIDE PRODUCTION 2.5346 PETROLEUM COKE USE 1.7000 CARBIDE PRODUCTION (PER TONNE CARBIDE PRODUCED) 2.8868 PETROL FUNC CARBIDE PRODUCTION (CARBIDE PRODUCED) 2.8868	AVERAGE VALUE (PARTIAL OXIDATION)	3.2730
PLANTS WITH NSCR (ALL PROCESSES) 0.5920 PLANTS WITH PROCESS (INTEGRATED OR TAILGAS NO2 0.7400 DESTRUCTION) 0.7400 ATMOSPHERIC PRESSURE PLANTS (LOW PRESSURE PLANTS) 1.4800 MEDIUM PRESSURE COMBUSTION PLANTS (MEDIUM 2.0720 PRESSURE) 2.0720 HIGH PRESSURE PLANTS (HIGH PRESSURE) 2.6640 ADIPIC ACID PRODUCTION (PER TONNE ADIPIC ACID 0.7400 UNCONTROLLED) 88.8000 CAPROLACTAM,GLYOXAL AND GLYOXYLIC ACID 88.8000 CAPROLACTAM,PRODUCTION (PER TONNE ADIPIC ACID 88.8000 CAPROLACTAM,PRODUCTION (ADIPIC ACID) 88.8000 CAPROLACTAM, GLYOXAL AND GLYOXYLIC ACID 88.8000 CAPROLACTAM PRODUCTION (RASCHIG) 2.6640 GLYOXAL PRODUCTION (RASCHIG) 0.0296 GLYOXYLIC ACID PRODUCTION 0.0296 GLYOXYLIC ACID PRODUCTION 0.0059 CARBIDE PRODUCTION (PER TONNE RAW MATERIAL USED) 2.5346 PETROLEUM COKE USE 1.7000 SILICON CARBIDE PRODUCTION (CARBIDE PRODUCED) 2.8868 PETROL EUM COKE USE 1.7000	NITRIC ACID PRODUCTION (PER TONNE NITRIC ACID)	
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HIGH PRESSURE PLANTS (HIGH PRESSURE) 2.6640 ADIPIC ACID PRODUCTION (PER TONNE ADIPIC ACID UNCONTROLLED) 88.8000 NITRIC ACID OXIDATION (ADIPIC ACID) 88.8000 CAPROLACTAM, GL YOXAL AND GL YOXYLIC ACID PRODUCTION (PER TONNE PRODUCED) 2.6640 CAPROLACTAM PRODUCTION (RASCHIG) 2.6640 GLYOXAL PRODUCTION (RASCHIG) 0.0296 GLYOXYLIC ACID PRODUCTION 0.0059 CARBIDE PRODUCTION (PER TONNE RAW MATERIAL USED) 2.5346 SILICON CARBIDE PRODUCTION 2.5346 PETROLEUM COKE USE 1.7000 SILICON CARBIDE PRODUCTION (CARBIDE PRODUCED) 2.8868 PETROL FUM COKE USE 1.0900	MEDIUM PRESSURE COMBUSTION PLANTS (MEDIUM PRESSURE)	2.0720
ADIPIC ACID PRODUCTION (PER TONNE ADIPIC ACID UNCONTROLLED) NITRIC ACID OXIDATION (ADIPIC ACID) PRODUCTION (PER TONNE PRODUCED) CAPROLACTAM,GLYOXAL AND GLYOXYLIC ACID PRODUCTION (PER TONNE PRODUCED) CAPROLACTAM PRODUCTION (RASCHIG) GLYOXAL PRODUCTION (RASCHIG) GLYOXYLIC ACID PRODUCTION (RASCHIG) O.0296 GLYOXYLIC ACID PRODUCTION O.0059 CARBIDE PRODUCTION (PER TONNE RAW MATERIAL USED) SILICON CARBIDE PRODUCTION CARBIDE PRODUCTION (PER TONNE CARBIDE PRODUCED) SILICON CARBIDE PRODUCTION (CARBIDE PRODUCED) SILICON CARBIDE PRODUCTION (CARBIDE PRODUCED) 2.8868 PETROL EUM COKE USE 1 0900	HIGH PRESSURE PLANTS (HIGH PRESSURE)	2.6640
ADIPIC ACID PRODUCTION (PER TONNE ADIPIC ACID UNCONTROLLED) NITRIC ACID OXIDATION (ADIPIC ACID) PRODUCTION (PER TONNE PRODUCED) CAPROLACTAM,GLYOXAL AND GLYOXYLIC ACID PRODUCTION (PER TONNE PRODUCED) CAPROLACTAM PRODUCTION (RASCHIG) GLYOXAL PRODUCTION (RASCHIG) GLYOXYLIC ACID PRODUCTION (RASCHIG) O.0059 CARBIDE PRODUCTION (PER TONNE RAW MATERIAL USED) SILICON CARBIDE PRODUCTION PETROLEUM COKE USE CARBIDE PRODUCTION (PER TONNE CARBIDE PRODUCED) SILICON CARBIDE PRODUCTION (CARBIDE PRODUCED) SILICON CARBIDE PRODUCTION (CARBIDE PRODUCED) 2.8868 PETROLEUM COKE USE 1 0900		
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CAPROLACTAM PRODUCTION (RASCHIG)2.6640GLYOXAL PRODUCTION0.0296GLYOXYLIC ACID PRODUCTION0.0059CARBIDE PRODUCTION (PER TONNE RAW MATERIAL USED)2.5346SILICON CARBIDE PRODUCTION2.5346PETROLEUM COKE USE1.7000CARBIDE PRODUCTION (PER TONNE CARBIDE PRODUCED)SILICON CARBIDE PRODUCTION (CARBIDE PRODUCED)SILICON CARBIDE PRODUCTION (CARBIDE PRODUCED)2.8868PETROL FUM COKE USE1.0900	CAPROLACTAM,GLYOXAL AND GLYOXYLIC ACID PRODUCTION (PER TONNE PRODUCED)	
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GLYOXYLIC ACID PRODUCTION0.0059CARBIDE PRODUCTION (PER TONNE RAW MATERIAL USED)2.5346SILICON CARBIDE PRODUCTION2.5346PETROLEUM COKE USE1.7000CARBIDE PRODUCTION (PER TONNE CARBIDE PRODUCED)SILICON CARBIDE PRODUCTION (CARBIDE PRODUCED)2.8868PETROL EUM COKE USE1.0900	GLYOXAL PRODUCTION	0.0296
CARBIDE PRODUCTION (PER TONNE RAW MATERIAL USED) SILICON CARBIDE PRODUCTION 2.5346 PETROLEUM COKE USE 1.7000 CARBIDE PRODUCTION (PER TONNE CARBIDE PRODUCED) SILICON CARBIDE PRODUCTION (CARBIDE PRODUCED) 2.8868 PETROL FUM COKE USE 1.0900	GLYOXYLIC ACID PRODUCTION	0.0059
SILICON CARBIDE PRODUCTION 2.5346 PETROLEUM COKE USE 1.7000 CARBIDE PRODUCTION (PER TONNE CARBIDE PRODUCED) SILICON CARBIDE PRODUCTION (CARBIDE PRODUCED) 2.8868 PETROL FUM COKE USE 1.0900	CARBIDE PRODUCTION (PER TONNE RAW MATERIAL USED)	
PETROLEUM COKE USE 1.7000 CARBIDE PRODUCTION (PER TONNE CARBIDE PRODUCED) SILICON CARBIDE PRODUCTION (CARBIDE PRODUCED) 2.8868 PETROL FUM COKE USE 1.0900	SILICON CARBIDE PRODUCTION	2.5346
CARBIDE PRODUCTION (PER TONNE CARBIDE PRODUCED) SILICON CARBIDE PRODUCTION (CARBIDE PRODUCED) 2.8868 PETROL FUM COKE USE 1 0900	PETROLEUM COKE USE	1.7000
SILICON CARBIDE PRODUCTION (CARBIDE PRODUCED) 2.8868 PETROL FUM COKE USE 1.0900	CARBIDE PRODUCTION (PER TONNE CARBIDE PRODUCED)	
PETROLEUM COKE USE 1 0900		2 8868
	PETROLEUM COKE USE	1 0900

SOURCE CATEGORY ACTIVITY / RAW MATERIAL / PRODUCT	GHG EMISSION FACTOR (CO₂e) PER TONNE
USE OF PRODUCT	1.1000
TITANIUM DIOXIDE PRODUCTION (PER TONNE PRODUCT)	
TITANIUM SI AG	
	1 4300
	1.4300
	1.3400
SODA ASH PRODUCTION (PER TONNE OF SODA ASH OR TRONA)	
NATURAL SODA ASH OUTPUT	0.1380
NATURAL SODA ASH (TRONA USED)	0.0970
PETROCHEMICAL AND CARBON BLACK PRODUCTION	
METHANOL PRODUCTION (PER TONNE METHANOL	
PRODUCED)	
CONVENTIONAL STEAM REFORMING WITHOUT PRIMARY	0.7000
CONVENTIONAL STEAM REFORMING WITH PRIMARY	0.7229
REFORMER (NATURAL GAS FEEDSTOCK)	0.5499
CONVENTIONAL STEAM REFORMING LURGI CONVENTIONAL	
PROCESS (NATURAL GAS FEEDSTOCK)	0.4379
CONVENTIONAL STEAM REFORMING LURGI CONVENTIONAL	0.3100
CONVENTIONAL STEAM REFORMING LURGI LOW PRESSURE	0.3199
PROCESS (NATURAL GAS FEEDSTOCK)	0.3199
CONVENTIONAL STEAM REFORMING LURGI COMBINED	
PROCESS (NATURAL GAS FEEDSTOCK)	0.4489
PROCESS (NATURAL GAS FEEDSTOCK)	0.3629
PARTIAL OXIDATION PROCESS (OIL FEEDSTOCK)	1.4289
PARTIAL OXIDATION PROCESS (COAL FEEDSTOCK)	5.3379
PARTIAL OXIDATION PROCESS (LIGNITE FEEDSTOCK)	5.0729
CONVENTIONAL STEAM REFORMING WITH INTEGRATED	4.0700
AMMONIA PRODUCTION (NATURAL GAS FEEDSTOCK)	1.0729
ETHYLENE PRODUCED)	
ETHYLENE (TOTAL PRÓCESS & ENERGY FEEDSTOCK USE) –	
	1.7990
GAS OIL	2.3590
ETHYLENE (TOTAL PROCESS & ENERGY FEEDSTOCK USE) –	1 0880
ETHYLENE (TOTAL PROCESS & ENERGY FEEDSTOCK USE) –	1.0000
	1.1090
BUTANE	1.1390
ETHYLENE (TOTAL PROCESS & ENERGY FEEDSTOCK USE) – OTHER	1 7990
ETHYLENE (PROCESS FEEDSTOCK USF) - NAPHTHA	1 7990
ETHYLENE (PROCESS FEEDSTOCK USE) - GAS OU	2 2300
	0.8080
ETHYLENE (PROCESS FEEDSTOCK USE) - PROPANE	1 1000
	1.1090
LEINILENE (PROCESS FEEDSIOCK USE) - BUIANE	1.1390

SOURCE CATEGORY ACTIVITY / RAW MATERIAL / PRODUCT	GHG EMISSION FACTOR (CO ₂ e) PER TONNE
ETHYLENE (PROCESS FEEDSTOCK USE) -OTHER	1.7990
ETHYLENE (SUPPLEMENTAL FUEL-ENERGY FEEDSTOCK) USE	0.1890
ETHYLENE (SUPPLEMENTAL FUEL-ENERGY FEEDSTOCK) USE	0.3280
ETHYLENE DICHLORIDE AND VINYL CHLORIDE MONOMER (PER TONNE EDC PRODUCED OR TONNE VCM PRODUCT PRODUCED)	0.3200
DIRECT CHORINATION PROCESS (EDC)	0.1915
OXYCHLORINATION PROCESS (EDC)	0.2025
BALANCED PROCESS (DEFAULT) – EDC	0.1965
ETHYLENE DICHLORIDE AND VINYL CHLORIDE MONOMER (PER TONNE VCM PRODUCED OR TONNE VCM PRODUCT PRODUCED)	
DIRECT CHORINATION-PROCESS (VCM)	0.2865
OXYCHLORINATION PROCESS (VCM)	0.3025
BALANCED PROCESS (DEFAULT) –VCM	0.2945
ETHYLENE OXIDE (PER TONNE ETHYLENE OXIDE PRODUCED)	
AIR PROCESS (DEFAULT) - CATALYST DEFAULT (70)	0.9042
AIR PROCESS (DEFAULT) - CATALYST (75)	0.7042
AIR PROCESS (DEFAULT) - CATALYST (80)	0.5412
OXYGEN PROCESS (DEFAULT) - CATALYST DEFAULT (75)	0.7042
OXYGEN PROCESS - CATALYST (80)	0.5412
OXYGEN PROCESS - CATALYST (85)	0.3912
ACRYLONITRILE (PER TONNE ACRYLONITRILE PRODUCED)	
DIRECT AMMOXIDATION WITH SECONDARY PRODUCTS BURNED FOR ENERGY RECOVERY OR FLARED (DEFAULT)	1.0041
DIRECT AMMOXIDATION WITH ACETONITRILE BURNED FOR ENERGY RECOVERY OR FLARED	0.8341
DIRECT AMMOXIDATION WITH ACETONITRILE & HYDROGEN CYANIDE RECOVERED AS PRODUCT	0.7941
CARBON BLACK PRODUCTION (PER TONNE CARBON BLACK PRODUCED)	
FURNACE BLACK PROCESS (DEFAULT)	2.6214
THERMAL BLACK PROCESS	5.2514
ACETYLENE BLACK PROCESS	0.7814
IRON AND STEEL PRODUCTION (PER TONNE PRODUCT PRODUCED)	
SINTER PRODUCTION	0.3416
COKE OVEN	0.5623
PIG IRON PRODUCTION	1.3500
DIRECT REDUCED IRON (DRI) PRODUCTION	1.5250
PELLET PRODUCTION	0.0300
BASIC OXYGEN FURNACE	1.4600
ELECTRIC ARC FURNACE	1.1000
OPEN HEARTH FURNACE	1.7200
GLOBAL AVERAGE	1.0600
FERROALLOYS PRODUCTION (PER TONNE PRODUCTION)	

SOURCE CATEGORY ACTIVITY / RAW MATERIAL / PRODUCT	GHG EMISSION FACTOR (CO ₂ e) PER TONNE
FERROSILICON (45%) SI	2.5000
FERROSILICON (65%) SI	3.6230
FERROSILICON (75%) SI	4.0230
FERROSILICON (90%) SI	4.8253
FERROMANGANESE (7% C)	1.3000
FERROMANGANESE (1% C)	1.5000
SILICOMANGANESE	1.4000
SILICON METAL	5.0276
FERROCHROMIUM (STAND ALONE)	1.3000
FERROCHROMIUM (WITH SINTER PLANT)	1.6000
ALUMINIUM PRODUCTION (PER TONNE ALUMINIUM PRODUCED)	
PREBAKE	1.6000
SODERBERG	1.7000
CWPB	2.7560
SWPB	13.8800
VSS	5.0360
HSS	2.6370
MAGNESIUM PRODUCTION (PER TONNE MAGNESIUM PRODUCED)	
DOLOMITE	27.3300
MAGNESITE	25.0300
LEAD PRODUCTION (PER TONNE PRODUCT)	
IMPERIAL SMELT FURNACE (ISF) PRODUCTION	0.5900
DIRECT SMELTING PRODUCTION	0.2500
TREATMENT OF SECONDARY RAW MATERIALS	0.2000
DEFAULT EF	0.5200
ZINC PRODUCTION (PER TONNE PRODUCT)	
WAELZ KILN	3.6600
PYROMETALLURGICAL	0.4300
DEFAULT EF	1.7200

SCHEDULE 2

Sector	Basic tax-free allowance for fossil fuel combustion emissions %	Basic tax- free allowance for process emissions %	Fugitive emissions allowance %	Trade exposure allowance %	Z-factor allowance %	Carbon budget allowance %	Offsets allowance %	Maximum total allowances %
Fuel								
combustio n								
Energy								
Industries								
Main	60	0	0	0	0	5	10	75
activity								
electricity								
and neat								
Petroleum	60	0	0	10	5	5	10	90
refining	00	Ũ	Ũ	10	Ũ	Ũ	10	00
Manufactur	60	0	0	10	5	5	10	90
e of solid								
fuels &								
other								
industries								
Manufactur	60	0	0	10	5	5	10	90
ing								
industries								
and								
Constructio								
Iron and	60	0	0	10	5	5	10	90
steel	00	Ũ	Ũ	10	Ũ	Ũ	10	00
Non-	60	0	0	10	5	5	10	90
ferrous								
metals								
Chemicals	60	0	0	10	5	5	10	90
Bula	00	ő	0	10	5		10	00
Pulp,	60	0	0	10	5	Э	10	90
paper and								
Food	60	0	0	10	5	5	10	90
processing								
; beverage;								
tobacco	60	0	0	10	F	F	10	00
metallic	00	0	0	10	5	5	10	90
minerals								
Transport	60	0	0	10	5	5	10	90
Equipment								
Machinery	60	0	0	10	5	5	10	90
Mining	60	0	0	10	5	5	10	90
(excluding								
fuels) and								
Wood and	60	0	0	10	5	5	10	90
wood						, i i i i i i i i i i i i i i i i i i i		
products								
Constructio	60	0	0	10	5	5	10	90
n T				10				
I extiles	60	0	0	10	5	5	10	90
Non-	60	0	0	10	5	5	10	۹N
		, v	J J			5		

Sector	Basic tax-free allowance for fossil fuel combustion emissions %	Basic tax- free allowance for process emissions %	Fugitive emissions allowance %	Trade exposure allowance %	Z-factor allowance %	Carbon budget allowance %	Offsets allowance %	Maximum total allowances %
specified								
Industry Transport								
Civil	60	0	0	10	5	5	10	90
aviation			0	40			40	00
Road transport	60	0	0	10	5	5	10	90
Railways	60	0	0	10	5	5	10	90
Water- borne navigation	60	0	0	10	5	5	10	90
Other transport	60	0	0	10	5	5	10	90
Other								
Commerci al;	60	0	0	10	5	5	10	90
Residential	100	0	0	0	0	0	0	100
Agriculture; forestry; fishing/Fish farms	60	0	0	10	5	5	10	90
Non-								
Stationary	60	0	0	10	5	5	10	90
Mobile	60	0	0	10	5	5	10	90
Multilateral	60	0	0	10	5	5	10	90
Fugitive emissions from fuels								
Solid								
Coal mining and handling	60	0	10	10	5	5	5	95
Oil and natural gas	60	0	10	10	5	5	5	95
Oil								
Venting	60	0	10	10	5	5	5	95
Flaring	60	0	10	10	5	5	5	95
All Other	60	0	10	10	5	5	5	95
Natural Gas	60	0	10	10	5	5	5	95
Other fugitive emissions from Energy Productio n								
Coal-to- liquids processes	60	0	10	10	5	5	5	95

Sector	Basic tax-free allowance for fossil fuel combustion emissions %	Basic tax- free allowance for process emissions %	Fugitive emissions allowance %	Trade exposure allowance %	Z-factor allowance %	Carbon budget allowance %	Offsets allowance %	Maximum total allowances %
Gas-to- liquids processes	60	0	10	10	5	5	5	95
Charcoal Production processes	60	0	10	10	5	5	5	95
Coke production	60	0	10	10	5	5	5	95
Industrial processes and product use								
Mineral								
Cement	0	70	0	10	5	5	5	95
Lime Production	0	70	0	10	5	5	5	95
Glass	0	70	0	10	5	5	5	95
Other process uses of	0	60	0	10	5	5	10	90
Chemical industry								
Ammonia	0	70	0	10	5	5	5	95
Nitric acid production	0	70	0	10	5	5	5	95
Adipic acid production	0	70	0	10	5	5	5	95
Caprolacta m, Glyoxal and Glyoxylic acid	0	70	0	10	5	5	5	95
production Carbide	0	70	0	10	5	5	5	95
production Titanium	0	70	0	10	5	5	5	95
Dioxide production								
Soda ash production	0	70	0	10	5	5	5	95
Petrochemi cal and Carbon Black production	0	70	0	10	5	5	5	95
Fluoroche mical Production	0	70	0	10	5	5	5	95
Industry								
Iron and steel production	0	70	0	10	5	5	5	95

Sector	Basic tax-free allowance for fossil fuel combustion emissions %	Basic tax- free allowance for process emissions	Fugitive emissions allowance %	Trade exposure allowance %	Z-factor allowance %	Carbon budget allowance %	Offsets allowance %	Maximum total allowances %
Ferroalloys	0	70	0	10	5	5	5	95
production						_		
Aluminium	0	60	0	10	5	5	10	90
Magnesiu m production	0	60	0	10	5	5	10	90
Lead	0	60	0	10	5	5	10	90
Zinc	0	60	0	10	5	5	10	90
Non-	0	60		10	5	5	10	90
energy use of fuels and solvent use								
Electronics Industry	0	60		10	5	5	10	90
Product uses as substitutes for ozone depleting	0	60		10	5	5	10	90
substances Refrigerati on and air conditionin	0	60	0	10	5	5	10	90
g Foam blowing	0	60	0	10	5	5	10	90
Fire	0	60	0	10	5	5	10	90
Aerosols	0	60	0	10	5	5	10	90
Solvents	0	60	0	10	5	5	10	90
Other product manufactur e and use	0	60	0	10	5	5	10	90
Electrical equipment	0	60	0	10	5	5	10	90
SF6 and PFCs from other product uses	0	60	0	10	5	5	10	90
N2O from product uses	0	60	0	10	5	5	10	90
e, forestry and land use								
Livestock								
Enteric fermentatio n	100	0	0	0	0	0	0	100
Manure	100	0	0	0	0	0	0	100

Sector	Basic tax-free allowance for fossil fuel combustion emissions %	Basic tax- free allowance for process emissions %	Fugitive emissions allowance %	Trade exposure allowance %	Z-factor allowance %	Carbon budget allowance %	Offsets allowance %	Maximum total allowances %
manageme								
Land								
Forest land	100	0	0	0	0	0	0	100
Cropland	100	0	0	0	0	0	0	100
Grassland	100	0	0	0	0	0		100
Wetlands	100	0	0	0	0	0	0	100
Settlement s	100	0	0	0	0	0	0	100
Aggregate sources and non- CO ₂ GHG emissions from biomass	100	0	0	0	0	0	0	100
burning	100	0	0	0	0	0	0	100
Linning	100	0	0	0	0	0	0	100
Application	100	0	Ŭ	Ŭ	0	0	Ŭ	100
Direct nitrous oxide emissions from managed soils	100	0	0	0	0	0	0	100
Indirect nitrous oxide emissions from managed soils	100	0	0	0	0	0	0	100
Indirect nitrous oxide emissions from manure manageme nt	100	0	0	0	0	0	0	100
Harvested wood products Waste	100	0	0	0	0	0	0	100
Solid waste disposal on land	100	0	0	0	0	0	0	100
Biological treatment of solid waste	100	0	0	0	0	0	0	100

Sector	Basic tax-free allowance for fossil fuel combustion emissions %	Basic tax- free allowance for process emissions %	Fugitive emissions allowance %	Trade exposure allowance %	Z-factor allowance %	Carbon budget allowance %	Offsets allowance %	Maximum total allowances %
Incineratio n and Open burning of waste	100	0	0	0	0	0	0	100
Wastewate r treatment and discharge Additional	100	0	0	0	0	0	0	100
Categorie s								
Other**	60	0	0	10	10	5	10	95

** This category covers any entity that perceives that it does not fall under any of the categories listed above.

SCHEDULE 3

(Section 21)

GENERAL EXPLANATORY NOTE:

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 Words in bold type in square brackets indicate omissions from existing enactments.

 Words underlined with a solid line indicate insertions in existing enactments.

Amendment of section 1 of Act 91 of 1964, as amended by section 1 of Act 95 of 1965, section 1 of Act 57 of 1966, section 1 of Act 105 of 1969, section 1 of Act 98 of 1970, section 1 of Act 71 of 1975, section 1 of Act 112 of 1977, section 1 of Act 110 of 1979, sections 1 and 15 of Act 98 of 1980, section 1 of Act 89 of 1984, section 1 of Act 84 of 1987, section 32 of Act 60 of 1989, section 51 of Act 68 of 1989, section 1 of Act 59 of 1990, section 1 of Act 19 of 1994, section 34 of Act 34 of 1997, section 57 of Act 30 of 1998, section 46 of Act 53 of 1999, section 58 of Act 30 of 2000, section 60 of Act 59 of 2000, section 113 of Act 60 of 2001, section 131 of Act 45 of 2003, section 66 of Act 32 of 2004, section 85 of Act 31 of 2005, section 7 of Act 21 of 2006, section 10 of Act 9 of 2007, section 4 of Act 36 of 2007, section 22 of Act 61 of 2008 and section 1 of Act 32 of 2014

1. Section 1 of the Customs and Excise Act, 1964, is hereby amended by the insertion in subsection (1) after the definition of "bulk goods terminal operator" of the following definition:

"Carbon Tax Act' means an Act of Parliament that makes provision for a carbon tax;".

Amendment of section 54A of Act 91 of 1964, as inserted by section 139 of Act 45 of 2003 and renumbered by section 32 of Act 16 of 2004

2. The following section is hereby substituted for section Section 54A of the Customs and Excise Act, 1964:

"Imposition of environmental levy

54A. A levy known as the environmental levy shall be-

- (a) leviable on such imported goods and goods manufactured in the Republic as may be specified in any item of Part 3 of Schedule No.1; and
- (b) collected and paid in respect of carbon tax imposed in terms of the Carbon Tax Act.".

Insertion of section 54AA in Act 91 of 1964

3. The following section is hereby inserted in the Customs and Excise Act, 1964, after section 54A:

"Provisions relating to carbon tax

54AA. (1) For the purposes of the administration and collection of carbon tax revenues as contemplated in section 54A—

- (a) (i) any reference to the Carbon Tax Act in this Act must be regarded as including the Tables and Schedules to that Act and any regulation made in terms of that Act;
 - (ii) in this Act, unless the context indicates otherwise, a word or term to which a meaning has been assigned in the Carbon Tax Act has the meaning so assigned;
- (b) a 'taxpayer' as defined in section 1 of the Carbon Tax Act is not required to license premises as contemplated in section 54E of this Act, but must register as may be prescribed by rule;
- (c) the allowances and limitation of allowances prescribed in the Carbon Tax Act must be administered as rebates, refunds or drawbacks, as may be applicable, in terms of this Act; and

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must, to the extent not prescribed in the Carbon Tax Act, be prescribed by the <u>Commissioner by rule.</u>".